

**The Silent Teacher Unveiled - Attitudes of UK medical students  
towards learning more about the lives of body donors**

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## **Abstract**

Individuals donating their bodies to medical school for anatomical examination typically remain anonymous. However, there is increasing interest in the impact of removing donor anonymity. Such 'personalisation' has been suggested to emphasise donors' humanity, resulting in improved attitudes and behaviours displayed by medical students in the dissection room. Despite the proposed benefits linked to student professional identity formation, there is a lack of literature exploring this concept in the United Kingdom.

Therefore, this study had related objectives explored in three phases. The first was to determine whether medical students at the University of Leeds were open to receiving donor information (Phase 1). Secondly, to establish whether body donors would be willing to surrender their current status of anonymity (Phase 2). Finally, to explore the effect of donor information on medical students (Phase 3).

Given the exploratory nature of this research, it was appropriate to adopt a qualitative approach to collecting and analysing data. Consequently, one-to-one interviews were undertaken with students in Phases 1 and 3 and donor interviews completed during Phase 2.

The findings of this study suggest that receiving donor information does lead students to appreciate the humanity of donors. This, in turn, appears to prompt students to reflect on their behaviour in the dissection room, with a focus on themes of respect and detachment. Furthermore, students report feeling a renewed appreciation for the act of donation, leading to a greater sense of responsibility regarding their duty of care towards donors.

Such findings could prove useful in fostering the personal and professional development of students studying for a medical degree.

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## **List of Abbreviations**

ACGME – Accreditation Council for Graduate Medical Education

BSc – Bachelor of Science

CanMEDS – Canadian Medical Education Directives for Specialists

DR – Dissection Room

GMC – General Medical Council

HTA – Human Tissue Act

MBChB – Bachelor of Medicine, Bachelor of Surgery

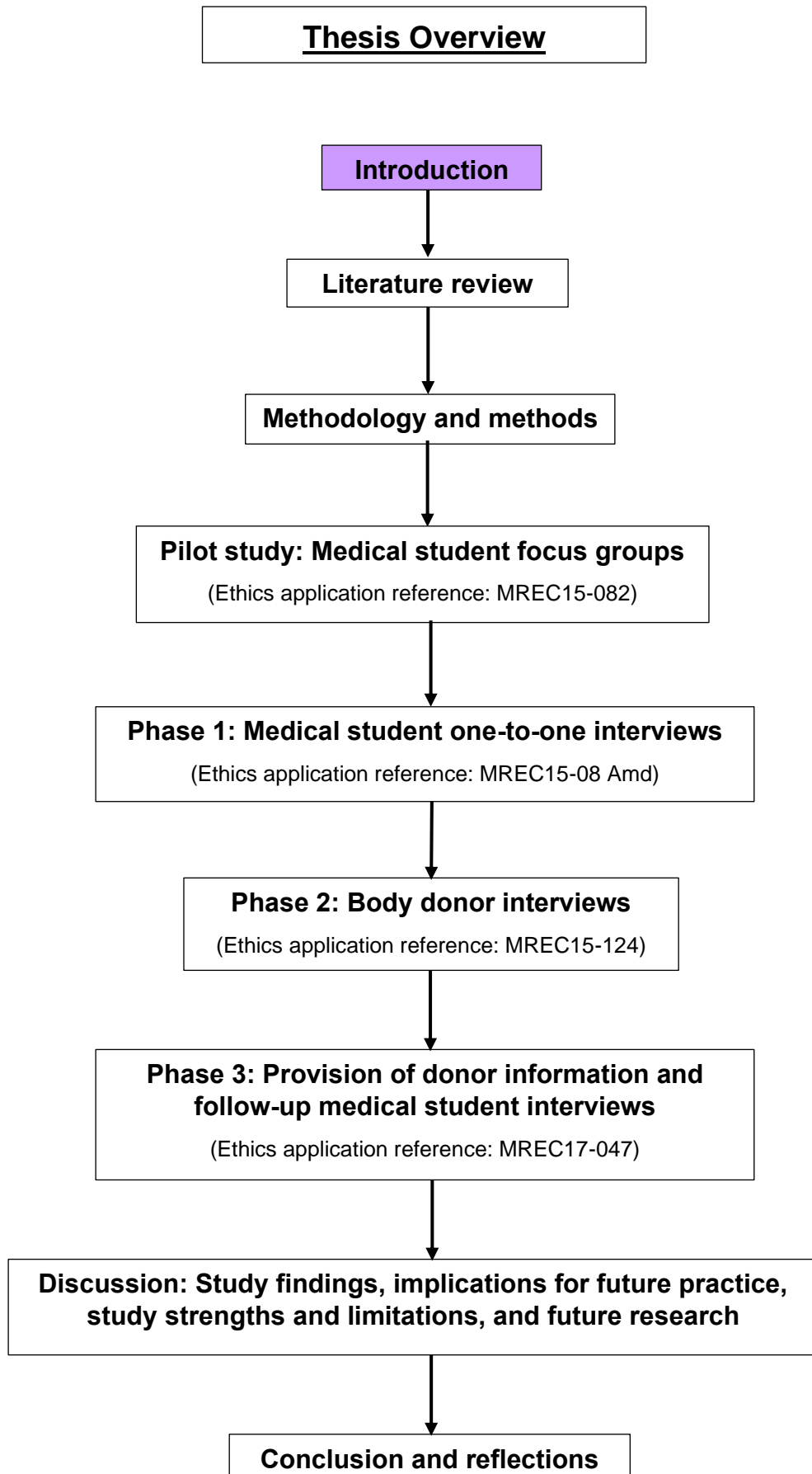
NHS – National Health Service

PIF – Professional Identity Formation

UK – United Kingdom

USA – United States of America

VLE – Virtual Learning Environment



# Chapter 1 Introduction

## 1.1 Overview of the subject being studied

For centuries, dissection has been considered as the gold standard for anatomical education in medical schools (Evans and Watt, 2005). This experience is generally available for medical students as a result of generous donations by altruistic individuals, gifting their body for anatomical examination purposes (Cornwall and Stringer, 2009; Jones and King, 2017).

By virtue of tradition, body donors typically remain anonymous (Jones and King, 2017). However, recent literature has seen an increased exploration of the potential effects of removing the element of anonymity between body donors and medical students. This literature tends to suggest that students who receive information about body donors might be more inclined to display attitudes of respect, empathy and compassion in the dissection room (DR) setting than students who continue to view the body donor as an anonymous entity (Crow et al., 2012; Hildebrandt, 2014; Dosani and Neuberger, 2016).

The development of these attitudes during the medical degree, specifically in relation to the anatomy curriculum, tends to receive little attention (Madill and Latchford, 2005; Swick, 2006; Heyns, 2007). However, the body of literature exploring this previously uncharted avenue of potential medical student personal and professional development has now started to expand. A driving force for this appears to stem from a strong belief that medical students may retain learned behaviours, attained during medical school, throughout their future professional careers (Lin et al., 2009; Crow et al., 2012; Talarico, 2013; Dosani and Neuberger, 2016). Consequently, within the context of medical education, the expectation of learning and developing professionalism has become key, including areas within the medical degree where opportunities exist for this development to be encouraged.

## 1.2 Professionalism

Medical schools have an increasing responsibility to produce well educated, competent, graduates who are able to function professionally within the medical

profession (Lachman and Pawlina, 2006; Sullivan, 2000), resulting in the teaching of medical professionalism becoming increasingly important.

### 1.2.1 What is meant by medical professionalism?

Professionalism is a complex concept that encompasses many attributes and behaviours, including the conduct, aims, or qualities that an individual displays (Finestone, 2012). However, perhaps a universal definition of this concept will be difficult to achieve especially when taking into account cultural, contextual and generational changes and how these might impact the view individuals have on what it means to display professionalism. Suggested definitions from the literature include, but are not limited to: abiding by the Hippocratic Oath, being responsible for patients (Swartz, 2006), having specialised knowledge of a subject, commitment to serve, and placing other's needs before one's own (Page, 2006). The consequence of having so many interpretations of what it means to display medical professionalism has been that discussions regarding this topic are usually somewhat ambiguous (Swick, 2000). The lack of a common understanding can lead to confusion amongst medical students as they are encouraged to strive to display high levels of professionalism without clear guidance of what exactly it is they are expected to achieve.

In an attempt to provide a more in-depth explanation of medical professionalism, Van De Camp et al. (2004) conducted an extensive search of the literature and identified a total of 90 constituent elements of professionalism, with altruism, accountability, respect and integrity being the attributes most frequently associated with this term. Capturing the essence of these elements, one definition of medical professionalism in the United Kingdom (UK) was proposed by the Working Party of the Royal College of Physicians (2005, p.14) entitled "*Doctors in society, Medical professionalism in a changing world*". This report provided a clearer definition of professionalism by considering medical professionals' behaviours and relationships:

*"Medical professionalism signifies a set of values, behaviours, and relationships that underpins the trust the public has in doctors"*

In essence, at the core of the medical profession is the need to create and nurture a two-way relationship between patients and physicians (Swick, 2000).

The General Medical Council (GMC) Outcomes for Graduates (2018) emphasises professionalism for medical students studying in the UK. These outcomes highlight the domains of professionalism that medical students should be able to demonstrate at the time of graduation as being Professional Values and Behaviours, Professional Skills, and Professional Knowledge. In addition to this, Good Medical Practice (General Medical Council, 2014) has also previously described professionalism through the following behaviours expected of doctors:

- *“Make the care of your patient your first concern*
- *Be competent and keep your professional knowledge and skills up to date*
- *Take prompt action if you think patient safety is being compromised*
- *Establish and maintain good partnerships with your patients and colleagues*
- *Maintain trust in you and the profession by being open, honest and acting with integrity”*

Interestingly, although these guidelines allude to “*professional knowledge and skills*”, there is no detailed explanation as to what this might mean in practice.

Professionalism is also a global concern, for example in the United States of America (USA) the Accreditation Council for Graduate Medical Education (ACGME) (Natesan et al., 2018) also aims to ensure that medical students understand the importance of professionalism and patient care. Within the ACGME framework, professionalism is defined as:

- *“Compassion, integrity, and respect for others;*
- *Responsiveness to patient needs that supersedes self-interest;*
- *Respect for patient privacy and autonomy;*
- *Accountability to patients, society and the profession; and,*
- *Sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation”*

More recently, institutions worldwide including those in Singapore, Qatar and the United Arab Emirates have also begun to adopt the ACGME competency

standards, using them when designing their medical school curriculum to ensure the education of well-rounded, competent physicians who will be well equipped to meet the demands of society (Day and Nasca, 2019). In addition to this, the Canadian Medical Education Directives for Specialists (CanMEDS) competency framework was developed in response to issues regarding accountability and professionalism that were being brought to light in Canada (Frank and Danoff, 2007). Much like the GMC and ACGME frameworks, CanMEDS competency framework also appears to describe professionalism as placing the patient at the forefront, with emphasis on the patient experience and high levels of patient satisfaction whilst delivering the highest quality care possible.

Traditionally, it was not thought necessary for students to be taught professionalism. Instead, it was anticipated that they would acquire elements of professionalism through observing the actions of mentors and role models throughout their training (Pawlina, 2006; Cruess et al., 2016). However, it is now argued that the idea of waiting until students spend time on placement before introducing them to professionalism is outdated. It is no longer deemed necessary to wait until students are interacting with patients and more experienced clinicians before they begin developing their professional skills (Swartz, 2006; Swick, 2007). Additionally, it is now recognised that students do not naturally osmose professionalism and that it needs to be explicitly taught for students to develop the mantle of medical professionalism. The teaching of anatomy, which occurs early in training seems an ideal time to introduce professionalism teaching and this is now the trend in medical schools, prior to students interacting with patients.

Importantly, not all role models are good for students and it is unclear how students might determine this if not specifically taught about professionalism. Subsequently, some medical schools, notably those in the United States, have begun incorporating stand-alone professionalism courses, designed with the hope of helping students develop professional skills, such as communication and humanistic patient-centred virtues, attitudes, and behaviours including respect, empathy and altruism (Colvin et al., 2018; Evans et al., 2018; Goss et al., 2019). Whilst such courses might provide students with focussed time that they are conscious is dedicated to their professional development, there is an

argument that the medical curriculum is already overcrowded. This raises questions as to what existing elements of medical training no longer deserve their place within the curriculum, which will no doubt be controversial and not accepted by all medical educators.

The above highlights that there is no consensus as to when and how during the medical curriculum that professionalism and patient care should be taught.

#### 1.2.1.1 Professional identity formation

The implicit objective of teaching medical professionalism has been to assist learners as they develop their professional identity as a doctor (Cruess et al., 2014). Authors have suggested that instead of teaching and assessing professionalism, more focus should be placed upon helping students to negotiate the development of their professional identities; a process often referred to as professional identity formation (PIF).

Cruess et al. (2014, p.1447) offer the following definition:

*“A physician’s identity is a representation of self. Achieved in stages over time during which the characteristics, values, and norms of the medical profession are internalised, resulting in an individual thinking, acting, and feeling like a physician”.*

PIF has been noted to occur on both individual and collective levels, with Jarvis-Selinger et al. (2012, p.1185) stating PIF is:

*“An adaptive developmental process that happens simultaneously at two levels: 1) at the level of the individual, which involves the psychological development of the person and 2) at the collective level, which involves the socialisation of the person into appropriate roles and forms of participation in the community’s work”.*

Taking these definitions in to account, it is my understanding that PIF is the process students go through to develop the skills of professionalism that they will rely on in their future careers. This process can potentially be influenced by a variety of factors, meaning it is important to take in to account a student’s personal experiences prior to attending medical school, as well as the environment in which they will be nurtured into medical professionals through a

series of different social situations. The process of being shaped by a range of societal factors is referred to as 'socialisation'.

Socialisation is a particularly interesting concept, comprising a combination of personal experience, reflections on these experiences and social interactions that take place in a learning environment (Burford, 2012; Helmich et al., 2012; Evans and Pawlina, 2020). For example, in a study conducted by Aka et al. (2018), anatomy educators were able to identify body painting as an activity during which students go through a process of socialisation. Body painting consists of medical students painting anatomical structures on each other's bodies. Depending on the anatomy to be painted, this may require students to remove certain items of clothing. Consequently, some students may be left feeling vulnerable and uncomfortable. This can allow students to experience the emotions a patient may feel when being examined by them later in their professional careers, a concept which is important for students to begin to understand early in their medical training in order for them to nurture positive patient-doctor relationships.

The response of each individual to socialisation will vary, but all must enter into a series of personal negotiations as they acquire their new identity (Cruess et al., 2015). For example, mature students often enter their training with a more developed personal identity and so may respond differently to medical school in comparison to students entering straight after finishing secondary school (Cruess et al., 2015; Cruess et al., 2014). I find myself in agreement with this proposition, after observing students who enter the medical degree either as a postgraduate or mature student and noticing that they are more focussed during anatomy classes, with a greater motivation towards their academic studies as opposed to additional (social) commitments outside of their medical degree. Other factors that also need to be taken into consideration that might shape an individual's personal identity include gender, nationality, race, religion, class, as well as whether their parents are healthcare professionals or not. All of these characteristics may influence how the individual is perceived and perceives themselves (Cruess et al., 2014) which can have an impact on their PIF.

### **1.2.2 The role of anatomy in promoting professionalism and developing a professional identity**

To highlight the role that anatomy can play in promoting professionalism, in 2006 a special issue of *Clinical Anatomy* was published. This issue of *Clinical Anatomy* marked a time whereby anatomy was formally recognised as promoting the development of professional attributes. This signalled a shift from the traditional perspective that the main objective of the anatomy course was for students to simply memorise the intricate anatomy of the human body (Pawlina, 2006). It prompted researchers to begin exploring the links that may exist between professional development and the anatomy course and, as a result, the pool of literature relating to this topic has been expanding ever since (Netterstrøm and Kayser, 2008; Hildebrandt, 2014; Evans and Pawlina, 2020).

The first experiences of anatomy typically represent a time when students transition from the lay world to the medical world (Finn and Hafferty, 2020; Rizzolo, 2002; Escobar-Poni and Poni, 2006) meaning students first start to begin to understand what it means to become a medical doctor (Shiozawa et al., 2016). In my experience, for many students, entering the DR will feel like their first step in becoming a real doctor, and as such, dissection has been claimed to be a “*professional rite of passage*” (Warner and Rizzolo, 2006, p.404) especially as dissection provides students with the opportunity to touch another person in a similar way that they will touch a patient, providing a key moment for students where they cross a boundary that sees them enter into the process of developing their identity as medical professionals (Netterstrøm and Kayser, 2008).

Anatomists involved in teaching medical students are in a prime position to guide and support them through this transitional period. By handling and referring to the donors in an appropriate manner, showing attributes of respect, compassion, excellence, knowledge and responsibility (Escobar-Poni and Poni, 2006) anatomists can educate students on what behaviour is expected of them. With this in mind, the anatomy course has been identified as a way in which respect, specifically, can be fostered. Swartz (2006), emphasises that respect for the humanity of the donor may be elicited during anatomy teaching, whilst Lachman and Pawlina (2006) propose that reflective practice may be promoted through anatomy teaching. In my experience of teaching anatomy, encouraging students to develop a sense of accountability for their actions in the context of their future careers is a key aim.

Students can also be encouraged to consider the decision an individual has made to bequest their body to the training of future medical professionals. Such consideration would provide students with their first insight into the trustworthiness expected of them by the general public (Rizzolo, 2002). Despite the recognised potential benefits of the anatomy course, Pawlina (2006) suggests that the opportunity to nurture professionalism formally as part of the anatomy course is often neglected, though they do not provide any substantial evidence to support their claim.

Instead, the literature tends to focus on what traits of professionalism students *could* develop whilst studying anatomy (Marks et al., 1997; Gregory and Cole, 2002; Swartz, 2006; Ghosh, 2017), as opposed to *how* they might develop them as a result of anatomy.

#### 1.2.2.1 The hidden curriculum

The hidden curriculum consists of learning outcomes and experiences that occur outside of the formal curriculum (Swick, 2006). In developing my understanding of this theory, I found the following definition provided by Finn and Hafferty (2020, p.483) to be particularly useful:

*“The hidden curriculum refers to the tacit, implied, unwritten, unofficial, and often unintended behaviours, lessons, values, and perspectives that students learn during their education”.*

The hidden curriculum was first highlighted by Jackson (1968) in their book *“Life in Classrooms”*. However, the concept of a hidden curriculum was not introduced within the domain of medical education until the early 1990s by Hafferty and Franks (1994). Prior to this, the medical curriculum was thought to consist only of the formal curriculum of intended outcomes (Kumar Ghosh and Kumar, 2019), for example, anatomical knowledge. In other words, learning the factual anatomy was the only perceived outcome of practical anatomy classes. More recently there is now greater appreciation that a wider skill set can be developed throughout the anatomy experience.

Current research in this area suggests that anatomical teaching can provide an introduction to the cognitive and emotional aspects of death and dying as well as highlighting skills of professionalism to be fostered (Flack and Nicholson, 2018; Kumar Ghosh and Kumar, 2019). Furthermore, there have been

suggestions that the hidden curriculum can have strong influence over PIF of medical students, potentially even more powerful than the formal curriculum might have on this transition (Wilson et al., 2013; Cruess et al., 2014). I have experienced this when teaching Physician Associate students. Each year, the cohort would learn from the previous group of students that anatomy was not specifically examined in the end of year exam. It would become clear when students had learned this information from their peers as not only would the attendance rate start to drop off, but also students did not appear as concerned about understanding the anatomy during practical classes. This shows an example of how the hidden curriculum can impact student attitudes and behaviours regarding anatomy class.

The role of anatomists in teaching professional values in the dissection room has, for many years, been implicit in nature (Pawlina, 2006; Escobar-Poni and Poni, 2006; Netterstrøm and Kayser, 2008). However, in recent years this assumption, particularly relating to PIF and the hidden curriculum, has started to be formally addressed in the literature (Finn et al., 2010; Hafferty and Finn, 2015; Mullikin et al., 2019).

An interesting aspect of this type of research is exploration as to how the hidden curriculum can be utilised to influence the development of professionalism. For example, there is growing interest in the impact on students of placing emphasis on the humanity of body donors, for instance, by promoting respectful treatment of donors, emphasising the trust that donors are placing in students and encouraging empathy and reflection (Swick, 2006). Simple acts such as covering the donor's face or genitalia are suggested to encourage students to realise the importance of a patient's privacy as well as showing respect for the patient's body (Escobar-Poni and Poni, 2006). Additionally, Escobar-Poni and Poni (2006) suggested that a memorial service can also encourage feelings of compassion, respect, responsibility and altruism amongst students. They proposed that this could be achieved through interaction with relatives of the donors attending such service, to remind students that anatomy is about more than bodies/cadavers, hence emphasising the humanity of body donors.

In more recent years, this approach appears to have been adopted by medical schools in different parts of the world (Kumar Ghosh and Kumar, 2019). In Taiwan (Lin et al., 2009; Tseng and Lin, 2016) and the USA (Crow et al., 2012;

Talarico, 2013) there are examples of medical students meeting with donor families to learn more about the donor they will dissect. Also, in the USA, students have been reported to watch donor interviews whereby donors divulge their motivations for donating as well as how they hope their donations may be of benefit to students (Dosani and Neuberger, 2016; Kostas et al., 2007; Böckers, Anja, 2020). The inclusion of such practices could be deemed to be a way of utilising the anatomy course to encourage the socialisation of medical students as part of their PIF (Cruess et al., 2014), although no specific links to the hidden curriculum are made in the literature. Instead, researchers tend to focus on the professional benefits of these practices.

Integration of such programmes of activities appears to be important, as there is suggestion that some students focus too much on knowledge accumulation in order to pass examinations and, in doing so, neglect the deeper learning objectives that the anatomy course presents (Aka et al., 2018; Evans and Pawlina, 2020). This has generated proposals that course leaders should be more explicit in telling students that they are expected to develop professionally as well as academically (Evans and Pawlina, 2020).

This concept of the hidden curriculum was explored further by Finn and Hafferty (2020) who reported that, in one institution, students were learning from their peers that it was possible to pass the course, even if they did not pass the anatomy component. This led to some students skipping anatomy class as they did not deem it to be essential in gaining their medical qualification, a scenario very similar to my own experiences with Physician Associate students described above. However, as Finn and Hafferty (2020) suggested, the students missing anatomy classes were not developing the full range of skills associated with the dissection course, typically those associated with the hidden curriculum, such as developing skills of professionalism. Students who focussed exclusively on how they could pass their exams were not gaining the long-term benefits afforded by dissection.

Furthermore, although students who do attend anatomy class may be told to 'respect the cadaver' without the support of regular monitoring by faculty or the avoidance of anatomists referring to bodies as 'learning tools' or 'it', then students may not be receiving the intended message (Finn and Hafferty, 2020; Hafferty and Finn, 2015). One example of this was reported at the University of

Pennsylvania's Perelman School of Medicine where students attended a formal course on professionalism. However, the professional values that students were being encouraged to develop were not being displayed by staff in the anatomy laboratory, who chose to refer to donors as 'cadaver' and 'body'. Nor was there discussion during anatomy classes about how the dissection experience could potentially shape students emotionally, morally, or professionally (Goss et al., 2019). This situation highlights the need for all staff to come to an understanding about the type of language and behaviour that they wish for students to observe and for these standards to be adopted across the whole medical school.

Anatomy was traditionally taught using just lectures and dissection, however with the introduction of a variety of tools such as plastinated specimens, models, anatomy apps to give 3D understanding, body painting and virtual dissection, the main goals of anatomy have expanded. This change means that the main focus is no longer purely on gaining anatomical knowledge and this allows consideration as to how the different approaches to anatomical education might impact a student's PIF. There are several reports in the literature that the attitudes and behaviours students develop during the course of the medical degree can ultimately shape the future doctor-patient relationships they will establish (Charlton et al., 1994; Coulehan et al., 1995; Robbins et al., 2009; Tseng and Lin, 2016). Consequently, the way in which students approach a donor and whether this is with respect, empathy and sensitivity or with callous disregard may predict their later approach with patients (Swick, 2006).

The donor represents the position a future patient may find themselves in; extreme dependence on their doctor as they are unable to defend themselves from any potential abuse of power. This presents students with the opportunity to learn about the ethical and moral challenges of not only how to behave towards donors, but also towards their future patients.

### **1.3 Researcher background**

Studying for a Master's degree in Human Anatomy at the University of Edinburgh (2013-2014) provided me with my first experiences of working in a DR. It was during this time that I became aware of developing a 'relationship'

with the body donor I was dissecting. I was in awe of the gesture he had made by donating his body, thus providing me with the opportunity to learn the intricacies of, and gain an in-depth appreciation for, the human body. I gave this donor a name ('Colin') and the more I worked with him, the more protective I became over his body. Throughout the course of the Master's degree, I was also interested to observe the range of behaviours displayed by my colleagues in the DR. Whilst some individuals, much like myself, appeared to be emotionally invested in the body donors, it became apparent that others preferred instead to maintain emotional distance from the body donor as a person.

Upon completion of my Master's degree, I applied for this PhD project at the University of Leeds. The opportunity at Leeds meant I could also work as an anatomy demonstrator whilst conducting my research. The topic of the PhD was proposed by my supervisors, however, once I commenced my studies, I was able to have input regarding the direction in which this project went, including the methodology and methods that I chose to adopt throughout. I felt this PhD study would be a valuable opportunity for me to begin understanding the range of behaviours displayed by students in dissection classes towards body donors. Not only this, but it would provide me with the opportunity to learn more about body donors, including their motivations for donating, which has intrigued me since first encountering a donor in the DR. I also hoped studying for this PhD would allow me to begin exploring how medical students might feel about, and are ultimately impacted by, removing the aspect of absolute body donor anonymity, or whether students even believe this to be appropriate in the first place.

#### **1.4 Overview of the thesis**

This thesis begins with a review of the literature exploring medical student reactions to dissection, as well as the impact of the disclosure of body donor information on medical student attitudes and behaviours (Chapter 2). I developed a set of research questions that guide the research presented in the following chapters of this thesis.

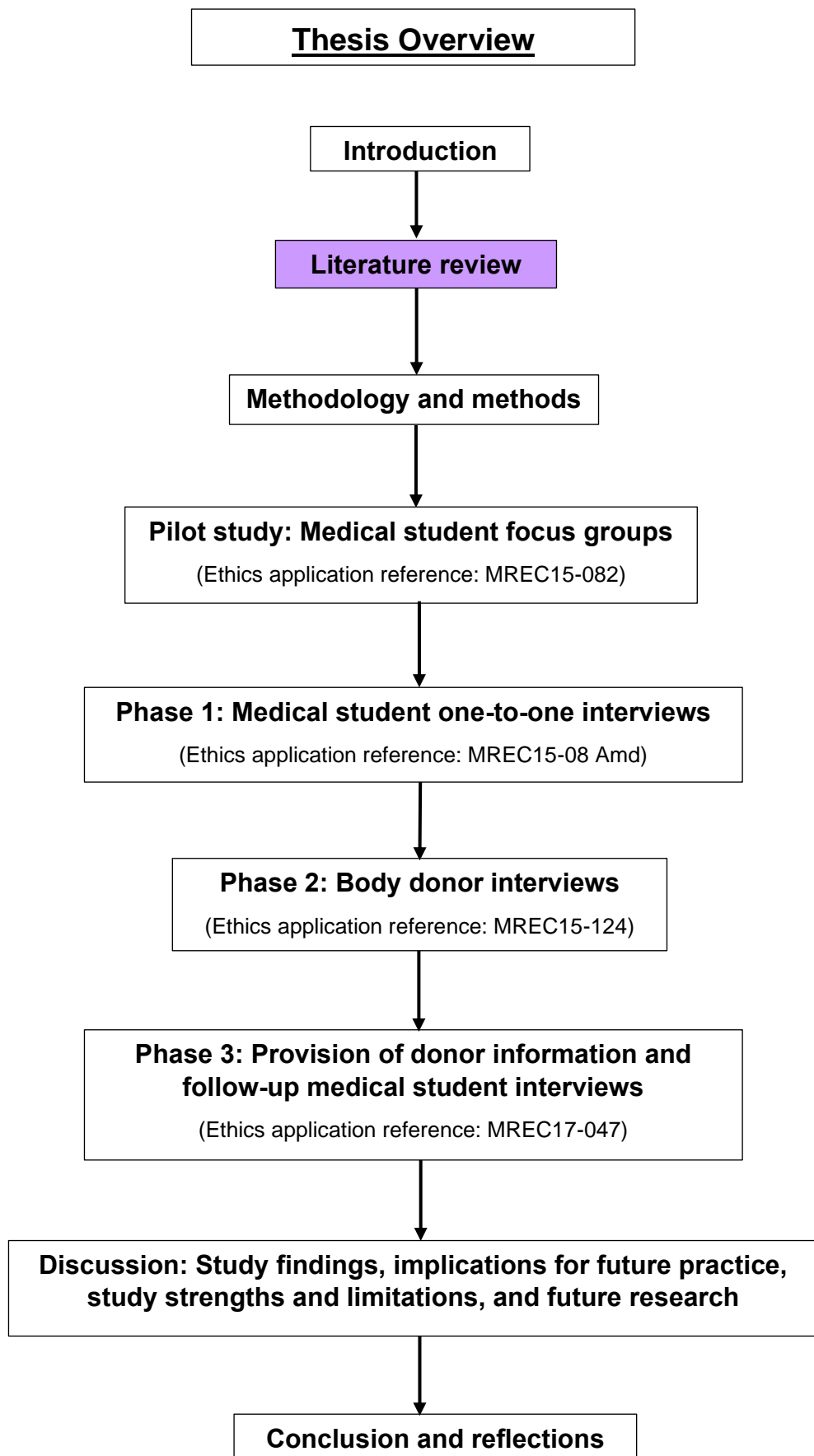
Chapter 3 gives details of the methodology and methods used throughout this study, including a pilot study. The findings from the pilot study are presented

and discussed in Chapter 4. Chapters 5, 6 & 7 report the findings from three different studies; Phases 1, 2 and 3, respectively.

Phase 1 (Chapter 5) describes a one-to-one interview study with medical students, which I utilised in order to determine a) *If* medical students were open to receiving information about body donors, and b) *What* information might be of interest to them. Subsequently, Phase 2 (Chapter 6) shares the findings gathered via one-to-one telephone interviews that were completed with prospective body donors. Chapter 7 reports the third and final phase in which medical students were provided with donor information followed by exploration of how this experience had affected them.

The findings of each Phase are discussed in the relevant chapters and in Chapter 8 I draw together all the findings of this study and discuss their implications. This includes the relevance of what has been discovered throughout the course of this PhD, including the implications for future practice, as well as considering the possibility of further study into this topic. This thesis closes with a final reflection on my research experiences and concluding remarks (Chapter 9).

A flow chart depicting the different chapters is provided at the start of each chapter to help the reader map their progress through this thesis.



## Chapter 2 Literature review

This chapter provides a review of the literature relating to dissection within anatomical education, with particular focus on the anonymity of body donors. I will explore recent attempts to encourage medical students to personalise donors, including the reasons for doing this and the impact that this may have on students. This review helped me to formulate my research questions which are set out at the end of the chapter.

### 2.1 The origins of human anatomy and dissection

Although the study of anatomy is thought to date back to 2000 BCE, there is evidence that shows some Egyptian papyruses which date even further back, to around the time of 3000 BCE (Siddiquey et al., 2009; Brenna, 2021). These records detail embalmers as being the first Egyptian anatomists due to their role of observing and detailing the body's composition for the purposes of mummification (Loukas et al., 2011).

It was not until 500 BCE that the first accounts of human dissection were recorded in the Western World (Codellas, 1932; Debernardi et al., 2010), with the Greek physician Hippocrates (460-370 BCE) thought to have been the first to write books describing human anatomy (Von Staden, 1992; Malomo et al., 2006). These texts demonstrated basic understanding of musculoskeletal structures as well as some description about the function of organs, for example the kidneys (Siddiquey et al., 2009). Furthermore, Hippocrates believed it was important to acknowledge the relationship between patient, physician, and disease in the diagnosis and treatment of illness (Malomo et al., 2006).

The Greek physician, Antonius Galenus (Galen) (131-192 CE), wrote over 130 treatises based on observations during his time spent as a surgeon for wounded gladiators (Malomo et al., 2006). However, as he relied on dissections of animals (for example, pigs and monkeys), many of his anatomical descriptions were inaccurate (Robinson, 2013). Despite this, for more than a thousand years following his death, Galen's work became the cornerstone of anatomy as dissections were largely limited to animals, as opposed to humans (Malomo et al., 2006; Brenna, 2021).

The first public human dissection to take place in Europe took place at the University of Bologna in Italy, in 1315 (Lassek, 1958; Mavrodi and Paraskevas, 2014) . At this time in the 14<sup>th</sup> century the focus of anatomy was on the memorisation of historical texts along with live demonstrations, where organs would be pointed out to the audience. Where any discrepancies arose, they were simply put down to the human body changing rather than consideration that the historical texts may be incorrect (DeBroe et al., 1997; Frati et al., 2006; Nutton, 1973).

Unlike the rest of Europe, where human dissection had remained stagnant throughout the 14<sup>th</sup> Century, the Italian Renaissance began to redefine this practice (Brenna, 2021). Leonardo da Vinci (1452-1519) was at the forefront of this 'revolution' combining art and science in ways not seen before to produce vivid illustrations of the human form, based on his many dissections – both human and animal (Keele, 1951; Jones, 2012).

Just decades after the death of Leonardo da Vinci, Andreas Vesalius (1514-1564) continued to combine art with science and was later to become one of the most well-known and respected surgeon-anatomists to dissect a human body (Zampieri et al., 2015; Siddiquey et al., 2009). The dissections by Vesalius led to the publication of the text "*De Human Corporis Fabrica*" in 1543 (Vesalius, 1543), the first anatomy book to include illustrations (Siddiquey et al., 2009; Brenna, 2021). Vesalius' work challenged the dogma of Galen and replaced the faith that had been placed in ancient texts with learning anatomy via human dissection (Aziz et al., 2002; Ghosh, 2015). For this, Vesalius can arguably be considered the founder of modern anatomy (Malomo et al., 2006).

## **2.2 Introduction of legislations governing the use of cadavers for dissection**

By the 17<sup>th</sup> century, human dissection flourished throughout Europe with public dissections drawing huge crowds becoming common practice (Brenna, 2021). Such dissections would later be performed in purpose-built anatomy theatres and would be open to everyone from medical practitioner to layperson (McLachlan and Patten, 2006). As the benefits of conducting dissection first-hand for learning the intricacies of the human body became recognised, by the

18<sup>th</sup> century dissection had become a core component of the medical degree (Habicht et al., 2018).

However, with the explosion in popularity of human dissection came a shortage of bodies to dissect (Mitchell et al., 2011; Ghosh, 2015; Brenna, 2021). This was predominately because the 1752 Murder Act ruled that executed criminals were to be the only source of cadavers for human dissection (Brenna, 2021; Ghosh, 2015). In attempts to address this shortage, the list of crimes punishable by hanging was extended; however, there was still a shortfall of bodies across Europe (Ghosh, 2015), including within the UK (Mitchell et al., 2011).

Such cadaveric shortages encouraged the covert supply of bodies to medical schools, prompting the rise of illegal activities such as grave robbing, body snatching and murder (Magee, 2001; Mitchell et al., 2011). Perhaps two of the most infamous 'body snatchers' in the UK were William Burke and William Hare. Over a period of just 10 months in 1827, Burke and Hare are known to have murdered and sold the bodies of at least 16 individuals in Edinburgh to Robert Knox for use in his anatomy classes (Ghosh, 2015). Ultimately, Burke and Hare were discovered and subsequently convicted for their crimes (Tward and Patterson, 2002).

The frequency of unethical practices in England during the 19<sup>th</sup> century fuelled public panic and eroded public trust in anatomical sciences (Ghosh, 2015; Brenna, 2021). In response to this, the British Government recognised the need to develop new legislation and the Anatomy Act was passed in 1832 (Hutton, 2006), replacing the Murder Act that had been in situ since 1752. The Anatomy Act (1832) expanded the legal source of bodies for human dissection to include unclaimed bodies (typically the poor that died in workhouses) (Mitchell et al., 2011; Ghosh, 2015). Further to this, another way in which an adequate supply of bodies for medical schools was maintained was for patients in hospital to be provided with free treatment during life, on the condition that their body would be used for dissection purposes following their death (McLachlan and Patten, 2006).

Whilst the Anatomy Act (1832) succeeded in curtailing the practice of grave robbing, it also "*made poverty the sole criterion for dissection in England*" (Ghosh, 2015, p.161). Consequently, paupers began to hold increasingly negative views towards the medical profession, a viewpoint that was not helped

by several public scandals where medical schools claimed the bodies of the poor from workhouses before their own families had been able to claim the bodies themselves (Riederer et al., 2012; Ghosh, 2015).

In response to building public disquiet, the Anatomy Act (1832) was updated in 1871, introducing stricter rules and regulations governing the use of bodies in the teaching of anatomy. Most notably, consent was a requirement, and bodies for teaching anatomy were to be stored, maintained, and examined in licenced premises which restricted access to anatomy teachers and medical students only (Riederer et al., 2012). The Anatomy Act (1871) remained in place for over 100 years until further revisions resulted in the development of the Anatomy Act (1984).

At this time, a separate piece of legislation, the Human Tissue Act (1961) governed the removal of body parts for medical purposes, as well as post-mortem examinations (Lanham, 1971). Whilst the 1961 Act did not govern anatomical examination it did, much like the Anatomy Act (1984), rely on the premise of consent.

In 1999, due to reports of professional misconduct at Bristol Royal Infirmary (Smith 1998), an enquiry was conducted and found that other hospitals, specifically Alder Hey in Liverpool, had retained paediatric organs for research purposes (Hall, 2001), meaning children's organs and tissues had been removed, stored, and used without prior parental consent (Teasdale, 2002; Walshe and Higgins, 2002; Seale et al., 2006). This prompted an enquiry by Michael Redfern (Hall, 2001), with subsequent release of "*The Redfern Report*" (Redfern et al., 2001). Whilst the report emphasised the injustice felt by the parents of the children whose organs had been retained, it also highlighted the need for clearer guidelines regarding the retention and storage of human tissue (Smith 1998; Hall, 2001).

To make this legislation clearer, the British Government developed a singular, legislative framework that would govern the use of all human tissue (Riederer et al., 2012). As such, in December 2003 a Human Tissue Bill was introduced to UK parliament (Ellis, 2004) and the result of this was the implementation of the Human Tissue Act (HTA) (2004); which was to be employed in place of the Human Tissue Act (1961) and the Anatomy Act (1984) throughout England.

Consequently, the HTA (2004) not only governs body donation, but also the storage and use of all human tissue, with this law placing emphasis on the need for *informed* consent, prior to death, from those who opt to donate their body for anatomical examination (Price, 2005). Such consent gives individuals the power to say whether they consent to images of their body to be used, as well as providing consent for their bodies to be kept by licensed institutes for longer than the three-year period set out in the preceding Anatomy Acts (Riederer et al., 2012).

This brief overview of the legislation governing dissection in medical schools in the UK shows how the law has evolved over time to ensure that body donors are treated with respect, dignity, and care.

### **2.3 Factors influencing body donation for anatomical examination**

Following the legislation outlined above, it can be seen that the inclusion of dissection within the medical curriculum typically relies heavily on the altruism of individuals who choose to donate their bodies for this purpose (Anteby and Hyman, 2008; Bolt et al., 2011; Chiu et al., 2012).

Numerous studies have explored *why* an individual might choose to donate their body to a medical school for dissection purposes. These factors include exposure to the DR, physical health, and religion.

Findings about the effect of exposure to the DR have indicated a negative impact on willingness to self-donate after exposure to the dissection room (Bansal et al., 2013; Green et al., 2014; Anyanwu et al., 2014). It has been proposed that this negative association between the DR and willingness to donate is due to a bad experience in anatomy class, such as witnessing a cadaver being mistreated (Anyanwu et al., 2014). However, there is little research exploring this in depth.

Physical health is noted as a factor that will potentially alter attitudes towards body donation over time due to restrictions in place, particularly the weight restrictions that might be in place at certain universities (McClea and Stringer, 2013). It is well reported that obesity levels in populations worldwide is on the rise (James et al., 2001; Wang et al., 2011; Walls et al., 2012; Akarolo-Anthony et al., 2014), and this established increase in body weight of populations may

influence bequest programmes worldwide in the long run (McClea and Stringer, 2013).

### **2.3.1 The impact of religion on attitudes towards body donation**

One of the most frequently cited factors proposed to hold influence over attitudes towards body donation relates to the religious beliefs of an individual, whether that be an increase (Fennell and Jones, 1992) or decrease in willingness to donate (Boulware et al., 2004; Zhang et al., 2014). It is worth highlighting that body donation is supported by most religions as it is seen to be an act of human kindness. However, most individuals are completely unaware of their religion's attitudes towards body donation (Campbell, 1998; Jadhav, 2012; Ali et al., 2020).

The concept of culture is generally closely associated to the religious beliefs of a society, with suggestion that culture and religion both hold some level of influence over the other, and so should not be considered as separate entities (Cheng et al., 2015; Beyers, 2017). No matter what a person's religious or cultural beliefs, most individuals are thought to believe that death is not the end of physical life and there is some form of afterlife (Legare et al., 2012; Watson-Jones et al., 2017; Adekoya, 2021).

The most cited religion within Canada (Reitz et al., 2009), the USA and throughout Europe is Christianity (Merino, 2010; Haynes, 2020). Christian beliefs include the body and soul being separate entities (Burns, 2003), so perhaps this belief allows individuals following this faith to feel comfortable donating their bodies for dissection purposes. Christianity does not appear to directly address the issue of body donation, which tends to leave individuals to interpret whether or not this act would be appropriate under their chosen faith (Campbell, 1998). Despite this, those who choose to follow Christianity have mentioned that their faith was a driving force behind their decision to donate their body as they saw it as a way of helping others – a final act of altruism (Fennell and Jones, 1992).

The literature focusing on the impact of religion on attitudes towards body donation seems to emphasise religions other than Christianity. These faiths can be divided in to two subgroups: Eastern and Middle Eastern. Eastern faiths include; Hinduism, Buddhism, Sikhism and Chinese traditions (Confucianism

and Taoism), whilst Middle Eastern faiths include; Judaism and Islam (although Christianity can also be included here too) (Gillman, 1999).

#### **2.3.1.1 Eastern religions and body donation (Hinduism, Buddhism, Sikhism, Confucianism, and Taoism)**

Within Hinduism it is believed that 'while the body is mortal, the soul is immortal' and there is an assumption that an individual is reborn in a different physical form, a belief that is indirectly believed to allow for body donation, as the body is not considered to be important (Rokade and Gaikawad, 2012). In addition to this belief, Hinduism centres around concepts such as the 'Law of Karma', and 'Dharma' ('good duty'), which have been interpreted to suggest that followers of this religion are encouraged to do good for others (Ajita and Singh, 2007). In line with this, there are many stories within Hindu mythology that refer to parts of the human body being used for the benefit of other humans (Rokade and Gaikawad, 2012) and there is no clear statement within Hinduism that directly prevents its followers from donating their bodies (Ajita and Singh, 2007).

Buddhist-majority countries, such as Thailand, Taiwan and Japan also benefit from a willingness of individuals to donate their bodies (Habicht et al., 2018; Lin et al., 2009). This is explained by beliefs within this religion that organ and tissue donation are seen as an act of compassion (Rokade and Gaikawad, 2012). As such, Buddhist teachings honour individuals who choose to donate either their organs or bodies in order to help advance medical science, thus attempting to help save lives (Gillman, 1999; Ajita and Singh, 2007). The honour that body donors are treated with has meant that there is not typically a shortage of donors for dissection in cultures that predominately follow the Buddhist religion (Lin et al., 2009).

Although the literature regarding Sikhism and body donation is scarce, a recent study reported that followers of the Sikh faith support the notion of organ donation (Johal et al., 2018). Sikhs believe that life is a constant cycle of death followed by rebirth (Oliver et al., 2012), but do not believe the physical body is important in this process, where performing good actions is more crucial for this cycle to occur (Exley et al., 1996). This *could* suggest that Sikhism might present no religious 'barriers' to body donation, but without further exploration this remains speculative.

In contrast to Hindu, Buddhist and Sikh beliefs, there is strong belief in the traditional Chinese culture of Confucianism that an individual must be 'laid to rest' following death (Zhang et al., 2014), with some followers of Confucianism describing death as a 'deep sleep' (Park et al., 2011). Consequently, this belief does not allow for body donation as it is the view that such practice could be seen as interfering with the peaceful internment of the body (Zhang et al., 2014). Additionally, traditional Confucianism states that an individual does not have ownership over their body; it belongs to their parents. As such, any physical disruptions to one's body during both life and after death is considered disrespectful towards one's parents (Zhang et al., 2008). With these views still at the forefront in modern day China, there is a great deal of hesitation surrounding body donation (Zhang et al., 2014), which has reportedly led to a shortage of donors in Chinese medical institutes (Zhang et al., 2008).

Taoism is another well-established religion which may also contribute towards the shortage of donors for anatomical education in China. Taoism states that the afterlife is believed to exist, whereby death is simply another form of life during which necessities such as food, drink and money are all required. Any form of 'damage' to the body is thought to prevent a person living a complete life following their death, a belief which is known to prevent the act of organ donation (Tai, 2009). Therefore, it would be reasonable to presume that the same would apply for body donation as the process of dissection would also cause, what could be considered to be, a great deal of 'damage' to an individual's body, thus interfering with their life following death.

#### **2.3.1.2 Middle Eastern religions and body donation (Islam and Judaism)**

Islam is one of the fastest expanding religions worldwide (Kettani, 2010), and due to a strong belief in the afterlife, requires that the body be buried immediately after death (Bhootra, 2006). This might explain why in their recent study exploring the source of bodies for anatomical education worldwide, Habicht et al. (2018) reported that no Muslim-majority countries appeared to have high body donation rates, and instead relied on using unclaimed bodies in their medical schools.

Perhaps the lack of guidance on body donation in Islam has caused followers to be cautious about donating their bodies for dissection purposes, especially as

there is no known advice on the issue of autopsy provided in the two major sources of Islamic faith and law, the Qur'an or Hadith (Bhootra, 2006; Gürses et al., 2019). Muslims also appear to be opposed to organ donation. This is due to the belief that the body should be returned to Allah in the same shape in which it was given (Gillman, 1999). Despite a lack of literature reporting the attitudes of largely Islamic countries towards the act of dissection (Mohammed and Kharoshah, 2014), it could be assumed that the same attitudes adopted towards organ donation may also apply to body donation and help to explain the reluctance of those of Islamic faith to donate.

Much like Islam, Judaism dictates that the body must be buried as soon as possible following death, and must remain whole to ensure efficient passage into the world-to-come (Notzer et al., 2006). In order to negate this barrier, medical schools located in countries such as Israel, where a substantial proportion of the population are Jewish, have put certain measures in place. For example, in order to respect the integrity of the body (Campbell, 1998), all dissected organs, and even the blood from the donor's body must be kept and are then placed with the donor before they are buried at the end of the dissection course (Slamovits, 2021).

#### **2.3.1.3 Why are religious views on body donation important to consider?**

Taking the above into account, it should be stressed that the exposure to religious practice and encounters of death can vary (Watson-Jones et al., 2017). Furthermore, it highlights that there are no clear-cut lines within religion as to what is "right" or "wrong", leaving a lot open to interpretation.

The influence of religion is important to consider, especially as medical schools worldwide accept applicants from a range of countries, all with different cultures and/or religious beliefs. Furthermore, medical graduates may go on to practice outside of the culture they have grown up or trained within. Considering this, it seems relevant to understand the views of different religions on the body following death as this is a major factor that could impact on a student's attitudes and beliefs whilst studying medicine as well as throughout future practice. There are a range of views relating to how the social environment may affect the integration of some individuals within different cultures due to their religious beliefs.

It has been argued that by immersing themselves within a particular culture, individuals may adapt their beliefs and practices in a process of socialisation with those who surround them (Albanese, 2000; Wuthnow and Hackett, 2003). However, there is also an argument that moving to a new culture and having a different religious view to much of the population within that culture can be somewhat isolating and result in difficulty integrating into the wider society (Massanari, 1998).

## **2.4 Medical student reactions to dissection**

While medical students learn the scientific and technical aspects of anatomy, their reactions to cadavers and death are topics that are not often addressed in formal anatomy courses (Leboulanger, 2011).

The psychological and physical reactions of students to entering the DR will often vary. Psychological reactions can range from mild (Evans and Fitzgibbon, 1992; Cahill and Ettarh, 2009) to more extreme (Finkelstein and Mathers, 1990) and physical symptoms tend to include nausea as well as feeling faint which is generally attributed to the 'smell' [formaldehyde] in the DR (Horne et al., 1990; Chia et al., 2020).

In addition to these potential impacts on students, research suggests that the way in which students react to their encounters with donors can shape their professional development. For example, students more likely to view the donor as a 'specimen' might focus on ways in which they can control their emotions, whereas students viewing the donor as a 'person' might prioritise the practice of emotional engagement required when working with their future patients (Goss et al., 2019).

In line with this, there is growing interest surrounding student-donor relationships that form during the dissection course. Such interest stems from suggestions that the impact of dissection on the attitudes and behaviours of medical students may persist throughout their future professional careers upon completion of medical school (Tschernig et al., 2000; Dickinson et al., 1997; Rizzolo, 2002). However, all the literature exploring this to date is speculative rather than longitudinal studies that have monitored the development of individuals throughout medical school into their professional careers.

### **2.4.1 Emotional responses to the dissection course**

There is a considerable amount of literature reporting the emotional reactions students experience on entering the DR and commencing dissection. This brief overview will focus on the initial reactions of medical students to dissection before discussing how their emotional reactions evolve over time.

#### **2.4.1.1 Initial emotional reactions**

Medical students frequently express positive emotions prior to their initial entry to the DR, including excitement, fascination, wonder and interest (Dinsmore et al., 2001; Cahill and Ettarh, 2009; Evans and Fitzgibbon, 1992; Nnodim, 1996; Snelling et al., 2003). However, the most common emotion that students are reported to experience, during the build up to and during their initial sessions in the DR, is anxiety (Arráez-Aybar et al., 2008; Snelling et al., 2003; Boeckers et al., 2010; Dinsmore et al., 2001; Nnodim, 1996; Kotzé and Mole, 2013).

In one of the earliest documented studies investigating medical student emotional reactions to dissection, Penney (1985) reported that three-quarters (n=71) of first-year medical students at Dalhousie University felt anxious before commencing dissection, particularly in relation to viewing a cadaver for the first time. This finding was further supported by Boeckers et al. (2010) who reported that prior to dissection, over half (63%, n=45) of first-year medical students at Ulm University that took part in their questionnaire study confirmed that dissection of a donor had caused them additional stress. It has been suggested that this additional stress could result from medical students' worries about whether they will be able to, or how they are going to, cope with the dissection of a donor (Bernhardt et al., 2012).

For example, the initial handling of a donor is a commonly noted concern amongst medical students (Horne et al., 1990; Qamar and Osama, 2014). Furthermore, it is thought that making the first cut can be more difficult than seeing and touching the donor for the first time (Russa and Mligiliche, 2014). Students may feel discomfort towards the act of dissection given its illegal status if conducted outside of a legally regulated situation (Lamdin et al., 2012). Furthermore, cutting a donor may cause particular concern for those who do not have previous dissection experience as they may feel they lack the skills required (Quince et al., 2011).

It has also been suggested that the reason students experience anxiety regarding the practical anatomy course could result from the overwhelming knowledge overload that medical students expect to accompany this experience (Boeckers et al., 2010). This concept was further explored by Greene and Rosen (2021), who conducted the first study of its kind to explore the potential link between academic stress regarding anatomy workload and emotional reactions towards dissection. Greene and Rosen (2021) discovered that students studying at the University of Vermont who were struggling to grasp the content of the anatomy course appeared to develop greater negative emotions associated with the dissection course.

In addition to the above suggestions, it has also been proposed that students find dissection anxiety inducing, due to 'fear of the unknown', with students uncertain or apprehensive about what to expect from the DR experience (Druce and Johnson, 1994; Arráez-Aybar et al., 2008).

Exploring students' initial reactions to working with a donor, Tschernig et al. (2000) completed a study in which medical students at the Medical School of Hannover completed a series of questionnaires. This study explored first-year medical student perceptions of their first encounter with a donor along with a seminar that they took part in immediately after this experience. With many students indicating the usefulness of such support from faculty following their first interaction with a donor, the results of this study highlighted that emotional issues medical students face on entering the dissection course should not be ignored. Instead, action should be taken to assist students through the initial phases of dissection; a recommendation also supported by other researchers in this field (Bataineh et al., 2006; Lamdin et al., 2012; Khan and Mirza, 2013).

In order to help provide support for some of the emotional reactions to dissection that students may experience it has been suggested that activities such as spending more time with donors (Greene and Rosen, 2021; Wong et al., 2021), watching donor interviews (Bohl et al., 2013), or even videos of dissection (Cahill and Ettarh, 2009) could all be beneficial. However, not everyone is in agreement and these suggestions have been disputed by Dosani and Neuberger (2016) who reported findings that suggest students feel even more anxious if attending a preparatory session during which they learn more

about body donors immediately prior to their initial interaction with a donated body in the DR.

Interestingly, in some instances, the initial reactions of some medical students to the DR have been deemed so severe that they have been likened to the symptoms of post-traumatic stress disorder (Finkelstein and Mathers, 1990; Chia et al., 2020; Hancock et al., 2004) although, there is also belief that the emotional ‘burden’ that accompanies dissection is beneficial to students, as they feel it fosters professionalism. This has led to suggestion that dissection might provide students with the opportunity to learn how to manage the emotions that might accompany their confrontation with death and dying (Arráez-Aybar et al., 2008), though there is little empirical evidence to support this claim.

#### **2.4.1.2 Emotional development during the dissection course**

Evans and Fitzgibbon (1992) have previously reported that medical students studying in the UK experience a reduction of negative emotions as the dissection course progresses. This could be a consequence of students becoming detached from donors as a coping mechanism, or even as a result of students becoming more comfortable in what were initially unfamiliar surroundings. More recently, there have been suggestions that medical students studying in Taiwan (Chiou et al., 2017) and Malaysia (Wong et al., 2021) who learn more information about donors are less likely to report negative emotions at the outset of the dissection course. However, there has been no further exploration on this matter within the UK itself.

In line with the proposed reduction in negative emotions, it has also been suggested that negative feelings expressed by students about touching, seeing, and cutting the donor diminish over time (Arráez-Aybar et al., 2008; Boeckers et al., 2010). This shift in emotions appears to coincide with an increase in positive emotions, meaning that feelings such as “interest” and “curiosity” replace those of “fear” and “anxiety” (Segal, 1988; Nnodim, 1996).

However, despite the familiarity noted above, it should be noted that students may still struggle to balance their emotions when faced with certain dissections, such as the hands, face, and genitalia (Gustavson, 1988; Snelling et al., 2003). This could be because these areas of the body are considered more personal to

an individual, therefore students might feel as though they are invading a person's privacy when working on these regions. Although the act of dissection does provide students with a 'license to intrude,' this is not a concept that many may feel adequately prepared to embrace (Sándor et al., 2015).

There is speculation that pre-disposing factors may also influence the emotional reactions of students throughout the dissection process. For example, some studies suggest that women are more likely to display greater levels of respect throughout the dissection experience than their male counterparts (Plaisant et al., 2011), a finding that has been reflected in a more recent study by Wisenden et al. (2018). A different study had previously suggested that this could be a result of males being more inclined to objectify the donors they are working with, resulting in lower levels of anxiety (Sándor et al., 2015).

Furthermore, Russa and Mligiliche (2014) reported that prior exposure to a dead body does not necessarily impact the levels of anxiety experienced by students during their first dissection sessions in the DR. However, Horne et al. (1990) had previously reported that prior exposure to a dead body was perhaps more likely to predispose students to implement coping mechanisms following their first experience in the DR. So, it could be suggested that these students were less likely to report heightened emotions of anxiety as they had found ways to deal with this emotion through their prior experiences.

Lifestyle choices have also been suggested to influence students' emotional reaction to dissection, particularly in relation to the smell (typically formaldehyde) which is generally associated with being in the DR. Interestingly, some students have reported the smell in the DR prevented them from eating meat when they were meat eaters prior to embarking on the dissection course (Qamar and Osama, 2014). Furthermore, vegetarians have been reported to find the dissection process more challenging than their meat-eating counterparts (Vijayabhaskar et al., 2005). However, the link between eating meat and reactions towards dissection tends to receive little exploration, although the rise of veganism and vegetarianism may change this in the future.

Not all studies have shown a positive improvement in student attitudes toward dissection with time. One account of the change in student emotions which appeared to result in less favourable behavioural and attitudinal changes was reported by Segal (1988). This was an observational study conducted at an

unnamed American University and reported on the author's time spent in the DR with students from their initial entry until the end of the dissection course.

A notable observation by Segal (1988) was that, although evident at the outset, student anxiety appeared to lessen as the course progressed. This was seen to be due to a reduction in the caution that students had initially exhibited through fear of cutting and damaging the cadaver, in favour of more aggressive dissection, and accompanied by a seemingly casual attitude. The result of this was students displaying some questionable behaviour that would be considered deeply disrespectful in current times and would result in severe disciplinary action were it to be witnessed.

For example, on Valentine's Day, Segal (1988) recounted that one of the male students had cut a heart out of the buttocks of the cadaver he had been dissecting at that time and given it to a female friend. There were also numerous occasions when other students took it upon themselves to carve their own initials in the cadavers (Segal, 1988).

Interestingly, this article emphasises that students were only given one opportunity to discuss their feelings about dissection and confronting a cadaver. Following this, they were expected to just 'get on with it,' therefore, it could be suggested that the behaviours these students were observed to display might have been adopted as a way of coping with the unfamiliar situation in which they found themselves. Reports of this nature highlight the importance of providing students with sufficient support throughout the dissection course in a bid to help reduce any adverse reactions and poor professional behaviour that might result from inadequate preparation prior to entering the DR (Penney, 1985; Druce and Johnson, 1994; Nnodim, 1996).

## **2.5 Coping strategies associated with the dissection course**

Coping strategies encompass a wide range of different techniques commonly adopted by students to deal with any emotional stress they encounter during dissection. Coping strategies tend to include but are not limited to: focussing on the task in hand, humour, emotional detachment/depersonalisation, rationalisation, and talking to either faculty, friends or family (Mc Garvey et al., 2001; Getachew, 2014; Russa and Mligiliche, 2014; Patera and Khamuani, 2021).

Humour is a coping strategy that has been particularly well documented (Mc Garvey et al., 2001; Arráez-Aybar et al., 2008; Kotzé and Mole, 2013; Dueñas et al., 2020). A recent study exploring both medical students and anatomy staff perceptions of the use of humour as a coping mechanism was conducted by Dueñas et al. (2020). The findings of this study indicated humour can be used as a means of coping with the morbid or surreal aspects of dissection. In addition, this study also highlighted that some individuals feel that humour is never appropriate as a means of coping and do not deem this to be professional behaviour.

More recently, interest has been developing in emotional detachment and depersonalisation as a coping strategy. Emotional detachment and depersonalisation can be considered as interlinked, with a student's efforts to emotionally detach from the person they are dissecting potentially resulting in them objectifying the donor, thus depersonalising them (Tseng and Lin, 2016; Patera and Khamuani, 2021). Given suggestions that coping strategies have the potential to shape how students later approach patients (Hafferty and Franks, 1994), I was particularly interested to explore the concept of detachment/depersonalisation and how this might manifest and present itself in students.

### **2.5.1 Detachment and depersonalisation of body donors**

Medical students have openly admitted how quickly they find ways to adapt to dissection which frequently result in them implementing the coping strategy of detachment. This can result in students forgetting they are working with a once living human being (Wear, 1989; Dickinson et al., 1997; Plaisant et al., 2011) as they are more likely to be of the mindset that the donor is an inanimate object (Evans and Fitzgibbon, 1992; Lempp, 2005).

#### **2.5.1.1 Detachment and detached concern**

In attempts to explore the phenomenon of detachment, some studies have suggested that students may feel the need to emotionally detach from donors to help them deal with the unfamiliar situation they find themselves placed in during dissection (Smith and Kleinman, 1989; Charlton et al., 1994; Bohl et al., 2013). This attitude is not unique to the anatomy course and was first

suggested by Lief and Fox (1963) to result from a phenomenon referred to as “*detached concern*”.

The development of detached concern has been reported to be encouraged by anatomists (Jones et al., 2014; Tseng and Lin, 2016), though it is also a belief that some medical students already possess this characteristic (Goss et al., 2019). Detached concern refers to students developing a coping mechanism throughout the dissection course, whereby they ‘care’ but ensure they do not ‘get too close’ to donors (Dickinson et al., 1997). More recently Hildebrandt (2016, p.43) defined this as “*the appropriate balance between clinical detachment and concern*”. It is thought to be a skill that allows physicians to be empathetic towards patients, whilst concurrently maintain objectivity, thus protecting their own mental state (Coulehan et al., 1995; Hildebrandt, 2010).

#### **2.5.1.2 Depersonalisation of body donors**

It could be suggested that some students may struggle to find an appropriate balance between detachment and concern, resulting in greater levels of detachment than concern. This, in turn, could result in students being more inclined to depersonalise (or dehumanise) donors (Gustavson, 1988; Druce and Johnson, 1994). On more than one occasion, it has been suggested that students adopting this stance might treat future patients like objects as opposed to human beings in need of medical care (Dickinson et al., 1997; Tseng and Lin, 2016).

Furthermore, there is also concern that when students depersonalise donors in this way, they ignore the debt of gratitude they owe them, with concerns that this could lead to students displaying disrespectful behaviours towards donors. Despite such concerns, concrete examples of what might constitute disrespectful behaviour are lacking from the literature (Dickinson et al., 1997; Zhang et al., 2008; Sándor et al., 2015).

However, this suggestion has recently been refuted by Flack and Nicholson (2018) who presented the results of a questionnaire study conducted at the Otago Medical School. The findings of this study suggested that students reported being able to adopt an appropriate level of detachment to be able to focus on the task of dissection, but also retain their ability to empathise with,

and show respect towards, donors. However, the way in which students displayed these attributes was not explored in detail.

As the research findings in this area come to different conclusions the need to explore this phenomenon further, using methods that allow us to explore and begin to understand how medical students' manifest detachment and depersonalisation and the impact this might have on their attitudes and behaviours, comes into focus.

The way in which depersonalisation of donors may impact medical students' behaviours and attitudes in the DR has not been widely explored. However, some ways in which it is thought to be displayed is through inappropriate actions (though the literature does not state what is meant by this), as well as humour.

A study reported by Lempp, (2005, p.322) suggested one way in which depersonalisation of donors could be displayed is through the language students choose to adopt when referring to body donors. For example, when reflecting on their time dissecting, a fifth-year student from the Medical School at Kings College, London, commented:

*"Because you've never seen one before [a dead person]; you don't know how to act towards it, but yet, you know you're just using it like a piece of meat ..."*

This is interesting when comparing it to a comment made by a first-year student at the same medical school:

*"I think you just have to; you have to treat it [the cadaver] with respect; you have to ... I think the main thing is that you do feel, actually, a great deal of gratitude to that person and their family for letting you do that"*

Although this is only one example, it does appear to demonstrate that at some point between the first and fifth year of medical school, student perceptions of body donors as people have shifted. They are no longer talking about the donor as though they are a person with a family, but instead referring to them as "a piece of meat". This is one of the few studies that compares the way in which students at the beginning and at the end of medical school refer to donors. A study by Evans and Fitzgibbon (1992) reported that students may detach from donors as soon as just six weeks in to the dissection course. It would be

interesting to explore whether the student language when referring to donors also changed as quickly, or whether this happened further on in the medical degree.

In addition to the choice of language implemented by students, the physical appearance of donors in the DR is also thought to contribute to students' ability to depersonalise donors (Goss et al., 2019). This has been suggested as formalin embalmed donors, which are commonplace in most medical schools as opposed to 'fresh' unembalmed bodies, do not tend to exhibit the characteristics of a living individual, with differences in both colour (i.e. paler than a 'fresh' body) and texture (i.e. much firmer than a 'fresh' body) to be particularly notable (Hubbell et al., 2002; Jaung et al., 2011). Furthermore, the visual appearance of the donor resembling less of a whole person and instead being seen as multiple separate body parts as the dissection course progresses, has also been reported to lead students to depersonalise donors (Goss et al., 2019).

With the above in mind, there is increasing attention to the ways in which detachment and depersonalisation might be prevented from manifesting in such extreme ways. One of these approaches is to personalise donors to students, with multiple suggestions regarding the different ways in which this might be achieved.

## **2.6 Personalising body donors to medical students**

Multiple literature searches (an example of which is provided in Appendix 1), revealed that studies exploring how medical students feel about the prospect of learning more about body donors are extremely rare (Crow et al., 2012; Bohl et al., 2013; Talarico, 2013; Williams et al., 2014; Dosani and Neuberger, 2016; Hasselblatt et al., 2018; Iaconisi et al., 2019).

Some of the more 'traditional' ways in which students have been encouraged to personalise donors are through memorial services suggesting that students view donors as either their first patient or a teacher. Recently, however, it is becoming increasingly common for students to be prompted to appreciate the humanity of body donors, for example, through the provision of information about their lived experience. This information can be shared with students either prior to, or during their time in, the DR (Štrkalj, 2014).

### 2.6.1 The Memorial Service

An annual memorial service (also sometimes referred to as thanksgiving service or remembrance ceremonies, amongst others) is held by many institutions across the world (Pawlina et al., 2011; Jones et al., 2014), including at the University of Leeds (Appendix 2). During these services, students are encouraged to reflect on their time in the DR working with body donors and their experience (Weeks et al., 1995; Evans and Fossey, 2011). The outcome of this experience is students frequently report having developed a deeper level of appreciation for the opportunity they have been given to learn anatomy in this way. Furthermore, this type of service is also thought to prompt students to remember that donors were once living people and are not simply a learning tool (Jones et al., 2014; Greene et al., 2018; da Rocha et al., 2020).

Alternatively, in the Netherlands, up until 2011 monuments were put in place to signify thanks to donors and it was only recently (2011), that the first memorial service at a Dutch university, much like those that take place in the UK and USA, was recorded at the University Medical Center Utrecht. One of the driving forces behind implementing this type of service was the realisation that this could be a way of also giving thanks to the donors' relatives and not just the donors themselves (Bolt et al., 2012). The benefit of a memorial service for donor families has been reported in the USA when data collected from memorial services taking place between 2011 and 2015 revealed that attending this event enabled donor families to begin to understand the importance of their loved one's donation, as well as helping them to find closure for their loss (Greene et al., 2018).

Much of the literature regarding memorial services and the impact they might have on donor families, as well as medical students, appears to stem from the Americas (Greene et al., 2018; Jones et al., 2014; da Rocha et al., 2020). However, it is important to note that these services also take place in Asia, where this type of event has been in place for much longer. For example, in Japan, memorial ceremonies were held as long ago as the 17<sup>th</sup> century and were for those who had been executed before being dissected (Pawlina et al., 2011). The tradition of memorial services can also be witnessed in present day Thailand, Taiwan, and Sri Lanka (Winkelmann and Güldner, 2004; Lin et al., 2009).

## 2.6.2 Donor as patient and donor as teacher

Another approach suggested to emphasise the personhood of body donors is encouraging students to adopt either the 'donor as patient' (Coulehan et al., 1995; Weeks et al., 1995; Ferguson et al., 2008), or the 'donor as teacher' viewpoint (Winkelmann and Güldner, 2004; Lin et al., 2009; Bohl et al., 2011; Souza et al., 2020).

Some researchers believe that the 'donor as patient' model is equivalent to the doctor-patient relationships students will form in their later careers (Weeks et al., 1995). After analysing student personal reflections (n=~200) on their time in dissection, Coulehan et al. (1995) suggested that students studying at Stony Brook Medical School based in New York who perceived donors to be their patient were likely to view the donor they were dissecting as a real person. In turn, this was suggested to have prompted students to adopt the mind-set of the patient-as-person in their later careers.

However, it appears that not all medical students are happy to adopt this stance. In a study at the University of Michigan, Bohl et al. (2011) reported the findings of a Likert scale survey completed by second, third and fourth years (n=128) which indicated that students felt the 'donor as teacher' paradigm was more appropriate to the situation that they find themselves placed in throughout dissection. It also transpired those students felt it would be more beneficial for their future careers to regard the donor as a teacher, rather than as a patient. This view appeared to stem from student suggestions that the donor as teacher paradigm might help to maintain high levels of respect to be shown towards donors, as well as effectively facilitating the emotional development of students, including the ability to show empathy towards future patients. When given the option to leave free-text responses at the end of the survey, some students made interesting comments referring to how patients will come to them in the hope of being "*cured*", not to "*offer themselves as a gift to learn from*" (Bohl et al., 2011, p.211). It was therefore suggested that perhaps viewing the donor as a patient could result in internal conflict due to a disconnect between the act of dissection and the act of treating a patient.

The donor as teacher paradigm is also favoured in Taiwanese Medical Schools, predominantly due to the high levels of respect accorded to teachers within this culture (Winkelmann. and Güldner, 2004; Lin et al., 2009). Additionally, students

studying in Taiwan generally refer to donors as “*ajarn yai*” (great teacher), and never as “*sop*” (cadaver) (Lin et al., 2009; Ghosh, 2017). Also, upon entering each dissection class, students are expected to greet donors by bowing to them at the beginning of every dissection session, as well as praying for their donors; actions which are perceived to show utmost respect for donors and the gift they have given (Winkelmann and Güldner, 2004; Prakash et al., 2007). Despite the favoured paradigm of donor as teacher in Taiwan, there are currently no reports that provide evidence as to how this approach might impact student attitudes and behaviours.

However, much like Bohl et al. (2011), another group of researchers have also recently investigated the impact of students viewing donors as teachers. In the paper published by Souza et al. (2020), details are provided as to how students studying at Kasturba Medical College, Manipal, India, reacted to a module entitled “*Cadaver as a First Teacher*”. Students attended sessions as part of this module in the build-up to dissection classes commencing with lectures covering topics ranging from the importance of cadavers in anatomy as well as the ethical values relating to human dissection and voluntary body donation. Students also participated in assignments (reflections) and a poster-making competition whilst studying this module. Once the module was complete, students were asked to fill out a survey to self-assess the impact of the programme. Upon analysis of the responses, it was determined that students believed the module highlighted the importance of handling donors with respect as well as sensitising them to the emotional demands of their future professional careers (Souza et al., 2020).

### **2.6.3 Provision of personal donor information to students**

Recently, efforts to promote the development of humanistic behaviours in the DR have seen a shift towards the personalisation of body donors. This involves students learning more about the lives of body donors; either specifically the donor they are dissecting (Lin et al., 2009; Crow et al., 2012; Talarico, 2013; Kaye et al., 2019), or information about donors in general (Dosani and Neuberger, 2016; Iaconisi et al., 2019).

#### **2.6.3.1 Body donor anonymity**

It is common for individuals who have donated their bodies to Western medical schools for anatomical examination (dissection) purposes to remain anonymous (Bohl et al., 2013), i.e., the giver (body donor) and receiver (medical student) are completely unknown to each other. The donor essentially has any remnant of their personal identity stripped away (Bolt et al., 2012; Bohl et al., 2013). Accordingly, following their arrival at a medical school, a donor is often referred to as a number instead of students learning the donor's name (Bolt et al., 2012). This practice is also in place at the University of Leeds, as well as all personal items being removed from the donors and their hair being shaved, creating an additional layer of anonymisation which results in most donors looking very similar to one another.

Although laws and legislations do not tend to include guidance as to whether bodies for anatomy should be anonymised or personalised, one suggestion for the basis of donor anonymity appears to stem from the historical use of unclaimed bodies about whom little was typically known (Jones and King, 2017). Whilst bodies for dissection may still be acquired this way in some countries worldwide, this is not true for countries such as the UK, Australia, the USA, China, Taiwan and Thailand, where body donation is the only source of bodies for anatomical examination (Habicht et al., 2018).

Despite body donor programmes providing a source of donor information that is readily available, donor information is *still* not routinely provided to students (Richardson and Hurwitz, 1995; Bolt et al., 2010; Collins et al., 2018). Interestingly, the literature appears to give very little consideration to the reasons as to why anonymity of body donors still prevails.

However, there is speculation amongst researchers including anatomy and medical educators, that perhaps the practice of donor anonymisation needs to change, particularly due to the proposed negative impact this might have on student-donor interactions, as well as future doctor-patient relationships (Khan and Mirza, 2013). One proponent of the potential personalisation of donors, Zhang et al. (2008, p.56) highlighted:

*“A donor represents not only a scientific model of human anatomy, but a person that lived and deserves proper dignity and respect”.*

A comment like this implies that the dissection experience can provide a valuable opportunity for students to learn and develop an appreciation for human dignity, as well as gain respect for the human body (Lempp, 2005; Pearson and Hoagland, 2010; Akinola, 2011; Noel et al., 2020).

Therefore, aside from anatomical knowledge, the dissection course is thought to provide students with the opportunity to develop an initial sense of professionalism, which will prove essential when forging future doctor-patient relationships (Lempp, H.K., 2005; Escobar-Poni and Poni, 2006; Böckers, A. et al., 2010; Tseng and Lin, 2016; McDaniel et al., 2021). Due to this proposed impact on a medical student's behaviour and attitude in their later careers, there is growing interest in student-donor interactions that might foster such attributes (Dickinson et al., 1997; Rizzolo, 2002; Hildebrandt, 2014; Tseng and Lin, 2016).

#### **2.6.3.2 Do students want to learn more personal donor information?**

Although it is apparent that there is a distinct lack of research focussing on how students, as well as donors, might feel about the prospect of donors losing their anonymity, studies exploring this phenomenon are gaining popularity (Bohl et al., 2013; Hasselblatt et al., 2018).

One of the earliest studies that suggested how students might like to personalise donors was described by Bohl et al. (2011). Although this was not the primary focus of the study at the time, one question that formed part of the study survey asked, "*Do you wish that it had been possible for you to develop a more personal relationship with your body (i.e. by knowing about their life history, not just their cause of death)?*" Of the 128 students participating in that study, 97 (76%) responded in the affirmative to this question. In order to investigate this further, Bohl and colleagues developed an additional study which they reported in 2013. Again, medical students studying at the University of Michigan, who had completed the dissection course, were asked to complete a short survey which was designed to assess how students felt in relation to learning more about donors through the screening of donor interviews. Bohl et al. (2013) reported that of the 224 students that responded to the survey, 166 (74%) said they would watch a video interview of their donor if it were available. However, although students indicated that they would have found this experience useful, this was a quantitative study and there were no details about

the nature of the usefulness of the video. Interestingly, 158 (69%) of the students suggested that viewing the video should not be mandatory, even though students did not seem to think that viewing such video would have caused them to become distressed. Free text comments at the end of the survey showed that students thought that screening donor interviews could increase levels of respect and empathy amongst students. The findings of this study led Bohl et al. (2013) to suggest that students who did not wish to watch a video of their donor might prefer to watch an interview of a different donor. This way it was felt that students would still benefit from the potential advantages that had been anticipated by students in this study.

Additional evidence for this idea was presented by Williams et al. (2014) who reported that although not all students felt comfortable with the concept of learning the birth name of the donor they were dissecting, they were still open to learning the names of other donors, whom they had not dissected, in the DR. Williams et al. (2014) interpreted these findings as students acknowledging the need to recognise the humanity of donors, but still feeling the need to distance themselves from the reality of a donor's life.

In a more recent study investigating student opinions towards learning more about donors Hasselblatt et al. (2018) reported survey findings collected from students studying medicine at the University of Ulm in Germany. Similar to the study conducted by Bohl et al. (2013), regarding the screening of donor interviews, Hasselblatt et al. (2018) asked students to complete a survey upon completion of the dissection course. On analysis of survey responses, it was determined that 167 (69%) of the 242 student respondents across the institutions were interested to learn more information about body donors. Some of the more frequently sought-after information included donor medical history and their motivations for donating. Interestingly, Hasselblatt et al. (2018) discovered that students felt such information should be provided to students either prior to, or soon after commencing, the dissection course, but were largely opposed to the information being provided in the form of: a donor letter, meeting with donor families, or via watching donor interviews. However, as this was a quantitative study, students were unable to provide alternative suggestions as to how this information might best be conveyed.

Hasselblatt et al. (2018) also wanted to learn how anatomy departments might feel with regard to personalising body donors to students. Anatomy departments in Germany, Switzerland and Austria were sent a survey regarding this topic, with 32 of the 44 institutions invited to participate responding. In complete contrast to the responses obtained from students, it became apparent that the majority (n=28) of anatomy departments felt that students learning personal details about donors would not be beneficial for their learning. They were also concerned about the potential for increased psychological stress. Despite this apparent resistance, approximately half of the departments that took part were able to appreciate the impact of personalising donors on encouraging empathy towards those individuals. When considering the input from both students and anatomy departments, Hasselblatt et al. (2018) argued that perhaps students should be provided with whatever information about body donors they might like to learn. However, this would rely heavily on the cooperation of body donors.

#### **2.6.3.3 Are body donors willing to provide personal information for medical students?**

Whilst there is a wealth of literature detailing information about the type of individuals who donate their body for anatomical examination, there appears to be little investigation into whether donors would be willing to provide information about themselves for medical students (Fennell and Jones, 1992; Richardson and Hurwitz, 1995; McClea and Stringer, 2010; Cornwall et al., 2012).

Although there are examples of body donors, as well as their families, willingly surrendering their status of complete anonymity (Lin et al., 2009; Crow et al., 2012; Talarico, 2013; Santibañez et al., 2016), there is no example, at present, of such practice in the UK. In fact, the only report detailing information about the type of people who donate their body to anatomical examination in the UK was first published some 25 years ago (Richardson and Hurwitz, 1995). This report was conducted in London and its aim was to determine the profile at the time of body donors. However, this did not include providing medical students with this information.

#### **2.6.3.4 Studies reporting on the provision of body donor information to medical students**

Reports of this type range from investigations exploring how students feel about the prospect of learning more about body donors (Bohl et al., 2013; Williams et al., 2014) to how students react after being provided with donor information (Kostas et al., 2007; Crow et al., 2012; Dosani and Neuberger, 2016; Santibañez et al., 2016; Iaconisi et al., 2019; Kaye et al., 2019). Other aspects of the literature simply provide a description on the current practice of providing medical students with donor information (Lin et al., 2009; Talarico, 2013), including speculative suggestions as to how this might impact students.

One of the earliest reports to suggest that medical students should learn more about donors was provided by Weeks et al. (1995), who proposed that students should be provided with a donor's name, age, and medical history. It was suggested that providing this information would personalise the donor to students. However, it could be argued that if this was the only information provided, then it would be limited to a predominantly medical perspective as opposed to enabling students to learn more about the donor as a person. In attempts to counter this, various approaches to the provision of donor information have emerged and amongst the more popular of these are either students meeting with a donor's family (Lin et al., 2009; Crow et al., 2012; Talarico, 2013; Santibañez et al., 2016) or the screening of short films which show interviews with donors (Kostas et al., 2007; Dosani and Neuberger, 2016; Iaconisi et al., 2019).

#### **2.6.3.4.1 Medical students meeting with body donor families**

Although students usually have the opportunity to meet with donor families at memorial services held towards the end of the dissection course (Jones et al., 2014; Greene et al., 2018), the opportunity to meet with donor families prior to the dissection course commencing appears less common. One of the earliest pieces of literature that describes how medical students meet with donor families was provided by Lin et al. (2009). This report describes a Silent Mentor Programme, which was first initiated in 1994 and still runs in the present day (Santibañez et al., 2016). The article provides an insight as to how the students studying at the Tzu Chi College of Medicine in Taiwan meet with donor families. These meetings occur prior to the arrival of the donor at the College of Medicine. Students visit the donor's family, look at photographs and hear stories about the donor during their life. Following this experience, students are asked

to write their own biography of the donor which is then placed with the donor in the DR. The purpose of this is to serve as a constant reminder for the altruism that the individual displayed in donating their body; a “*silent mentor*” and role model for students to look up to (Lin et al., 2009; Santibañez et al., 2016).

Upon the donor's arrival at the College of Medicine students are reunited with donor family members and together they show their gratitude for the gift the donor has given, by praying together around the donor in the DR (Lin et al., 2009). This experience also provides students with the opportunity to comfort donor families through an emotionally challenging time, which is suggested to encourage a more compassionate persona in preparation for students' future careers (Santibañez et al., 2016). Students begin each dissection class by bowing to the donor they are dissecting (Lin et al., 2009) and, ultimately, the course concludes with the unique act of students stitching the donor back together before taking on roles as coffin bearers in a memorial service during which the donors are cremated (Douglas-Jones, 2017). Multiple reports describe how the Silent Mentor Programme is implemented in Taiwan (Lin et al., 2009; Santibañez et al., 2016; Douglas-Jones, 2017) and what it hopes to achieve by promoting the humanity of donors. However, as of yet, there is no published literature providing evidence as to how the dissection experience actually impacts students studying at the Tzu Chi College of Medicine.

Due to the proposed benefits of approaching donors as “*Silent Mentors*,” other institutions have attempted to replicate this programme. One example of this has been reported by the University of Malaya's Minimally Invasive Laparo-Endoscopic Surgery Skill Centre, who collaborated with the Tzu Chi College of Medicine in order to ensure the programme was implemented successfully (Santibañez et al., 2016). The motivation for this collaboration was to determine how the silent mentor programme impacted medical students studying in Malaysia and it was implemented in the exact same manner as at the Tzu Chi College of Medicine.

Following completion of the programme, Santibañez et al. (2016) invited students to provide feedback in the form of free-text comments and written reflections. Upon analysis of 229 student responses, the main themes could be established. This revealed that 141 (62%) of respondents believed the experience had been transformative and provided them with the opportunity to

learn skills that could not have been taught via a textbook or lecture. Such skills included: fostering an appreciation for humanity, as well as developing the emotions required to be a compassionate and caring physician.

Arranging for donor families and medical students to meet prior to the dissection course commencing also occurs in the United States of America (USA) (Vannatta and Crow, 2007; Crow et al., 2012; Talarico, 2013), the first report of which came from the University of Oklahoma (Vannatta and Crow, 2007; Crow et al., 2012). The well cited practice at this institution is known as a 'Donor Luncheon' and was established in 2007 (Crow et al., 2012). As part of the annual event students meet with donor families prior to the dissection course, allowing them to learn more about the individual whom they will ultimately dissect. It was hoped that by meeting donors' families, students might be more likely to recognise the humanity of body donors. This in turn has been suggested to positively impact student behaviours and attitudes in the DR (Weeks et al., 1995; Lin et al., 2009).

In order to assess whether such claims were justified, Crow et al. (2012) designed a study to compare the attitudes and behaviours between medical students who had attended the Donor Luncheon and students who had not. This quantitative study involved the development and distribution of a questionnaire designed to determine whether the Donor Luncheon has any impact on students. The questionnaire was distributed amongst all students attending dissection classes at three different time points: two weeks into the course, six weeks into the course and upon completion of the dissection component. Upon analysis of the results, it was determined that students who had met with donor families prior to the dissection course were more inclined to consider the donor to be a person than those individuals who were not given the opportunity to meet with a donor family.

Reflecting on their findings, Crow et al. (2012) proposed that learning more about donors and their life had increased appreciation for the donor as a person, something previously suggested by Weeks et al. (1995). This was, in turn, believed to make students more likely to treat donors with empathy, respect and compassion in the DR. However, the results gathered from the medical students at the University of Oklahoma also suggested that the positive effects initially observed on student attitudes in terms of the donor as a person

declined over time – regardless of whether the student had attended the Donor Luncheon or not. In light of this, Crow et al. (2012) suggested that opportunities of this nature must be provided throughout the dissection course, rather than only at the beginning, to encourage students to reflect on the dissection experience and working with donors in the DR.

Also in the USA, students studying at the Indiana University School of Medicine-Northwest take part in multiple activities in the build-up to dissection classes commencing, including meeting with donors' families (Talarico, 2013). Students first meet with the donor's family prior to the donor arriving at the university, and then again on the day that the donor is transported to the university, where students assume complete responsibility for the care of their donor. Students begin by conducting an examination of the donor in the DR and combine any findings with information they may have been told by the family members. Talarico (2013) proposed that this stimulates students to consider the donor as a patient, discuss ethical topics such as death and dying, and provides an initiation to critical concepts for medical professionals such as respect and human dignity. However, unlike Crow et al. (2012), Talarico (2013) did not provide any evidence to support their claims and based their suggestions on a handful of student reflections, although it is not clear how these reflections were collected and whether these formed part of a structured study.

#### **2.6.3.4.2 The screening of body donor films for medical students**

There are reports of short films being shown to medical students in the build-up to dissection commencing. These films can include, but are not limited to, interviews with body donors, donor families, past medical students and even members of faculty (Kostas et al., 2007; Talarico, 2013; Dosani and Neuberger, 2016). Whilst such videos have existed for a number of years (*Still Life: The Humanity in Anatomy*, 2001; *Donated to Science*, 2009), research investigating their impact on medical students is rare.

One of the first accounts of the screening of a film of this kind was a report by Kostas et al. (2007), who gave details of this taking place at the Mayo Clinic College of Medicine, Minnesota, USA. The 10-minute video entitled "*The Gift of Knowledge: Teaching the Physicians of Tomorrow Through the Mayo Clinic Anatomical Bequest Program*" was shown to first year students ahead of their second practical anatomy class. The film consisted of an interview between a

future donor (whose parents had both previously donated to the programme) with the Chief of the Department of Anatomy. The future donor spoke about their parents' lives, including their reasons for donating. After the second anatomy class was complete, students were asked to fill out and return a questionnaire about their experience. Following analysis of the student responses, Kostas et al. (2007) determined that watching the video had enhanced student understanding of the importance of showing high levels of respect and recognising the humanity of donors in relation to anatomy classes. However, there was no control group in this study to allow for comparison.

A more rigorous study was designed by Dosani and Neuberger (2016) to investigate the impact of a short film about donors on medical students. Students studying at the University of Central Florida College of Medicine were shown a 15-minute summary of the longer 44-minute film entitled "*Anatomy and Humanity*" first produced in Galveston, Texas by Cole and ttweak (2001) immediately prior to their first dissection class. The shortened version of the film screened by Dosani and Neuberger (2016) included interviews with past donors as well as advice about the dissection experience given during interviews with students more advanced in the medical degree. It was hoped that, by being exposed to this film, first-year students may begin to appreciate the humanity of body donors and that this appreciation would be reflected in their attitudes and behaviours in the DR. In order to assess the impact of the film students were asked to complete a questionnaire at two different time points – before and after the first laboratory experience. The questionnaire used for the purpose of this study was previously designed and implemented by Crow et al. (2012), however, Dosani and Neuberger (2016) added three qualitative questions.

It had previously been indicated by students that watching a film of this type could support students in dealing with emotional difficulties they might face surrounding the dissection experience. For example, in an 11-point Likert scale survey, Kostas et al. (2007) reported that students studying at the Mayo Clinic College of Medicine agreed with the statement they would "*feel better equipped to handle my professional role as a medical student in the anatomy lab*" upon receiving donor information. However, in a more recent study reporting the impact on the screening of such a film, Dosani and Neuberger (2016) discovered that this had instead made some medical students studying at the

University of Central Florida feel more anxious prior to commencing dissection. This was determined by comparing the responses to a questionnaire both before and after the first anatomy class, as students reported greater levels of anxiety and apprehension towards cutting the donor after the first class which has been preceded by the screening of the film. Dosani and Neuberger (2016) suggested that this response may have been due to the practice at the University of Central Florida whereby on their first day of anatomy class students enter the DR and simply look at the body but do not engage in the act of dissection. Moreover, it was proposed that hearing students in the film express how they found some dissections to be particularly gruesome could also have heightened these emotions in the first-year students.

Another finding of this study was that students appeared to become less inclined to consider the donor as a once living human on entry to the DR than they had prior to watching the film. When discussing their findings, Dosani and Neuberger (2016) suggested that as the film had prompted students to remember that donors are real people, it was to be expected that some individuals may report feeling more emotional and therefore more likely to employ coping strategies, such as detachment, after watching the film. However, this viewpoint did not apply to all students, with others commenting that they felt the film had helped to humanise donors and had increased their appreciation towards donors. Additionally, students generally indicated they were interested in the content of the film, found the content to be important, and were in favour of all medical students watching the film prior to commencing dissection. Furthermore, students reported a particular benefit from hearing donor motivations, which in turn appeared to increase student appreciation towards donors. Finally, Dosani and Neuberger (2016) reported that students appeared to perceive themselves to have a higher level of responsibility towards donors whilst conducting dissection after having watched the film.

More recently, a study has been conducted at Ulm University in Germany which investigated student reactions to watching a film on body donors. The study was designed and conducted by Iaconisi et al. (2019) and, unlike the studies discussed so far in this literature review, it utilised standardised, validated psychological measurement tools to assess the impact of an educational film about donors on medical student empathy and psychological stress. This study

involved the production of a 26-minute film entitled "*Mortui vivos docent*" ("*The dead teach the living*") which consisted of interviews with body donors and students, separately. Donor interviews enabled them to share their motivations for donating as well as communicate any message they would like students to hear. Student interviews consisted of reflection on the dissection experience, including the information students would have liked to have learned about body donors.

Students dissect in their second year at Ulm University and as part of the study students were divided in to three different subgroups. The first group watched the film after an introductory session in the DR (where no dissection takes place), the second group watched the film ten days into the dissection course and the third group acted as a control group who were able to watch the film at the conclusion of the dissection course. Upon analysis of the responses to the questionnaires, Iaconisi et al. (2019) was able to confirm that regardless of the time point at which students watched the film, there was no effect on student empathy, nor did it generate unnecessary levels of psychological distress amongst students. They suggested that the low levels of distress may have been due to the donors in the video being different to the donors the students were due to dissect, a proposal which was also previously put forward by Bohl et al. (2013). However, this finding challenges the findings of Dosani and Neuberger (2016) who found students were more anxious following the screening of such films.

Analysis of some of the qualitative questions asked as part of the study by Iaconisi et al. (2019) established that students would like to learn more about donors during the film and hear less from the student's perspective. As a result of their findings, Iaconisi and colleagues concluded that this film was useful in helping students to humanise donors without needing to remove the anonymity between themselves and the donor they would ultimately dissect.

#### **2.6.3.4.3 Alternative approaches to providing medical students with body donor information**

In further attempts to encourage students to acknowledge the humanity of donors some authors have investigated student attitudes towards donors, whilst undergoing supplementary curriculums alongside dissection classes. Stephens et al. (2019) implemented a medical ethics curriculum at the Monash University,

and Goss et al. (2019) trialled a professionalism curriculum at the University of Pennsylvania Perelman School of Medicine. Donors remained anonymous in both instances and the authors reported that despite these interventions, student attitudes towards donors remained varied, ranging from viewing these individuals as 'people' to 'objects'. This prompted Goss et al. (2019) to suggest that the professionalism curriculum alone was not sufficient in altering student perceptions of donors. However, Stephens et al. (2019) did highlight that some students were able to acknowledge and reflect upon their attitudes as a result of their learning from the supplementary curriculum.

Interestingly, there has also been a report of students at the University of Colorado School of Medicine being provided with letters written to them by the donor they would be dissecting (Kaye et al., 2019). Inclusion of discussions surrounding death and dying with students has also been proposed to reduce the likelihood of students becoming detached from, and depersonalising, donors (Marks et al., 1997). Others have also attempted to concurrently teach students how to handle their emotions and build increased levels of respect towards donors (Netterstrøm and Kayser, 2008; Flack and Nicholson, 2018).

It has become evident that current literature exploring the phenomenon of personalising body donors, although starting to expand, is unusual.

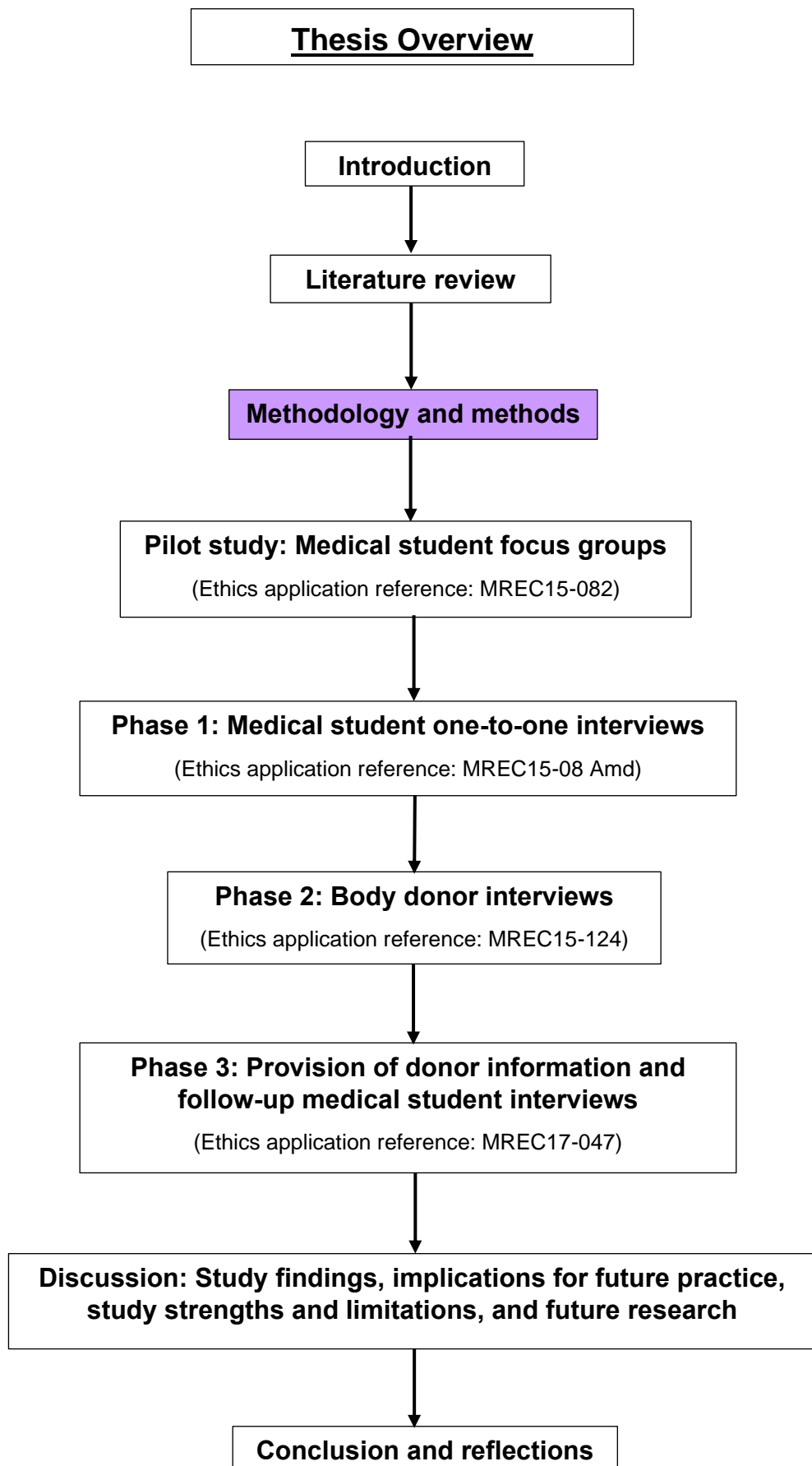
Furthermore, the limited literature available that *does* report on the impact of student reactions to the provision of donor information is somewhat lacking. The literature may report the impact on students, but not *why* students have reacted in this way. Studies of this nature are also typically limited to a single cohort of students, at a singular point in the medical degree, limiting the scope of the research and obtaining only a narrow viewpoint of individuals with a certain level of experience and exposure to the DR. Aside from the students' views on this phenomenon, it is also currently unknown whether donors in the UK are open to removing their anonymity.

## **2.7 Research questions**

In this research I set out to explore the phenomenon of medical students learning more about body donors and investigate how, if at all, this information might impact students.

Following the literature review, three main research questions were developed:

- 1) How do medical students at different stages of the dissection course feel in relation to learning more about body donors?
- 2) What personal information are body donors willing to provide about themselves to be passed on to medical students?
- 3) How does receiving more information about body donors affect medical students with different levels of dissection experience?



## Chapter 3 **Methodology and methods**

This chapter introduces the methodological approach and techniques I used for data collection and analysis in this study. This includes the rationale for adopting a qualitative line of enquiry along with my experiences of transitioning to working within a qualitative paradigm. Following this, I describe my study participants and methods of recruitment before outlining what I considered to be the most appropriate mode of data collection and analysis given the research questions my study addressed. This chapter concludes with details regarding the specific ethical challenges that I felt needed to be considered whilst constructing and conducting this study and the steps I took to deal with them.

Prior to reading this chapter, it is important to understand that this research was composed of three distinct phases:

- Phase 1: Develop an understanding of how medical students feel about:
  - A. Working with body donors in the DR, and;
  - B. The potential of learning more about body donors who are currently completely anonymous.
- Phase 2: Determine whether body donors are willing to provide information about themselves and, if so, consider what information would be useful to provide to students and in what format.
- Phase 3: Provide medical students with the information gathered about body donors prior to, and following, experience of dissection. Develop an understanding of how this information has impacted students.

### **3.1 Stepping into qualitative research as a novice researcher**

Prior to studying for this PhD, which was a pre-determined project within a qualitative paradigm, I only had experience of research located within a positivist paradigm with data gathered through quantitative approaches in keeping with my scientific background and training. Undertaking research within a constructivist-interpretivist paradigm with data gathered through qualitative approaches was entirely new to me. I had not encountered terms such as paradigms or qualitative research methods. I was not aware how involved the

role of a qualitative researcher was regarding data collection and analysis, and what it would mean to allow myself to become fully immersed in the data I had collected.

At first this left me feeling uncomfortable due to my previous experiences of research all being based within what I came to understand had been a quantitative positivist paradigm. I only had experience of working towards a definitive 'answer' to research questions; addressing hypotheses set out prior to the study commencing. In addition, at the time of conducting this study I was working as an anatomy demonstrator in the anatomy division where, despite offering a doctoral project which required a methodological approach within a constructivist-interpretivist paradigm, a positivist mindset and research training was both dominant and taken for granted. The wider Institute of Medical Education worked across several research paradigms, including those on the qualitative and interpretivist side of the continuum. However, these were unfamiliar approaches within the Anatomy Division, which had only recently moved from the Faculty of Biological Sciences to the School of Medicine when I began my research.

On reflection, this has led to some challenges throughout my research journey. Reading an article by Braun and Clarke (2019), in which they discuss the sense of privilege they felt on entering the qualitative research world under the guidance of supervisors who were experts in this field highlighted how very different my experience had been, they stated:

*“At the time, we didn’t realise quite how lucky we were to have had supervisors and other academic role models who thought and cared deeply not only about the pragmatics of doing good qualitative research, but about the reflexive, conceptual bases for knowledge generation processes and practices” (Braun and Clarke, 2019, p.591)*

At this stage, I should reiterate that as an anatomy demonstrator studentship project, the project was advertised with the topic and qualitative approach to be taken predetermined. As I started to learn more about the nature and value of qualitative research, I began to understand the reasoning behind this decision. However, there were tensions within the supervision team that came, in part, from working with a lead supervisor who had minimal experience of constructivist-interpretivist research methodology and methods. I found this to

be a challenge, especially as a novice researcher not only learning how to manage the conflict between my supervisor's worldviews and beliefs in comparison to my own, but also being faced with navigating the mass of literature on qualitative research on my own, which felt overwhelming and unmanageable at times. Although I understood that doctoral research required me to make and justify decisions about research design, I did not at the time realise quite the extent of the learning process I was engaged in.

My second supervisor was more familiar with constructivist-interpretivist approaches and, with hindsight, I should have been more open and shared my uncertainties and dilemmas about these fundamental aspects of the research project. My interest in, and learning about, the constructivist-interpretivist paradigm and qualitative approaches continued following completion of the work presented in this thesis. This means that I am now able to reflect on some of the decisions I made, particularly in relation to data analysis, and can see how my misunderstandings of the literature may have resulted in findings which have some limitations.

With the above in mind, what is presented in this chapter and the findings chapters that follow, is an account of my understanding of the nature of conducting qualitative research at the time when I designed this study, collected and analysed the data, and reported my findings.

### **3.2 Developing a philosophical viewpoint**

Whilst developing my knowledge of qualitative research, I have come to understand the role of ontology (beliefs and reality) and epistemology (understandings of knowledge) in shaping the way a researcher chooses to collect, analyse, and report data. This is often encapsulated by a set of philosophical assumptions (Lincoln and Guba, 1985); what is commonly referred to as a 'research paradigm' (Denzin and Lincoln, 2011; Kuhn, 1970). Therefore, it is my understanding that paradigms influence the way knowledge is studied and interpreted. It is paramount for the researcher to inform the reader of the paradigm within which their work is situated to enable the reader to understand the motivations of the study as well as the reasoning behind decisions made in terms of the study design, analysis, and reporting (Varpio et al., 2021).

Two of the most commonly cited research paradigms are positivist and constructivist-interpretivist. Depending on the nature of the research questions, a paradigm becomes either more or less appropriate due to differences in the way ontology and epistemology are defined. The chosen paradigm will then inform the mode of data collection and analysis. It should be noted that neither paradigm is superior, they are simply different (Varpio et al., 2021).

### 3.2.1 Ontology

Crotty (1998, p.10) defines ontology as *“the study of being”* and when concerning research within the social sciences, relates to the nature of reality (Tuli, 2010). If you explore this concept in more depth, then it is generally considered that there are two positions a researcher may take in relation to how such ‘reality’ exists.

For example, a researcher working within a positivist paradigm tends to adopt an objectivist ontological stance, believing in a singular reality; *“the universe or world conforms to permanent and unchanging laws and rules of causation”* (Aliyu et al., 2014, p.81). In contrast, a researcher working within a constructivist-interpretivist paradigm typically adopts a constructivist ontology, believing that reality is a product of social processes; *“knowledge is the outcome of interactions between individuals, as opposed to pre-existing phenomena which are separate to what is constructed by the individual”* (Bryman, 2008, p.366).

Whilst positivism will seek to find a link between what is observed and the cause of this, it relies on a number of variables being consistent across the study with as little influence from variables as possible (Tuli, 2010). In contrast, when conducting research with living subjects, there are numerous external factors (variables) such as life experiences that may shape the way an individual views the world (Alharahsheh and Pius, 2020); *“[...] we need to be able to capture real-life experiences, which cannot be identical from one person to the next”* (Hammarberg et al., 2016, p.499). With this in mind, research studying social phenomena typically adopts a constructivist ontology, as it intends to develop an understanding of *“the world of human experience”* (Cohen and Manion, 1994, p.36) whereby no two individuals will undergo identical experiences and so the outcomes will be varied (Driver and Oldham, 1986;

Bryman, 2012, p.33). Furthermore, the researcher's position is subjective as the data is interpreted according to, and influenced by, their worldview. This approach allows a more in-depth exploration of multiple viewpoints as well as considering how factors such as culture, social circumstances and timepoints can lead to the development of a range of social realities in different individuals (Alharahsheh and Pius, 2020).

The 'paradigm shift' I experienced in transitioning from working within a positivist mindset to instead adopting a constructivist-interpretivist stance was perhaps one of the most challenging aspects of this research for myself. I was comfortable conducting research in a positivist environment where everything was rigid and I was seeking definitive answers, meaning when I first began my doctoral studies I saw everything as being clear cut with a possible end point to be achieved. When I first began working within a constructivist-interpretivist paradigm I struggled to accept that there would be no end point of this research and that external factors would not be possible to control and would therefore hold influence over the findings gathered through my studies. Whilst there are undeniably still traces of my positivist background that may have surfaced at different stages throughout this research, I do believe that I am now more familiar with, and comfortable working within, a constructivist-interpretivist paradigm. I can appreciate the value of acknowledging external contributing factors that may impact a piece of research and am trying to appreciate that it is not necessary to reach an end point in order for the findings to be meaningful.

### **3.2.2 Epistemology**

Epistemology relates to how knowledge can be created, acquired and communicated (Scotland, 2012). Crotty (1998, p.8) defines this very simply as "*how we know what we know*". Within a positivist paradigm the researcher would aim to gather data that could be observable and measured in order to produce generalisable findings through the development of universal rules and laws to provide explanation for the findings presented (Alharahsheh and Pius, 2020). This mode of working was more familiar to me at the outset of my doctoral studies, especially as my only prior experience of research had taken place in a scientific laboratory setting where all factors were controlled and numerical data was collected and statistically analysed.

In contrast, when conducting constructivist-interpretivist research, the researcher relies on the participant views throughout a study (Mackenzie and Knipe, 2006). As such, this type of research is contextual and findings present the researcher with an opportunity to develop understanding of social action (Swanwick, 2013), as opposed to trying to provide explanation for the findings (Lowndes et al., 2017, p.184). To achieve a deeper understanding of social situations, it is necessary for a researcher to have a closeness to the environment that is being explored and those within it (Creswell and Clark, 2011, p.42). As such, researchers working within the constructivist-interpretivist paradigm typically assume a subjectivist epistemology whereby the researcher *“makes meaning of their data through their own thinking and cognitive processing of data informed by their interactions with participants”* (Kivunja and Kuyini, 2017, p.33). Having considered how ontology and epistemology are defined in the literature, I will now explain how this has influenced my philosophical position in my research.

### **3.2.3 Philosophical position adopted in this research**

It is important that I am clear that I chose to work within the constructivist-interpretivist paradigm. Adopting this approach would allow for me to gather data that is more personal in nature, which would therefore be more likely to help increase my understanding of attitudes towards the personalisation of body donors (Lingard, 2007). This would allow me to build on prior research conducted by others in this field who have previously chosen to adopt a positivist stance.

Furthermore, I felt drawn towards this alternative paradigm as a result of my experiences of working in the DR, examples of which were provided in the literature review chapter of this thesis (section 2.4); with many different students and having been a student once myself. Consequently, I was aware that there were many different ways in which an individual could react and behave whilst in the DR; evidencing the notion of multiple realities associated with research exploring social interactions (Bryman, 2008).

The research presented in this project deals with topics that are likely to spark emotion in individuals. Participant responses to the topics of death, dying and donation will be different given their own life experiences. Considering this, it is

not possible to have complete control over external factors that might influence the data collected as part of this study which would be required if a positivist stance were to be used.

Constructivist-interpretivist research typically adopts a qualitative line of enquiry as the researcher attempts to understand social phenomena in their context (Rehman and Alharthi, 2016, p.56). Although this approach would result in vast amounts of data to be collected, analysed, and reported, I felt that collecting this form of data would place me in a better position to develop an understanding of the phenomenon I was studying. Consequently, I would be able to provide a valuable contribution to the literature regarding medical student attitudes towards learning more about donors, as well as exploring whether body donors in the UK would be willing to relinquish their anonymity. At the time of designing and conducting this study, these concepts were poorly understood.

I was curious to explore and begin to develop an understanding of medical student attitudes towards body donors, and the views of donors themselves about relinquishing anonymity, and a constructivist-interpretivist paradigm would enable this via the collection of qualitative data which is highly appropriate for identifying and/or understanding new/complex issues (Powell and Single, 1996).

### **3.3 Trustworthiness in qualitative research: Navigating a new way of working**

Trustworthiness (also referred to as validity or rigour) is an umbrella term which is defined as the degree of confidence in research data, interpretation and methods used (Connelly, 2016). It can be used to define the criteria for assessing the quality of research (Guba and Lincoln, 1994), and some of the major factors that need to be considered to ensure rigour in research include: bias, generalisability and sampling strategy, sample size, and data saturation. Although I had previously encountered these factors, my doctoral study required me to approach these with a different mindset than I had previously used when conducting positivist research (Varpio et al., 2021). For example, in qualitative studies the researcher becomes the research instrument, rather than remaining an outsider and detached from the research instrument (Tobin and Begley, 2004).

Understanding, and being able to articulate, these differences has been key in my transition from a positivist researcher to a constructivist-interpretivist researcher. This was not an easy task as the literature contains a lot of debate and controversy over how the rigour of qualitative research can be assessed (Rolfe, 2006; Mays and Pope, 1995; Oliver, 2011) which led to confusion at times.

Ultimately, I came to understand that there is no single way to determine the trustworthiness of qualitative research due to its extreme diversity (Mays and Pope, 2000; Meyrick, 2006). I have therefore chosen to focus on the factors associated with rigour that are most frequently mentioned within the literature and that are relevant to my approach. To make informed choices during the planning and execution of this research, it was important for me to first navigate this new way of working and what it would mean in terms of conducting what would be considered to be quality qualitative research.

### **3.3.1 Sampling and data saturation**

#### **3.3.1.1 Sampling strategy**

The sampling strategy of any given study should be clear. Selecting a study sample is necessary as it is typically not practical nor efficient to study an entire population (Suri, 2011). This will allow the reader to understand the context under which the data has been collected, enabling them to make a better judgement about the study and its rigour.

In a qualitative study two of the most common sampling strategies are convenience sampling and purposive sampling (Marshall, 1996).

Convenience sampling (also known as haphazard or accidental sampling) is where the most accessible participants are selected. Whilst this might be the most efficient in terms of time, money and effort, it can result in data that is of poor quality (Marshall, 1996). This is because participants, although readily available and easy to recruit, do not necessarily have the required characteristics that the researcher is looking for (Etikan et al., 2016). In the context of this study, this would mean selecting any students studying across the entirety of the medical degree regardless of whether they were engaged with dissection at that time. Although I could have extended the study to include

any student who had access to the DR and underwent anatomy practical classes, this would not have assisted in addressing the research questions set out for this study as these were specifically focussed on medical students.

I decided that purposive sampling (also known as judgement sampling) was most appropriate for this study. This type of sampling relies on qualities the participant possesses and requires them to have undergone certain experiences (Marshall, 1996) allowing for in-depth data on a particular phenomenon to be gathered (Polkinghorne, 2005). This is important when trying to address specific research questions (Etikan et al., 2016) when the selection of participants should not be random or left to chance (Polkinghorne, 2005). It was important that the students I selected were medical students studying at the University of Leeds, who were actively (or soon would be) engaging in dissection classes. Regarding body donors, the only requirement of my sample was that they were registered to donate their body to the University of Leeds. Recruitment of participants only associated with the University of Leeds was due to the parameters set within the study guidance I was provided with for this project.

#### **3.3.1.2 Sample size**

Sample size is of great importance when conducting a quantitative study. In positivist research the larger the dataset the more reliable the study is deemed to be (Polkinghorne, 2005). Conversely, a qualitative study tends to have a much smaller sample size as it typically focuses on the depth, rather than breadth, of data obtained (Tuckett, 2004; Patton, 1990).

The sample size is largely influenced by the aims of the research and can be guided by other studies conducting the same type of research within the same field. If conducted concurrently, data analysis can inform sample size (Tuckett, 2004), however, in a study whereby the data is to be collected prior to analysis it is near impossible to know what sample size will be required to achieve data saturation (Varpio et al., 2017). More detailed information regarding the sample sizes for the study presented in this thesis can be found in sections 3.6.1.1 (p.76) and 3.6.2.1 (p.81).

Furthermore, it is often the case that ethical approval be sought from the relevant body prior to commencement of a study involving human or animal

participants (Tuckett, 2004). The need to seek ethical approval typically means that it is difficult to collect new data and conduct data analysis as part of an iterative process (Marshall, 1996). However, as part of this process, many institutes will ask a researcher to state their required sample size (Baker and Edwards, 2012; O'Reilly and Parker, 2013). This results in researchers providing best estimates of their required sample sizes using the existing literature and through having some level of understanding of the richness of data that will be collected using the selected method (Varpio et al., 2017). Details about what this meant for my own study will be further explored in section 3.6 (Participant sampling and recruitment) (p.75).

### **3.3.1.3 Data saturation**

To determine when and if a researcher has reached data saturation, it is first necessary to consider whether the purpose of the study is to reach data saturation or not. In a qualitative study, this is considered to be the point at which no new information is discovered, however it is near on impossible to determine when this might be. No matter how many interviews/focus groups/observations are conducted, there is always the chance that “just one more” might uncover new and previously undiscovered perspectives (Varpio et al., 2017; Johnson et al., 2020).

Whilst there is suggestion that data saturation should be considered as the gold standard of signalling the trustworthiness of a study (Guest et al., 2006), there is argument that due to the variability in the type of data collected from different qualitative methods, this cannot be used as a criterion for assessing the rigour of a qualitative study (O'Reilly and Parker, 2013; Sim et al., 2018).

The desire for researchers to prove they have achieved data saturation seems to stem from the demands of reviewers and editors of journals (Braun and Clarke, 2021b). It has been suggested that in qualitative research, instead of saturation being determined by the point whereby no new ideas emerge, saturation is instead when categories are fully accounted for and relationships between them explored sufficiently so that theory can emerge (theoretical saturation) (O'Reilly and Parker, 2013; Marshall, 1996). However, due to the complexity of the concept of data saturation in qualitative research, it is not unreasonable to suggest that saturation should not in fact be used as a marker

of quality (Varpio et al., 2017). As an inexperienced researcher, learning more about alternative views on what it means to achieve data saturation was informative and reassuring in helping me to feel fully confident about the quality of the data I had collected. It meant I became comfortable with the concept of not being able to interview every single student, yet still be able to collect data that would be insightful.

### 3.3.2 Generalisability

The term 'generalisability' (also sometimes referred to as 'applicability') is "*the transferability of the findings to other settings and applicability in other contexts*" (Noble and Smith, 2015, p.34). There is argument that the term generalisability when understood in this sense, does not fit well within constructivist-interpretivist research and is more suited to studies adopting a positivist stance whereby the researcher is attempting to achieve statistical generalisability in reporting the magnitude or size of a phenomenon (Kitto et al., 2008; Varpio et al., 2021).

Instead, an alternative way to view generalisability within the constructivist-interpretivist paradigm is the ability of the findings to contribute to theory which might in turn be useful in making sense of similar persons or situations (Norris, 1997). Outliers in the data collected are no longer considered to be anomalies and therefore dismissed as they would be in positivist research, but are considered vital in allowing the researcher access to the 'bigger picture' (Varpio et al., 2021).

This was important for me to understand and become comfortable with, as ignoring any unique responses from participants would potentially mean missing out on telling the full story. Developing a better understanding of the term generalisability and how it is understood within constructivist-interpretivist research was essential in preventing me from undermining the value of my research (Morse, 2015). Just because the findings do not represent all medical students across the entire University, or even, country, does not mean that my findings do not add value to the literature. This is when sampling strategy and data analysis become critical, as they can be used by other qualitative researchers to assess the generalisability of findings (Gibbs et al., 2007).

### 3.3.3 Bias

As with data saturation and generalisability, bias is also considered differently within the constructivist-interpretivist paradigm than it is within the positivist paradigm. For example, a positivist would perceive bias to be an instance of the researcher's subjectivities "contaminating" the data set (Varpio et al., 2021). However, it is this subjectivity that is a key element of conducting successful constructivist-interpretivist research (Braun and Clarke, 2021a). With this in mind, there are different measures that need to be taken by researchers conducting qualitative research within the constructivist-interpretivist paradigm to ensure that this subjectivity is accounted for and embraced (Connelly and Peltzer, 2016). Two of the most common of these are reflexivity and triangulation (Varpio et al., 2017) although member checking, whereby participants are asked to check and confirm study results, is also acknowledged to be a way of enhancing trustworthiness in qualitative findings (Birt et al., 2016).

### **3.3.3.1 Reflexivity**

As the researcher, I acted as the primary data collection tool throughout this study. This meant that my own prior experiences and viewpoints would inevitably hold some bearing on the themes constructed from the data during analysis (Swanwick, 2013; Varpio et al., 2017).

To account for such potential insider bias, I incorporated the practice of reflexivity (Cristancho et al., 2018). This began with me acknowledging my personal beliefs and assumptions, and how these might impact on my understanding of the experiences of others (Ng et al., 2019). This was an important part of the research process as it required me to consider how my position in this project, including how my relationship with students as well as my personal experiences in the DR and working with donors may have shaped the way in which I gathered and interpreted the data presented in this thesis (Lietz et al., 2006; Kornbluh, 2015). It is also important to acknowledge the limitations of my knowledge and understanding, due to experiences that participants may have undergone that I have no knowledge of (Ng et al., 2019).

Reflexivity was a practice I initially knew nothing about, and it initially felt very unnatural to begin with, which I now understand, is quite reasonable for a novice researcher like myself (Watt, 2007). To get to grips with reflexivity I

engaged with the literature as well as sought guidance from my postgraduate tutor. This advice resulted in keeping a research journal, whereby I documented the decisions I made throughout my research journey. If I reflect on the entries in this journal, I can appreciate that, at the outset, I still held the mindset of a positivist researcher without always being aware that I did. However, I now have a greater awareness of where and how a positivist mindset is operating, for example reflecting on the conflict I initially felt by embracing anomalies as opposed to discounting them as I was previously used to doing whilst working within a positivist paradigm. Although my mindset has begun to shift, there are no doubt still traces of the influence of my background in positivist research of which I remain unaware. However, by keeping a record of the decisions made, I am able to reflect on how my position and viewpoints at the time have shaped the way this research has been conducted, analysed, and presented. For example, looking back at my journal, it is very apparent that I felt this research could result in an endpoint and in the early stages often wrote that my analysis of transcripts was 'complete.' However, I can now appreciate that analysis of qualitative data is not akin to that of quantitative data and is instead an iterative process that continues over a prolonged period of time.

### **3.3.3.2 Triangulation**

Another tool I implemented whilst carrying out my data analysis was triangulation (Heale and Forbes, 2013), whereby multiple methods or data sources are used in an attempt to provide a more comprehensive overview of the topic being investigated (Patton, 1990). There are different approaches to triangulation, including investigator triangulation, methodologic triangulation, theoretical triangulation, and data analysis triangulation (Thurmond, 2001). The form of triangulation I felt was most appropriate in my situation was investigator triangulation. This meant that I ensured that the data I collected was not only analysed by myself, but that my interpretation of the data was discussed with and defended to one of my supervisors (Dr David Roberts). Alongside this, at times, the institute's postgraduate tutor and my peers would analyse isolated transcripts as part of workshops provided to develop our analytical skill set (Elliott et al., 1999).

I found investigator triangulation most suitable for my project as it facilitated ongoing discussion of the findings from different viewpoints, which contributed

to surfacing and therefore reducing research bias influencing the findings (Yardley, 2000; Flick, 2004, p.179). By engaging in discussions with other researchers about the study findings I was able to determine commonalities and any disputes in the interpretations of the data (Lietz et al., 2006). If I had instead implemented methodological triangulation (use of multiple methods of data collection), or data analysis triangulation (multiple methods of analysing data), the same level of discussion would not have been generated between myself and others.

Acknowledging any conflicting views in my findings that have been flagged by triangulation has enabled me to report a more in-depth understanding of the data gathered (Johnson and Waterfield, 2004). It is important to note that the purpose of incorporating the practice of triangulation was not to enable me to arrive at a definitive answer to my research questions but, instead to try and ensure that I have captured a diverse range of perspectives on the phenomenon (Denzin and Lincoln, 2008).

#### **3.3.3.3 Member checking**

A further way of attempting to account for any excessive levels of researcher bias can be achieved through the practice of member checking (also known as participant validity). This requires participants to check and confirm the results presented by the researcher following data collection and analysis (Birt et al., 2016).

Due to the nature of the topic being discussed and following my experiences during the focus group study I conducted as part of this research; I did not deem member checking to be a suitable practice to adopt in this study. I found that students were often influenced by others in the group and frequently changed their responses to questions to 'fit in' or 'give the right answer'. I was concerned that by asking students to revisit their transcripts or the findings presented following analysis of these transcripts, they would second guess their initial answers if they felt they did not sound to be particularly favourable. As such, I decided to practice investigator triangulation, as well as reflexivity, in order to keep my voice separate from that of the participants.

### **3.4 Research design: Planning a qualitative study**

I have attempted to be as clear as possible in the following sections which will explain what qualitative methods were implemented, who the chosen participants for this study were, the sampling strategy and the number of participants to be recruited including the process of recruitment. I explain the thought process behind the decisions made, as well as reflecting on how my experience and knowledge conducting this doctoral research project may lead to me making different decisions in future research.

### **3.5 Research design: Selecting qualitative methods**

Qualitative research allows for researchers to understand social phenomena in naturalistic, as opposed to experimental settings whereby numerous factors are controlled (Powell and Single, 1996). In addition, qualitative research (unlike its quantitative counterpart) enables the researcher to build a trusting relationship with participants, potentially leading to participants disclosing information that might not have been otherwise provided (Britten et al., 1995). This meant that I was keen to build a trusting relationship with students, in order to help them feel comfortable in giving their honest responses, as opposed to responses they felt I would want to hear.

Qualitative research typically requires a greater time commitment, particularly in terms of data analysis (Britten et al., 1995). This was important for me to consider, especially given the time constraints of this research project and provides some explanation as to why this project focussed on students studying at only one higher education institute. Furthermore, qualitative methods are thought to provide the researcher with insight into aspects of the hidden curriculum that may not be uncovered using more objective, quantitative approaches (Cotton et al., 2013). Qualitative methods adopted generally include either focus group interviews (McKenna and Williams, 2017), or one-to-one interviews with students (Gardeshi et al., 2018).

Initially, it was decided that focus groups would be utilised to try and understand the views of student participants in this study.

#### **3.5.1 Focus group interviews**

The focus group dates back to the 1920s when it was first used as a market research technique. It consists of a group of individuals gathered by the

researcher to discuss a topic on which they all have experience (Powell and Single, 1996). They allow the researcher to determine how diverse the range of participant views and opinions are on a given subject (Britten et al., 1995; Wibeck et al., 2007).

One of the earliest uses of a focus group in research was done by Robert Merton in the 1950s (Sim, 1998), however, it is only more recently that this method has become more widespread in health and social science research (Morgan and Krueger, 1993). Due to the reliance of group interaction, focus groups are a well-recognised tool for conducting qualitative research which aims to increase understanding of social phenomena within specific subsets of society (Morgan, 1996).

#### **3.5.1.1 Advantages of focus group interviews**

Focus groups can provide access to areas of the subject being investigated that are otherwise deemed inaccessible to the researcher (Lambert and Loiselle, 2008). Through their discussions amongst themselves, I hoped that students might be more likely to recall scenarios they had experienced in the DR and compare their viewpoints on the questions asked. Such opportunities to reflect on their responses could also allow students the chance to expand on, or clarify, any answers they had provided (Vaughn et al., 1996; Gillett et al., 2016), potentially resulting in the generation of new ideas that might not have otherwise emerged (Krueger, 1998b; Zundel et al., 2015).

Where the topic of discussion might be deemed to be particularly sensitive, it is more suitable to recruit groups of participants who are known to one another (Gill et al., 2008). This may have been seen as appropriate for this study, as I would be asking students to talk about topics such as death and dying as well as reflect on their behaviours in the DR. Perhaps being surrounded by peers would provide support for students and make them feel more comfortable, hence more likely to open up.

Focus groups might be deemed advantageous in studies whereby time is a constraint. This method is thought to provide the researcher with a larger data set in a shorter time span as several participants will be interviewed concurrently during a focus group (Vaughn et al., 1996).

Another noted strength of focus group interviews is their role in the development of research instruments within fields that are relatively unexplored and so little is already known (Sharts-Hopko, 2001). Prior to my doctoral study, the chosen method, in the literature, for collecting information from medical students regarding the personalisation of donors was via quantitative questionnaires (Crow et al., 2012; Bohl et al., 2013; Talarico, 2013). Although these questionnaires may have included one or two qualitative open-ended questions, I felt this was not enough for a deeper understanding behind the participant responses to be developed. Furthermore, I felt that another advantage of focus group discussions could be the ability of the research being able to stimulate deeper discussion and facilitate participants in co-constructing the narrative as the focus group developed.

#### **3.5.1.2 Drawbacks of focus group interviews**

Although I have noted participants being known to one another to be a strength of focus groups interviews for exploring sensitive issues (Gill et al., 2008) in some instances such familiarity with fellow participants can be seen to be a disadvantage (Morgan and Spanish, 1984; Powell and Single, 1996; Barbour, 2005).

Such concern is linked to the compromised confidentiality of what participants disclose throughout the discussion (Kitzinger, 1995), which can in turn result in inhibition of some participants to share their views (Sharts-Hopko, 2001). Alternatively, there has been suggestion that some participants might change their responses to questions, providing answers they perceive to 'fit in' with what the rest of the group is saying, rather than being a true reflection of their own beliefs (Krueger, 1998a); an effect I experienced first-hand whilst conducting this study.

Another difficulty of implementing focus groups, particularly for less experienced researchers, is ensuring that conversation remains relevant amongst the group as well as encouraging all members of the group to become involved. It can be challenging to ensure that the quieter participants are given the opportunity to speak (Barrett and Twycross, 2018), especially if they do not feel comfortable in front of other participants (Onwuegbuzie et al., 2009), or if another participant is consistently trying to dominate the conversation. To help me prepare to deal

with such situations, I attended training that provided me with a good grounding of how to deal with the dynamics I might experience as a researcher whilst conducting focus groups, and how to manage them.

Whilst focus groups aim to explore group interaction, this is often limited to the immediate context and composition of the specific focus group session, meaning it can be affected by the individuals present (Wibeck et al., 2007; Acocella, 2012). Furthermore, it is important to prevent the researcher from influencing the discussion, which can (and was) minimised by having a set question guide and understanding from the researcher that they should not get too personally involved in the discussions (Smithson, 2000; Zundel et al., 2015). By developing a set question guide, I was able to collect data without engaging in, and inadvertently leading, the conversation in a way that would cause considerable influence on the findings of this study. The question guide allowed for free-flowing and open discussion with minimal involvement, and therefore influence, from myself.

### **3.5.2 A change in data collection method**

Due to recruitment difficulties, as well as concerns about the data collection through focus groups, it became apparent that a change in data collection method was required if this study were to be successful.

As a result of this, I needed to make my decision having considered other methods of data gathering used in constructivist-interpretivist research. These commonly include observation, qualitative questionnaires, and one-to-one interviews.

#### **3.5.2.1 Observation**

Observation involves a researcher keeping a record of their encounters with individuals undergoing an experience (Polkinghorne, 2005). This method of data collection tends to take a more unstructured approach and this could mean that the data collected might not be relevant in helping to address the research questions posed at the outset (Morgan and Spanish, 1984; Lopez and Whitehead, 2013). However, my research project was explicitly seeking the views of participants on certain aspects of donation. Gaining their opinions on receiving donor information and the type of information they would be open to

receive would not have been possible to gather simply by observing students in the DR.

Observation is considered more effective if participants are unaware they are being observed. However, this is unethical as it would mean participants would not be in a position to give fully informed consent prior to the study commencing (Lempp and Seale, 2004; Lopez and Whitehead, 2013). If students were aware they were being observed, they might alter their behaviours accordingly (this becomes particularly relevant when I discuss some of the behaviours students disclosed in the findings chapters of this study). Consequently, I decided that observation would not be an appropriate choice of data collection method for this study.

### **3.5.2.2 Qualitative questionnaires**

A qualitative questionnaire adopts the same premise as a quantitative questionnaire, in that a set of questions are given to all participants. However, a qualitative questionnaire consists only of open-ended questions to which participants are required to give their own answers (Eckerdal and Hagström, 2017; Heath et al., 2018). They are essentially a fully structured interview, whereby no deviation from the interview guide is permitted, meaning no follow up questions can be asked, nor can clarification be sought (Gill et al., 2008). In light of this, my concern was that qualitative questionnaires might have placed too much burden upon the participants and could result in responses that were either unclear or superficial in detail (Woodward, 1988). There is also a risk that participants may either not complete the questionnaire fully or even complete it multiple times (Kuter and Yilmaz, 2001), as well as losing the opportunity to stimulate deeper thinking by asking follow up questions when the researcher is present during the data collection.

Qualitative questionnaires do not typically require contact between the researcher and the participants. This can lead to a reduction in rapport between the two groups and might leave participants less likely to open up, especially regarding a sensitive topic (Heath et al., 2018). In turn, participants might not feel as comfortable sharing their true responses to the questions and may instead provide answers they deem to be more suitable (Eckerdal and Hagström, 2017). Consequently, my concern was that this approach would

provide me with data that was largely superficial and therefore not allow me to develop a deeper understanding of student attitudes towards the phenomenon being studied, thus preventing the research questions being properly addressed.

Receiving completed qualitative questionnaires that were lacking in information would have left me in a position whereby I would not have been able to conduct in-depth thematic analysis. I was aware that such incomplete analysis would have resulted in not only myself, but also other researchers in this field, questioning the trustworthiness of the findings presented.

However, there were some potential advantages in using this method, for example, a questionnaire of this type could be freely distributed with little cost or difficulty, and would have also ensured absolute anonymity of participants (Leung, 2001). Distributing questionnaires of this type online would not only allow students across the entirety of the UK to be included, but would have also allowed expansion worldwide (Kuter and Yilmaz, 2001; Regmi et al., 2016). However, this may not have been appropriate as questions developed in one country or cultural context may not be applicable outside that context (Boynton and Greenhalgh, 2004). For example, the experience of studying anatomy differs not only worldwide, but also within different institutes within the same country/culture (Nnodim, 1996; Lin et al., 2009; Tseng and Lin, 2016; Kaye et al., 2019).

Finally, I was concerned that using qualitative questionnaires may have led to me slipping into a more positivist mode of working, attempting to group findings and provide descriptive statistical data to show the proportions of students related to each answer. I felt the questionnaire method was too close to a positivist data collection tool and would not have enabled me to develop in the way in which I have as a constructivist-interpretivist researcher.

Considering all these factors, I decided that qualitative questionnaires would not be suitable for this study. I felt that the inability to ask for clarification or to include follow-up questions would result in a data set that could be lacking depth and richness. Furthermore, it seemed counterintuitive for this study to take such an impersonal approach, given the nature of the topic being researched.

### 3.5.2.3 One-to-one interviews

An interview is a method of collecting either qualitative or quantitative data. Quantitative interviews tend to consist of a series of closed questions, with participants restricted to one of the answers provided for them. In contrast, qualitative interviews generally comprise of a set of open-ended questions, whereby participants are able to respond in their own words (Doody and Noonan, 2013). In other words, a qualitative interview, aims to discover the interviewee's own framework of meanings by obtaining the participants' subjective experience of a phenomenon they have experienced (McIntosh and Morse, 2015).

Qualitative interviews can be 'structured' (somewhat resembling a spoken questionnaire - much like qualitative questionnaires) allowing for no deviation from the set questions or 'unstructured' whereby the direction of conversation is guided by the participant and no set questions are used at all (Barrett and Twycross, 2018). As such, there is a chance that a structured interview might prevent new and unexpected themes from emerging, whereas an 'unstructured' approach risks collecting data that fail to address the research question(s) at all (Britten, 1995; Britten et al., 1995).

An unstructured approach can be particularly problematic for a novice researcher like myself who lacks experiences in collecting qualitative data via interviews (Doody and Noonan, 2013). Some texts prefer to refer to unstructured interviews as 'in-depth' as it is not possible for the interview to be without any form of structure given the initial question will bear some relation to the subject being researched (Britten et al., 1995).

Whilst becoming familiar with the literature on use of qualitative interviews for data collection, I came across a third type of qualitative interview – 'semi-structured'. These are clearly described by DeJonckheere and Vaughn (2019, p.2) who stated:

*“Semi structured interviews are an effective method for data collection when the researcher wants: (1) to collect qualitative, open-ended data; (2) to explore participant thoughts, feelings and beliefs about a particular topic; and (3) to delve deeply into personal and sometimes sensitive issues”*

Consequently, I felt that this type of interview particularly resonated with the research I was conducting. Interviewing with open-ended questions would allow the flexibility of exploring themes that might arise spontaneously (Berg et al., 2004; Ryan et al., 2009). Furthermore, I would not be tied to the constraints of a structured interview which does not allow for follow-up questions or clarification to be sought (Gray, 2013), particularly useful when researching a topic that previously has had little exploration (Lincoln and Guba, 1985).

In addition to this, employing a semi-structured approach to interviewing meant I would not be tied to the exact wording of questions, allowing me to develop a conversational style during the interview that focuses on the topic (Patton, 2002). I felt that this personal touch would be beneficial in allowing me to build a rapport with participants which can prove to be of benefit in studies much like the one presented in this thesis, whereby a topic that might be deemed to be sensitive is to be explored (Doody and Noonan, 2013).

A potential drawback of one-to-one interviews relates to timeframe (Barrett and Twycross, 2018). Conducting multiple individual interviews, which could last up to approximately one hour each, requires a greater time commitment than the aforementioned qualitative questionnaire. Despite this, I felt that the potential of interviews in allowing me to obtain rich and relevant data to help address the research questions could justify the time commitment required for this method.

Much like the other qualitative data collection methods described, one-to-one interviews are also susceptible to a level of bias. This could arise from the researcher imposing their own assumptions (Britten, 1995) or simply from participants providing answers that they think the researcher wants to hear as opposed to speaking their own truth (Doody and Noonan, 2013).

In this study, I felt the risk of students providing what they deemed to be 'model answers' could be reduced by building a strong rapport between myself and each interviewee. I had to be mindful that students might perceive me as being in a position of power. This was because at the time this research was conducted, I was working as an anatomy demonstrator, teaching a large majority of the students whom I was hoping to (and ultimately did) recruit.

Ethically, I needed to ensure that students were aware that their participation in my study would not impact on their future assessments or grades, nor any

judgement from myself. I did not believe that my perceived position of authority would impact responses as students often spoke freely about their work as well as personal lives not only in my presence, but also directly to me, in the DR. This, in my opinion, signalled their levels of comfort and trust in me and so I did not anticipate this to be an issue during interviews. Furthermore, students were aware, that as an anatomy demonstrator, I played no role in the development of the curriculum or the setting and marking of their assessments.

In addition to interviewing students, the research study also included interviews with body donors. It could have been possible that these individuals who received information about my study would have been unaware of my (lack of) involvement in the donation process. To account for this, as part of my ethics applications, I was conscious to submit documentation to be sent to donors that clearly stated this was a PhD project and that they were in complete control as to whether they consented to participate or not and their decision would have no repercussions regarding their donation. I was aware that when conducting donor interviews, I would need to be open to what each individual had to say and that I should attempt to make them feel at ease.

Interviews do not yield the same type of qualitative data as focus groups (Morgan and Spanish, 1984; Rosenthal, 2016) as they do not have the interactive aspect, as such focus groups are thought to tap into a different realm of social reality (Sim, 1998). Subsequently, there is concern as to whether interviews produce the same richness of data, due to the lack of active discussion, which is typically noted to lead to new ways of thinking and ideas that might be generated during a focus group (Wibeck et al., 2007). It is important to note that no one method is superior to the other, rather they produce different results (Morgan and Spanish, 1984).

However, when piloting focus groups, I encountered challenges regarding student willingness to disagree with each other, as well as recruitment difficulties. This led me to consider the alternative qualitative methods as listed in this section, following which I decided that semi-structured interviews would be the most suitable way to move forward with data collection in this study. Following my decision to include this mode of data collection, I then considered whether face-to-face or telephone interviews would be most appropriate.

### **3.5.2.3.1 Face-to-face and telephone interviews**

Both face-to-face and telephone interviews were utilised in this research. Medical students were invited to participate in either a face-to-face or telephone interview and body donors were invited to participate in telephone interviews only.

Despite some suggestions that face-to-face interviews are superior to telephone interviews, there is little research supporting this assumption (Colombotos, 1969; Sturges and Hanrahan, 2004; Novick, 2008). Being interviewed in their own homes would provide donors both the opportunity to speak in the comfort of familiar surroundings, as well as to terminate the interview at any time they wished, simply by hanging up the phone. Furthermore, I hoped that this would also enable them easy access to family and friends if they were to become upset or distressed at any point during the interview. From my own perspective, I decided that telephone interviews also alleviated any potential time pressures during the collection of my Phase 2 data by negating the need to travel long distances to meet with donors in person.

When planning face-to-face medical student interviews, one of the key factors I needed to consider was the location at which the interviews would take place. This was because I wanted to ensure the location provided both easy access for students, as well as being a neutral environment for us to meet in. Ultimately, all interviews took place in Worsley Building on the University of Leeds premises. This is a building with which medical students are very familiar as it is where the School of Medicine is based.

I also decided to offer telephone interviews as an alternative to medical students. By offering telephone interviews, I hoped some students might feel more relaxed and therefore more likely to disclose in-depth information (Novick, 2008). This option also provided medical students with a greater degree of flexibility around their busy timetable by not requiring their presence on campus (Burnard, 1994). Only one student opted for a telephone interview.

## **3.6 Research design: Participants – Sampling and Recruitment**

Regardless of the type of research being conducted, it is important to make the sampling strategy clear, as well as how participants will be recruited (including

the sample size) (Oliver, 2011). As described in Chapter 2, this study consisted of three phases each of which required a different set of participants:

- Phase 1: Develop an understanding of how medical students feel about:
  - b. Working with body donors in the DR, and;
  - c. The potential of learning more about body donors who are currently completely anonymous.
- Phase 2: Determine whether body donors are willing to provide information about themselves and, if so, consider what information would be useful to provide to students and in what format.
- Phase 3: Provide medical students with the information gathered about body donors prior to, and following, experience of dissection. Develop an understanding of how this information has impacted students.

### **3.6.1 Medical students**

#### **3.6.1.1 Sampling**

Medical students studying at the University of Leeds were to be recruited for Phases 1 and 3 of this research. This research was exploratory in nature and had not, to my knowledge, been conducted in the UK. It was therefore unknown how students might react to engaging with conversations about body donors and personalisation of these individuals; a contribution I hoped to be able to bring to the field.

A lack of validated qualitative data collection tools regarding this topic meant that a small-scale study would allow me to develop an appropriate resource which could then be implemented as a large-scale study.

At the University of Leeds practical anatomy is taught to medical students in their first and second years of study. In addition to this, students who have typically completed their second or third year of study in medical school have the option to study for an intercalated Bachelor of Science (BSc) in Clinical Anatomy whereby dissection is also incorporated into the programme of study.

Medical students studying in their third-, fourth- and fifth years of medicine no longer participate in dissection classes. As a result, they would have been providing retrospective views on their time in the DR and I felt they might not reflect accurately on how they would have felt about receiving donor information. Furthermore, the existing research at the time this study was developed included only those students who were, at the time, directly involved in working with body donors during anatomy classes (Crow et al., 2012; Bohl et al., 2013; Dosani and Neuberger, 2016). By including students in the same situation in my own study, I hoped I would be able to consider the findings generated from my research within the context of existing literature.

One group of students that had not been considered in the literature were those medical students who had opted to intercalate to study anatomy in more depth. At the University of Leeds, medical students have the option to do this by completing a BSc in Clinical Anatomy. During this year long degree, students conduct dissections that they have not attempted in their first and second years of study, for example modules on advanced head and neck (including extensive dissection of the head and neck) as well as advanced neuroanatomy (including brain dissection). Consequently, I hoped that including this group of students in my study would provide a novel insight into this phenomenon that had not previously been reported in the literature. However, a potential limitation regarding the inclusion of this group of students could arise as this group of students have actively chosen to partake in further study of anatomy via dissection. As such these students may be more invested in this study than those who were simply studying anatomy as part of the standard medical degree.

Although it could be possible to track a singular cohort of students throughout the entirety of medical school in order to compare their responses towards the personalisation of donors at the beginning of the degree through to the later stages of their degree, this was not an option for this PhD studentship. Firstly, the PhD studentship was to be completed within a timeframe of 4 years, whereas the medical degree last for 5 years (or 6 years if a student intercalates). Secondly, I feel it would be unlikely that a novice researcher could enter into this field, become familiar with the new way of working within the constructivist-interpretivist paradigm, determine a data collection method, gain

ethical approval, recruit participants, collect data, and undergo data analysis within the timeframe of 4 years. For example, ethical approval would need to have been applied for within the first month or two of the studentship commencing, which would not have been viable for myself.

Informed by the data collected from first- and second-year medical students as well as those intercalating in anatomy, Phase 3 of this research required the recruitment of first-year medical students only, at two different time points during the academic year; prior to exposure to the DR (2018/2019 cohort), as well as following one term of dissection classes (2017/2018 cohort).

However, prior to Phase 3 being conducted with the 2018-2019 first-year cohort, there was a change in the anatomy curriculum. This change meant that *all* first- and second-year dissection classes were replaced with prosection based anatomy. Intercalating students continued to carry out dissection.

Although this was a significant change in the way anatomy was taught, I did not deem this change in the curriculum to be problematic to my doctoral research, as students were still being recruited and exposed to the information about body donors prior to even entering the DR for the first time. Therefore, for Phase 3, the inclusion criterion was to be a first-year medical student studying at the University of Leeds who had either completed one term of dissection classes (2017/2018 cohort), or to be a first-year medical student who had not previously entered the DR (2018/2019 cohort).

#### **3.6.1.2 Recruitment**

Due to difficulties recruiting enough students to complete the desired amount of focus groups for this study, a change in method was necessary. Ultimately, this led to a transition to one-to-one interviews, and I decided to use the focus groups I conducted to form a pilot study.

##### **3.6.1.2.1 Medical student focus groups and interviews**

Students were recruited for focus groups, and subsequent interviews, via various Virtual Learning Environment (VLE) announcements, made on my behalf, by the appropriate year group co-ordinator (first- and second years) or course lead (intercalators) (Appendices 3 and 4). Following their expression of interest, students were sent a more detailed information sheet along with a copy

of the consent form they would be required to sign, should they wish to proceed and participate in the study (Appendices 5-8).

First-year medical students in Phase 3 were initially recruited via an announcement on the VLE made by the year group co-ordinator, inviting them to attend the presentation I had developed on body donors and donation (Appendix 9). Students attending the presentation were asked to fill out and return a slip of paper with their name and email address, if they wished to take part in a follow-up interview (Appendix 10). If a student indicated an interest in participating in an interview during Phase 3, they were sent the relevant participant information sheet and consent form to read prior to participating in the interview (Appendices 11 and 12). In both Phases 1 and 3, if an excess of students volunteered to participate, then a random number generator was used to select which students would participate (Bryman, 2008). This was only necessary in Phase 3 with the Pre-DR group of students.

#### **3.6.1.2.2 Medical student focus groups**

I intended to run three focus groups for each year group involved in my study, following guidance provided by Morgan and Scannell (1998). In order to determine the number of participants per focus group, I took advice from Vaughn et al. (1996) and Gates and Statham (2013), who suggested that six participants are typically sufficient to run a successful focus group. Consequently, I aimed to recruit as close to this number of students as possible for each focus group in this research. Furthermore, none of my focus groups were planned to run for longer than 45-60 minutes as this is often the physical and psychological limit of most people (Krueger, 1998b).

Despite my plans to include them, it soon became evident that focus groups were not going to be an appropriate method to use in my study. One of these difficulties presented early on during Phase 1 when I ran in to difficulties trying to recruit enough students in each year group to allow for multiple focus groups to take place. This resulted in only one focus group being organised for each year group of students. A number of factors could have caused the difficulties I experienced, such as: students not wishing to discuss the topic in front of their peers, students having a lack of interest in the topic to be discussed, time pressures for students, or perhaps students simply missed the invite that was emailed to them for this study.

Subsequently, I made the decision to utilise the focus groups and the data I had gathered whilst running them, in the form of a pilot study. This allowed me to create, test and develop an interview guide, as well as begin to gain an insight as to how students felt regarding learning more about body donors. Moving forward I planned to instead recruit students to participate in one-to-one interviews as opposed to continuing with focus groups.

#### **3.6.1.2.3 Medical student interviews**

I hoped that incorporating interviews into my study would rule out any of the difficulties I had faced when trying to recruit for, and implement, focus group discussions. I had recruited a sufficient number of students from each cohort that participated in the pilot study, giving me confidence that I would be able to recruit similar numbers, if not more, for a one-to-one interview study on this topic. Furthermore, I felt that interviews might encourage the discussions between participants and myself to be more free-flowing and uninhibited due to the lack of presence of their peers. As I will discuss in the following chapters, the more private nature of on-to-one interviews did appear to lead to students feeling more comfortable in disclosing details about their emotional experiences in working with donors in the DR.

For each group of students included in Phases 1 and 3, I planned to interview 5-6 students. This number was loosely based on very limited data regarding qualitative research within this area of medical education. For example, one study reported interviewing 29 second-year medical students (Lempp 2005) whereas another study carried out with second-year medical students included only four student interviews (Madill and Latchford, 2005). Aside from this, due to the subjective nature of qualitative research, there is simply no 'one size fits all' in terms of participant numbers that can be applied to qualitative studies as a standard rule (Fusch and Ness, 2015). Typically, qualitative data collection is continued until theoretical saturation is thought to have been achieved, meaning that new data does not suggest new insights into an emergent theory (Bryman, 2012, p.421).

Throughout the rest of this thesis, if the term 'student' is used, unless otherwise specified, this is referring to 'medical student'.

#### **3.6.2 Potential body donors**

### **3.6.2.1 Sampling**

To gather information about individuals who donate their body for anatomical examination at the University of Leeds as part of Phase 2, I opted to speak with newly registering donors at the university between 01/10/16 and 01/02/17. This was more appropriate than contacting individuals already registered with the university to donate their body as they had not previously given consent to be contacted regarding any research studies.

Due to the short time span of this study, I felt it would be extremely unlikely to be able to gather enough information from body donors who were close to dying. By this, I mean donors who might die within the next 12 months allowing for their body to be donated, preserved, and dissected by students. Instead, the group of donors I chose to include in my study had completed the body donation registration documentation and were committed to donating their body following their death.

Therefore, the only inclusion criteria for participants in Phase 2 was to be a newly registering body donor at the University of Leeds.

### **3.6.2.2 Recruitment**

#### **3.6.2.2.1 Interviews with potential body donors**

All registering donors between 01/10/16 – 01/02/17 were invited to participate. Individuals who enquire about body donation at the university are sent an information pack and consent form regarding their donation; a line of communication that was utilised in this study. This meant that alongside the body donor information pack, a letter about my study, participant information sheet and study consent form were also sent to those who expressed an interest in donating their body (Appendices 13-15). On average, 50 individuals complete the registration process to bequest their body to the university on a monthly basis. Over the four-month period that invitations were distributed, I estimated that around 200 individuals would be informed about my study.

Individuals receiving information about this study were then able to decide whether they would like to participate. If they were interested to take part, they were asked to sign and return the study consent form to the university, alongside their completed body donation consent form. I subsequently

telephoned each person that had returned the study consent form to arrange a suitable date and time to carry out the interview.

The main limitation in using this line of communication to recruit body donors for this study was that any individuals who chose to download the body donation documentation via the University of Leeds website would be excluded from this study. This is because it would not be possible to send study information to these individuals, unlike those who had already established direct communication with the Anatomy Facilities Manager to enquire about body donation.

Response rates for research whereby body donors have been contacted in order to obtain personal information have previously been recorded between 38% (n=169) (Fennell and Jones, 1992) and 85% (n=218) (Richardson and Hurwitz, 1995). However, these studies all collected data via the distribution of paper questionnaires instead of my chosen method of telephone interviews.

It is difficult to predict how many participants will be required to obtain a diverse and detailed data set (Baker and Edwards, 2012). However, between 10-60 participants can be considered to produce a rich data set when conducting interviews (Starks and Trinidad, 2007). With the above in mind, I was confident that 20-45 potential body donors would yield a satisfactory variation of responses for the purposes of this research.

Throughout the rest of this thesis, I will refer to this group of 'potential body donors' simply as 'donors'.

### **3.7 Research Design: Data analysis**

Qualitative data analysis techniques were utilised to analyse the data collected from medical student interviews during Phases 1 and 3. Instead of extensive qualitative data analysis, simple descriptive statistics (i.e. frequency) were calculated for most of the data collected during donor interviews completed during Phase 2, the reasoning behind this will be discussed in more detail in section 3.7.2.2 (p.95).

#### **3.7.1 Qualitative data analysis: Determining the analytical approach**

The analysis of qualitative data is a noted challenge, particularly for novice researchers (Kalman, 2019) as it involves "a process of reviewing, synthesizing

and interpreting data to describe and explain the phenomena or social worlds being studied” (Fossey et al., 2002, p.728).

Analysis begins at the point of data collection and is a continuous and iterative process. This is important as early findings inform further phases of research (Britten, 1995; Pope et al., 2000; Burnard et al., 2008). Qualitative research uses themes (or categories) to describe and explain social phenomena, with themes often generated inductively; that is, from the data itself (Pope et al., 2000). This is particularly useful in exploratory research where there is a lack of existing literature, as was the case with this study. As such, the researcher usually enters the study with few, if any, predetermined theoretical underpinnings (Vaughn et al., 1996), meaning theory is *created* rather than *tested*.

The most commonly referred to qualitative data analysis approaches are: qualitative content analysis, narrative analysis, discourse analysis, thematic analysis, grounded theory, and interpretive phenomenological analysis (Braun and Clarke, 2006).

I was able to discount some of these analytical approaches due to the fact that their implementation would lead to a very specific set of findings that would not be suitable for the type of exploratory research I was conducting at the time. For example, content analysis aims to establish patterns within the data and the frequency with which these appear (Ryan and Bernard, 2000) and is therefore more suited to research with a narrower view. Furthermore, both narrative and interpretive phenomenological analysis focus more on the participants themselves and the telling of their story, thus not allowing for broader conclusions to be developed (Riessman, 1993; Smith, 2003). Lastly, I was able to discount discourse analysis on the basis that this analytical approach specifically focuses on participants choice and use of language (Hodges et al., 2008) as opposed to developing understanding of a phenomenon.

After discounting the above forms of analysis, I turned my focus to explore both grounded theory and thematic analysis. It was my understanding that both approaches allow for the researcher to draw broader conclusions, which is perhaps more appropriate in exploratory research whereby the findings aim to pave the way for further research within a given field.

Grounded theory looks to generate theory from the data itself (Glaser and Strauss, 1967). It involves collecting data in small samples, generating hypotheses following their analysis, then applying these to other populations to see if there are commonalities. The researcher is expected to engage in an iterative cycle of data collection and analysis, adapting their data collection tools throughout, depending on what their findings might have shown (Lingard et al., 2008).

However, grounded theory is a complicated and time-consuming form of analysis and is rarely conducted correctly. Research articles are often described as having conducted “grounded theory” but what they report is instead some variation of thematic analysis. In addition, it is preferable for the researcher to know little about the population to be researched in order to eliminate as much bias as possible, something which my academic and professional background ruled out (McGhee et al., 2007; Chapman et al., 2015). Furthermore, grounded theory is specifically linked to a theory, whereas I wanted the freedom to explore any themes that might arise without trying to derive a singular theory from all of the responses collected (Braun and Clarke, 2006).

With this in mind, I gave thought to grounded theory as an analytical tool but ultimately decided that it would not be appropriate for my study. Firstly, the time constraints of this research project, along with recruitment difficulties, would have made the iterative process of collecting data, conducting data analysis, and then collecting more data based on these findings until theoretical saturation was achieved, unlikely (Bryman, 2012). Also, due to its complexity, grounded theory is known to be particularly challenging for novice researchers like myself, especially when not under the guidance of a social research expert (Braun and Clarke, 2019).

After engaging with literature on qualitative data analysis for novice researchers, as well as talking with my departmental cohort of PhD researchers, I was guided towards thematic analysis.

Braun and Clarke (2006) described thematic analysis as being particularly advantageous over other qualitative data analysis techniques. They refer to thematic analysis as “*a method for identifying, analysing and reporting patterns within data*” (p.79) and state that “*thematic analysis provides a flexible and*

*useful research tool, which can potentially provide a rich and detailed, yet complex account of data” (p.78).*

Thematic analysis is particularly flexible as it is not tied to a particular epistemological or theoretical perspective (Maguire and Delahunt, 2017). This characteristic also means that it does not require the researcher to have an extensive and detailed knowledge of interpretivist techniques (Nowell et al., 2017) making it particularly suitable for an inexperienced researcher (Braun and Clarke, 2006).

I hoped that using this method of data analysis would enable me to compare and contrast findings gathered from multiple participants as well as allow me to report any unexpected findings that may have arisen (King, 2004; Braun and Clarke, 2006).

With all the above in mind, I felt thematic analysis was the most appropriate for this study and best suited to myself at this stage in my research journey.

#### **3.7.1.1 The process of thematic analysis**

It is often acknowledged that qualitative researchers do not provide adequate descriptions of their data analysis process, which can lead to questions surrounding the quality of the research presented from a study (Mays and Pope, 1995). In an attempt to combat this, Braun and Clarke (2006. p.81-82) advised that “*Thematic analysis involves a number of choices [...] which need explicitly to be considered and discussed*”. Taking the importance of thorough explanation regarding the process of thematic analysis into account, I have been clear on the choices that I made regarding aspects of thematic analysis, such as how I defined my codes and what constituted a theme.

I conducted thematic analysis using the guidelines suggested by Braun and Clarke (2006). Since completion of my data analysis, more recent guidance has been published by these authors (Braun and Clarke, 2019; Braun and Clarke, 2021a). I will discuss this more recent guidance in more detail in section 3.7.1.2 (p.92), however, the original paper from 2006 described the procedure that was used to analyse the data collected during my study.

Table 1 shows the stages of thematic analysis according to Braun and Clarke (2006, p.87) including a brief description of how they should be implemented.

Phase	Description of the process
1. Familiarising yourself with your data	Transcribing data (if necessary), reading and re-reading the data, noting down initial ideas.
2. Generating initial codes	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code.
3. Searching for themes	Collating codes into potential themes, gathering all data relevant to each potential theme.
4. Reviewing themes	Checking if the themes work in relation to the coded extracts (level 1) and the entire data set (level 2), generating a thematic 'map' of the analysis.
5. Defining and naming themes	Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells, generating clear definitions and names for each theme.
6. Producing the report	The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis.

**Table 1 Phases of thematic analysis (Braun and Clarke, 2006, p.87)**

#### **3.7.1.1.1 Familiarising yourself with the data**

All data presented in this thesis was collected by me. This enabled me to become familiar with, and fully immersed in the data from the outset; a noted strength of qualitative research (Riessman, 1993; Braun and Clarke, 2006).

Audio recordings of all focus groups and interviews were collected using a Dictaphone and then transferred to a secure university central repository. I transcribed the recordings verbatim, before checking the accuracy by listening to the audio recording and re-reading the transcript concurrently. Once I had confirmed the accuracy, I again read each of the transcripts, taking note of my initial thoughts (Appendix 16). Transcripts were then transferred to the qualitative data management software, NVivo, Version 10 (Qualitative Data Analysis Software, QSR International Pty Ltd.) before the next stage of thematic analysis took place.

NVivo is not a data analysis tool but a data management software, which makes working with large qualitative data sets more manageable. The software does not determine a link between the data and theory, which is instead the role of the researcher (Pope et al., 2000; Burnard et al., 2008).

#### **3.7.1.1.2 Generating initial codes**

The second stage of thematic analysis involves producing a list of initial codes from the transcribed data. Braun and Clarke (2006, p.88) describe a code as “*a feature of the data that appears interesting to the analyst*”. Coding can be described as “*the most basic segment, or element, of the raw data or information that can be assessed in a meaningful way*” (Boyatzis, 1998, p.63).

Coding can be completed in a range of different ways. For example, in theoretical thematic analysis, the research questions or interview guide can be used to help generate an initial set of codes, which the rest of the data can then ‘fit’ into (Powell and Single, 1996; Maguire and Delahunt, 2017) This is also known as the ‘top down’ approach (Boyatzis, 1998). However, I felt this could restrict the range of data presented and could potentially discount any topics mentioned by students if they did not fit into the research question or interview guide directly.

I therefore decided to code the data openly in the hope that I would generate codes that did not simply reflect the questions asked during interview but were codes generated from the data itself (Braun and Clarke, 2006). This approach is known as inductive thematic analysis or the ‘bottom up’ approach (Maguire and Delahunt, 2017) and, as a result, I understood that I was required to read my transcripts, highlighting any comments that I found to be interesting, regardless of whether they answered the research questions of the study. Following this initial read through of the transcript, I re-read the text and tried to summarise what the short, highlighted sections meant to me using just a few words and these summaries ultimately became my codes. I developed my own codes in this way, instead of applying predetermined codes to the transcripts. This is known as ‘open coding’ (Maguire and Delahunt, 2017) and it allowed me the flexibility to include elements of my findings that I found to be interesting irrespective of their relevance to the research questions.

I organised the coded transcripts using the data management software NVivo, which allowed me to create, and keep track of, exhaustive lists of (as well as evidence to support) the codes generated from each transcript.

Some sections of data generated more than one code. For example, a student may have been discussing their apprehension in the build-up to dissection classes due to their perceived lack of experience. Within this, there are two

aspects that would have been coded for separately: “*Apprehension*” and “*Lack of experience*”.

I found coding my data to be challenging as I was concerned that if I stopped coding too soon then I would miss important characteristics of the data that could be relevant to the overall picture. As a result of this, I read through each of the transcripts on multiple occasions, adding any new codes to the list I had generated each time they became apparent to me. Once I had reached a point where I was not adding any new codes to a transcript, I felt I was at an appropriate stage to move on to theme development.

The process of coding can be lengthy and does not always reach an obvious end point whereby all possible codes have been determined. As such, it is down to the researcher’s judgment as to when coding should stop and the next stage of thematic analysis (searching for themes) should commence (Braun and Clarke, 2021b).

#### **3.7.1.1.3 Searching for themes**

Thematic analysis can also aim to construct themes from the data itself (Braun and Clarke, 2006) in a ‘bottom up’ approach (Maguire and Delahunt, 2017), or can make use of a pre-existing theoretical framework and apply it to the data in a ‘top down’ approach (Boyatzis, 1998). I opted to take the former approach as I had already done during the coding process. This decision was based on the fact that there were no fully established theories linked to the phenomenon of personalising body donors to medical students. Furthermore, as this was an exploratory study, I hoped that an inductive approach at this stage would allow for the reporting of findings that might not necessarily have surfaced, were I to have been bound by the limits of the research questions.

A lack of clear guidance as to what constitutes a theme and how a theme should be defined can cause confusion for a researcher at this stage of thematic analysis (DeSantis and Ugarriza, 2000). As a result, it is important that a researcher is explicit about what they understand to be a theme.

Due to the absence of literature that could assist novice researchers in how to appropriately determine what constituted a theme, I found this stage of thematic analysis a struggle. I did, however find the statement made by Braun and Clarke (2006, p.82) that a theme is a way of demonstrating “*some level of*

*patterned response or meaning*” a useful starting point for developing my own perception of how to conceptualise a theme. As such, it was my understanding that a theme can be identified by a consistent pattern of codes that link together across a data set, but it can also represent an insight into the phenomenon that may not have been mentioned by the majority of participants.

Once I had developed my understanding of what I would determine to be a theme, I needed to decide whether the themes I was going to produce would be either latent or semantic in nature. Semantic themes generally provide a description of what participants have said (Boyatzis, 1998), whereas latent themes require greater involvement of the researcher with an element of interpretation required to provide a more in-depth analysis of what participants have said (Braun and Clarke, 2006). As this study was exploratory, I felt it was most appropriate to develop latent themes which would hopefully allow a greater insight into the phenomenon being studied as opposed to simply reporting what participants had said without any further analysis or interpretation.

I began ‘searching for themes’ by printing off my list of codes and cutting them up in order to allow for a single code per piece of paper, (Braun and Clarke, 2006). This allowed me to mix and match different codes in order to help establish patterns within my data set that might be representative of a theme (Appendices 17 and 18).

At the same time as doing this, I kept a list of the different ways in which I grouped the codes, with initial names given for these groupings as themes. For example, I found there were several codes such as *“confidence”*, *“practical and emotional skills gained through dissection”* and *“future careers”* that I felt were clearly related (after revisiting the quotes associated with each code) and so I grouped them into an initial theme of *“professional skills”* along with other codes that I felt also fitted in to this theme (Appendix 19).

#### **3.7.1.1.4 Reviewing themes**

The themes generated in the previous stage were not the finalised themes, but initial themes which I could further refine as the iterative process of data analysis continued (Appendices 20 and 21).

This involved assessing whether themes generated during initial coding reflected the larger data set (Maguire and Delahunt, 2017). It was important to determine whether there was enough evidence (in the form of direct quotations from the transcripts) to support the themes that I had generated by reading through the data associated with each of the codes within the themes.

Revisiting the data in this way can help to determine any codes that may have initially been 'missed' and so for them to now be included – either within an already established theme or as a new theme altogether. For example, after revisiting the codes, in the example provided throughout appendices 16-21, I made note of how *"Influences of certain individuals"* could have been a theme, however, upon revisiting the data that was associated with the codes that I had placed together to form this theme, I determined that ultimately there was not enough evidence to support the inclusion of the theme in its own right.

Braun and Clarke (2006) urge researchers to err on the side of caution at this stage as re-coding data and generating new themes can become an infinite process. They therefore advise that when any new themes stop adding further insight to the findings, it is probably best practice to stop and move on to the next stage of analysis.

Another consideration at this stage was whether any of the themes proposed in the previous stage needed to be broken down in to more than one theme, or whether some of the themes should have been merged to create a new theme. This would result in the generation of subthemes, with overarching themes linking the subthemes together. For example, when revisiting the themes I had developed (shown in appendix 19), I determined that the quotations linked to "Attitudes towards the body in death" were not fully reflected in the name of this theme. Instead, I found that whilst considering the body in death, participants had also spoken about their attitudes towards the body in life. In light of this, I felt it was more appropriate to split the initial theme into two separate subthemes of *"Attitudes towards the body in death"* and *"Attitudes towards the body in life"*. This would then allow for more accurate representation of what had been discussed during the interviews.

I carried out the above processes for all initially suggested themes and ultimately ended up with one or two main themes for each set of data which were derived from a larger group of subthemes, whereby subthemes could fall

into more than one overarching theme. As a result of this stage of reviewing themes, I generated a thematic map for each data set. Although these would not be the final representations of my thinking (as there was still the following stage of defining and naming themes to be completed), they allowed me to create a visualisation of my interpretation of the data in order to help me make sense of the large amounts of data I had collected.

#### **3.7.1.1.5 Defining and naming themes**

At this stage, themes are generally defined and refined so it can be determined what aspect of the data each theme captures. It should become clear what is interesting about the themes and why (Braun and Clarke, 2006). I reviewed the coded data extracts for each theme so that I could report the relevant quotations for discussion in my findings chapters, allowing me to tell a story. This step is important in ensuring that themes are not simply provided as paraphrasing of what participants have said, with no interpretation, but that the essence of the theme is reported. Braun and Clarke (2006) suggest that this can be achieved describing the scope of a theme within a couple of sentences. I took this guidance and if I found that a theme could not be described in this way then I sought to either redefine the theme or develop appropriate subthemes that would instead interlink to form an overarching theme.

Although this is considered to be an isolated stage of thematic analysis, I found myself constantly defining, naming, and renaming themes as I became more familiar with and invested in the data sets.

#### **3.7.1.1.6 Producing the report**

The purpose of the report is to tell the complicated story of the data in a way which convinces the reader of the quality of your analysis (Braun and Clarke, 2006), achieved by presenting themes with the relevant quotations to support their generation. This is the stage at which the researcher's interpretation of the data becomes important, as this analysis needs to be described to the reader and how it relates to the research question(s) as this provides evidence that quality thematic analysis has been conducted (Braun and Clarke, 2006). This is the final step that a researcher conducting thematic analysis can take to increase the trustworthiness of the findings of a study.

In developing the report of my findings, I have provided numerous quotes relating to each of the subthemes that formed the overarching themes. I have sandwiched these quotes in between a written account of my interpretations of participants' comments and how they relate to themes as well as to the research questions.

### **3.7.1.2 Development of a deeper understanding of thematic analysis**

When I first read the article published by Braun and Clarke (2006), which was designed to provide guidance for those new to thematic analysis, I was under the impression that thematic analysis was a single method that could only be applied in one way. Indeed, it had originally been presented by Boyatzis (1998) as an approach that could 'bridge the gap' between quantitative and qualitative research (Braun and Clarke, 2019). However, since completion of data collection and analysis, Braun and Clarke have released further literature whereby they describe how thematic analysis is instead a family of different methods of data analysis and there are multiple ways in which it can be carried out (Braun and Clarke, 2019; Braun and Clarke, 2021b; Braun and Clarke, 2021a). Braun and Clarke have reflected on how their initial description of thematic analysis in 2006 might not have been as comprehensive as they had at first perceived (Braun and Clarke, 2019).

Braun and Clarke (2019) recognised that perhaps their 2006 description had led to individuals treating thematic analysis as a step-by-step process that would need to be completed. They shared their concern that this had led to researchers displaying a lack of reflexivity which would allow, for example, the context of the research to influence the way in which data are organised into codes and themes. There is concern that researchers construct themes and then see these as unchanging and the endpoint of a piece of research (Braun and Clarke, 2019). I will admit, with my positivist roots when entering this study, I felt more comfortable with the concept of an endpoint, rather than research as a more iterative process that can continue indefinitely. This may ultimately have resulted in underdeveloped themes due to my inexperience working within the qualitative paradigm, with the need to continually review and reorganise my codes and themes. On reflection, I feel I was instead subconsciously seeking an endpoint rather than allowing myself to become fully immersed in the iterative cycle of analysis that is required to realise fully developed themes.

I was unfamiliar with the role that context can play in the type of data collected in a qualitative study and its influence on the themes ultimately generated. The same study carried out in a different place, with different students, all of whom have different life experiences, could lead to the generation of very different themes. On reflection, I can see that this mindset may have led me to making bold, generalising statements about what the findings of this study might mean regarding the phenomena of personalising body donors outside the context of this piece of research.

I am not the only one to have made mistakes regarding the procedure of thematic analysis. Numerous authors of articles within psychology research report to have used thematic analysis, including Madill and Gough (2008), Sparkes and Smith (2009) and Levitt et al. (2017). However, according to Braun and Clarke (2019) these authors have all misinterpreted what was detailed in their original 2006 article regarding thematic analysis.

In light of the confusion that seemed to stem from their original article, Braun and Clarke (2019) have provided updated guidance on their approach to thematic analysis and now define their approach as being “*reflexive thematic analysis*”. They propose that thematic analysis shares commonalities with other approaches that also seek to identify ‘patterns’ in the data (for example, grounded theory and content analysis), but still deserves to be considered as a family of methods of analysis in its own right (Braun and Clarke, 2021a).

The type of thematic analysis employed will typically be guided by the philosophical assumptions of the researcher and will in turn determine the way in which codes are defined and themes are constructed. Although not established at the time that I was conducting my data analysis, there have since been three distinct categories of thematic analysis recognised by Braun and Clarke (2021a):

- Coding reliability thematic analysis – Themes are typically determined early on, or prior to analysis commencing and there is a reliance on multiple coders reaching an agreeance to measure coding quality. This results in a more objective approach.
- Codebook thematic analysis – The use of a coding framework for developing analysis however, agreeance between multiple coders is not

used as a measure of coding quality. Themes may still be generated in the early stages, however, there is more flexibility in this approach that allows for inductive data analysis and so the development of new or more refined themes.

- Reflexive thematic analysis – Encompasses approaches to thematic analysis that embrace the values and subjectivity of qualitative research. A research team is not deemed necessary as a measure of quality. Coding is open without the use of a framework and the development of themes is an iterative process.

At the time of conducting my analysis, I was under the impression that I had successfully completed what Braun and Clarke now refer to as “*reflexive thematic analysis*”. However, now that I am in a more knowledgeable position, I can appreciate that what I instead conducted was a mixture of “*codebook thematic analysis*” and “*reflexive thematic analysis*”. My initial coding of an interview from each data set was completed openly, and so in line with “*reflexive thematic analysis*”. However, instead of starting a new code list for every interview within each data set, I simply used the codes already developed from the first interview and added any new ones I came across to this list. At the time of conducting this study, I was unaware of the important role the researcher plays in the generation of themes. This was perhaps due to my own misunderstanding of the way in which Braun and Clarke (2006) referred to a process of “*searching for themes*”, which I took to imply that the themes pre-existed in the data and were simply waiting to be ‘found’. Following the updated work by Braun and Clarke (2021a) I now understand that it is the role of the researcher to generate themes, emphasising the interpretive nature of “*reflexive thematic analysis*”.

I feel that my misunderstanding of this may have prevented me from being able to report an in-depth interpretation of the data, which could in turn leave other researchers questioning the quality of the findings I have presented. If myself, or another more experienced qualitative researcher, were to analyse the data collected as part of this study again, ensuring that the procedure of “*reflexive thematic analysis*” was followed, there is the possibility that *why* participants held certain views on this phenomenon could be explored in greater depth.

Whilst my updated understanding of thematic analysis does not change what is written in the following chapters, I felt it was important to acknowledge my developing knowledge of this type of research, which is contributing towards developing my skills and knowledge as I transition to working within a qualitative paradigm.

### **3.7.2 Descriptive statistics**

#### **3.7.2.1 Rationale for conducting descriptive statistics**

Extensive statistical analysis was not an objective of this research and as such I was confident that simple descriptive statistics would be sufficient.

I decided to calculate descriptive statistics on the information collected from donors during Phase 2 of this research. It is important for me to acknowledge that descriptive statistics do not align with the constructivist-interpretivist paradigm that I had decided to work within for this research. However, I do feel that their use was justified given that the sole reason for collecting the donor information was to be able to provide it to students in Phase 3 of this project. Students in the pilot study and Phase 1 had indicated that they did not feel it was appropriate to receive case studies of individual donors, but instead to receive more generic information.

#### **3.7.2.2 Procedure for descriptive statistics**

The majority of donor interview questions only warranted short answers. For example, "*What has been your main occupation in life?*" and "*Do you mind me asking your age?*". These answers were entered in to an excel spreadsheet and a tally was kept for answers given to each question. From this, a percentage was then calculated for each answer set.

The only question in Phase 2 where I chose not to report the results as a frequency was "*Is there anything you would like to say to medical students and would be willing to have passed on to them when they start medical school?*". The responses to this question were instead analysed using thematic analysis.

On reflection, the thematic analysis conducted on one question was perhaps not overly relevant to the study presented here. When students were provided with the messages during the presentation, they were not informed what theme the message had been assigned to and were simply provided with the

quotation. It is only in the pages of this thesis that I have explored the theme of these messages. Perhaps this was a mixture of my own personal interest along with an awareness that there was a gap in the literature reporting on any form of donor messages to students and the themes of these. I grouped the messages into themes as I felt this was the most appropriate way to report them in my thesis. However, whether this is relevant to the context of this particular study, I am no longer certain. Perhaps I should have explored this aspect of donor interviews in more depth as what I have reported in relation to this in Phase 2 is in a very preliminary state.

### **3.8 Ethical considerations**

Four different ethical approvals were granted by the School of Medicine Research Ethics Committee.

The ethical approval references were:

- Pilot study: MREC15-082
- Phase 1: MREC15-082 Amd 1
- Phase 2: MREC15-124
- Phase 3: MREC17-047

This study required consideration of a variety of different ethical issues. Below is explanation of how I accounted for these.

#### **3.8.1 Discussion of a sensitive topic**

The discussion of death and dying has long been taboo, particularly within Western society where individuals are said to be in denial regarding their own mortality (Kellehear, 1984; Callahan, 2000). This has led to conversations surrounding death being limited to conversations within medical settings (Wildfeuer et al., 2015), as opposed to a subject we are more comfortable discussing in normal conversation. It is interesting that people are not willing to talk about their own death, given the frequently cited violent and unexpected deaths that are reported through the media (Seymour et al., 2010), meaning the topic of death is not completely ignored.

In an attempt to address the discomfort and reluctance to discuss death and dying, 'Death Cafés' were introduced into the UK in 2011 by Jon Underwood.

This concept originated in Switzerland and was developed in order to encourage conversation surrounding death and dying (Mitchell et al., 2021). Although initially intended for members of the public to be able to come together and discuss this topic, there is increasing popularity about introducing this concept into medical schools, the University of Leeds included, to encourage such discussions amongst medical students.

In addition, some medical schools offer courses that focus on the topics of death and dying, allowing students to become more comfortable with these topics and become more informed about how to approach conversations, and the experience, of death and dying with others (Wildfeuer et al., 2015; Pitimson, 2021). Despite this, an individual's perception of death and their personal experiences of it will vary and undoubtedly impact on the way in which they might respond when asked questions directly relating to this topic.

Interestingly, there is a suggestion that in research when attitudes towards death are the main focus of the research, studies tend to adopt a more objective, quantitative approach as opposed to engaging in discussion with participants to collect qualitative information as part of subjectivist studies (Mitchell et al., 2021). This has led to a lack of literature, as highlighted by Borgstrom and Ellis (2017), exploring the different methodologies that can be employed when approaching research of this kind, which is unhelpful for novice researchers in this field.

As part of this study, I was asking students to discuss their emotions and experiences during what could have been their first encounter with death. Students might have developed coping mechanisms such as emotional detachment which they employ whilst in the DR in order to protect themselves. I was therefore aware that asking students to avoid doing this and enter into active conversation about death and dying might cause some of them to become distressed and upset. Therefore, students were given details of the student counselling centre at the university, whom they could contact if they felt they required professional emotional and psychological support. In addition to this, I felt it was important to build a rapport with participants as I felt this could help them to feel more comfortable when discussing these sensitive topics (Dickson-Swift et al., 2006). It could also be argued that because participation in this study was voluntary, if students did not feel at all comfortable discussing

death and dying, then they were not obliged to take part and so did not need to respond to the study invitation.

Students were also able to terminate the discussion at any point they wished in all phases of this research.

Likewise, I asked donors to discuss an act they will only be able to complete once they have passed away, which could also have been distressing for some individuals. Prior to commencing their interview, donors were asked to ensure they had a friend or family member that could offer them support if they were to become upset either during or following the interview. If the donor was to become upset during the interview itself, they had the option to stop immediately. It is worth considering that individuals who opt to donate their bodies for anatomical education have given it prior consideration and have done so by providing fully informed consent. As such, these donors have willingly chosen to consider their own mortality and have made a decision about what they would like to do with their bodies when they do eventually die. The questions that were to be asked in interview would, for the most part, be covering themes that the donors will have likely given thought to themselves prior to filling out the donation application forms. As these individuals had chosen to participate in this study with full knowledge as to what it was regarding, I did not anticipate that the perceived sensitive nature of this topic should pose a problem.

No participants (students or donors) became emotionally distressed at any stage during data collection, meaning it was not necessary to terminate any discussions.

After I had begun engaging in conversations surrounding death and dying with students and donors, I came across an interesting article by Visser (2017), who highlighted that often there is little consideration given to the impact on the researcher on the emotive nature of discussing this sensitive topic. In all honesty, this is not something I had even considered for myself prior to entering into this research. Whilst I did not become overly emotionally involved in the donors or student's stories, I did find myself becoming more protective over donors as time went on and that has continued until the present day. I am keen to find a voice for the donors and to ensure that they are treated with the

respect and dignity that they have entrusted to those benefitting from their donation.

### **3.8.2 Withdrawal from the study**

When conducting any research, it is necessary to respect the wishes of participants, especially when it relates to the withdrawal of data they have provided.

For medical students, this withdrawal period was seven days following completion of the interview. After this time, the recording had been anonymised and data analysis was taking place. For donors, the period of withdrawal was much longer. The final date for donors to be able to withdraw their data from this study was 1<sup>st</sup> April 2017. It was made clear to donors that once this information had been provided to medical students, following this date, it could not be taken back.

Withdrawal from a focus group was more complex. Although a student could terminate their involvement at any point (including during the discussion), their data until that point would be retained, due to the interactive nature of a focus group. This was made clear to students in the study information and was reiterated at the start of each focus group discussion.

No participants withdrew at any stage of this study.

### **3.8.3 Informed consent**

For accurate, subsequent analysis, I audio recorded all conversations that took place. This was made clear in the participant information sheets for both medical students and donors.

As most of the interaction with medical students took place face-to-face, I was able to obtain written consent to audio record the focus group/interview in person. One medical student opted to participate in a telephone interview, so they were emailed a copy of the consent form which they printed, signed, scanned and sent back to myself prior to the interview taking place.

Consent forms were also sent to donors. Individuals wishing to participate in this research returned the signed study consent form with the bequest documentation, posting them to the Anatomy Facilities manager at the University of Leeds, who passed them on to myself. Donors were required to

give permission for the information they provided during the interview to be passed on to medical students in an anonymised format.

#### **3.8.4 Anonymity and confidentiality**

All individuals who took part in this study were assured anonymity. For example, students and donors had their name changed to a pseudonym (Gates and Statham, 2013), and their name was not linked to any materials arising from the data collected. Additionally, any names of family, peers or teaching staff mentioned in the discussions were also changed to a pseudonym.

Unlike anonymity, it was not possible to assure participants complete confidentiality. In terms of student focus groups and interviews, students were made fully aware that anonymised transcripts would be shared with others (i.e. supervisors, postgraduate tutor) and that anonymised quotes may be used in conference posters or presentations, as well as in any publications that may arise from this research. This was also true for the data gathered during donor interviews; however, donors were aware that the purpose of conducting interviews with themselves was to collect data that would, in an anonymised format, be disclosed to medical students.

#### **3.8.5 Researcher in a position of authority**

Working as an anatomy demonstrator, I was in a perceived position of authority to students. Students were not coerced in to participating, and recruitment materials were circulated amongst students via a neutral **third** party.

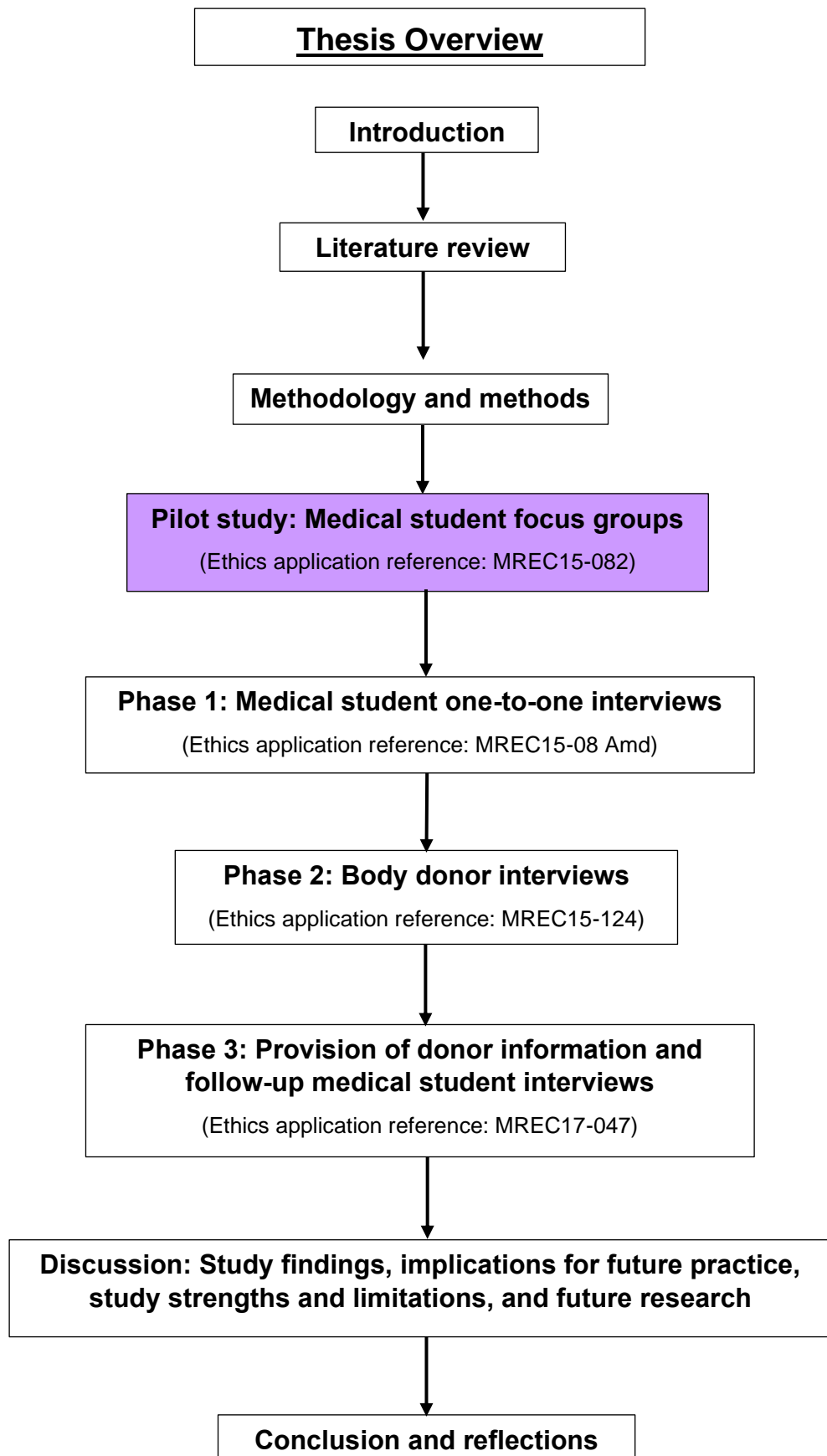
Additionally, I did not discuss my research with students whilst carrying out demonstrating duties. Students were reassured that whether or not they decided to participate in my research would not affect the teaching they received or any curricular assessments.

All focus groups and interviews were facilitated by myself, which I did not perceive to be an issue. Students often spoke freely around me in the DR and generally seem very comfortable in my company. I therefore made the decision that it would not be necessary for a neutral party to facilitate focus group or interview discussions. Furthermore, I determined it to be more beneficial to run these discussions myself as I had the advantage of personal experiences working in the DR and with donors.

I can appreciate that in other circumstances, it might not be appropriate for the lead researcher to be the one to conduct interviews and focus groups with the students and donors. Perhaps students might not feel as comfortable opening up to a researcher who was in a greater position of authority over them (for example a member of academic staff who, unlike myself, is responsible for delivering the curriculum and marking student assessments). In this instance, it might be more suitable to use a neutral third party to conduct the focus group or interview. This could however have its own drawbacks. If the neutral interviewer is inexperienced in the subject matter, then they might not be aware of what follow-up questions might be appropriate or useful to ask of participants. Furthermore, if the interviewer is unknown (specifically to students), then it could prevent a rapport being established, which can be problematic, specifically in research exploring such a sensitive subject with the reliance on students trusting the interviewer and being prepared to open up to them.

### **3.9 Chapter summary**

This chapter has discussed how I adopted the constructivist-interpretivist paradigm for this research. I described how this allowed me to investigate this topic without the need for a predetermined theoretical framework to guide data analysis. I outlined the research design, including the rationale for student and donor recruitment and the approach to data collection and analysis. I also considered the trustworthiness of qualitative enquiry and provided an initial reflection on how my misunderstanding of the process of thematic analysis may have resulted in findings that might not be deemed of sufficiently high quality to other researchers. With hindsight, I am aware that a more rigorous approach to the research process may have resulted in findings of even greater value. However, this is likely to be a shared view among novice researchers who are still on a steep learning curve about research as they are undertaking their doctoral studies. I believe that my study and subsequent learning and reflection have now put me in a good position to undertake further research. Finally, I considered the ethical considerations relevant to designing and conducting this study.



## Chapter 4 **Pilot study: Medical student focus groups**

This chapter describes a focus group pilot study I conducted with first-year, second year and intercalating medical students. There will be discussion as to how this pilot study led to a change of data collection method for Phases 1 and 3. This chapter will finish with a summary of the findings gathered.

### **4.1 Study aims**

This study was originally designed to explore my first research question:

***“How do medical students at different stages of the dissection course feel in relation to learning more about body donors?”***

In order to address this, I hoped to develop an understanding of how medical students feel about:

- a) Working with body donors in the DR, and;
- b) The potential of learning more about body donors who are currently completely anonymous.

At the outset, this study was intended to form what is referred to as ‘Phase 1’ in the remaining chapters of this thesis. As described in *“Methodology and Methods”* (Chapter 3), I had initially planned to conduct multiple focus groups for each year group of students invited to participate. My plan was to determine whether students would like to receive donor information, before establishing what information they would like to learn. I hoped this would mean I was better informed to construct an interview guide for use with donors, before recruiting and interviewing prospective donors during Phase 2, to ensure I gathered the information that would be of interest to students.

### **4.2 Recruitment of medical students**

Students were invited to take part in this study in May 2016 and ultimately, all students who responded to the study invite took part in a focus group (Table 2). However, I soon established that recruiting enough students to enable me to conduct multiple focus groups was going to prove difficult. Students were slow to respond to the multiple recruitment invitations (in line with my ethical approval) that they were sent.

Student Year Group	Number of students invited to participate (n)	Number of students that responded to invite (n)	Response rate (%)
1 <sup>st</sup> Year	236	6	2.5
2 <sup>nd</sup> Year	248	4	1.6
Intercalators	32	5	15.6

**Table 2 Numeric information of student response rate to participation in this focus group study.**

It was not clear why recruitment of adequate student numbers for this study proved so difficult, although I am able to speculate as to why this might have been. It is possible be that students already felt overwhelmed with their very busy schedules and did not feel they would be able to give any of their limited free time to this study. Furthermore, students receive a lot of emails (messages from staff, module specific information, recruitment for studies, invitations to multiple events) and perhaps the invite to my study simply became lost amongst these. Another possibility might be that some students did not feel comfortable discussing this topic in front of their peers in a group situation and so chose not to respond to the study invite. However, without asking students directly, it is not possible to give a definitive reason.

As it soon became clear I would struggle to recruit enough students for this study to form what I had planned to be “Phase 1”, I made the decision to change this into a smaller scale pilot study. This change also resulted in me deciding to alter my methodology from focus groups to one-to-one interviews, for both Phases 1 and 3, in the hope that it would be easier to recruit enough students in order to conduct multiple interviews within each year group.

Although it had not been an intended component of this research, I feel this pilot study was important. It highlighted the need for me to make changes to the research design and methods in order to develop a research approach that I hoped would be more successful. Furthermore, it also provided me with the opportunity to refine an interview guide that I had designed for use in Phase 1.

One focus group was conducted per year group, resulting in a total of three focus groups.

### 4.3 Interview guide design

Only a limited number of authors have investigated this topic (especially within a qualitative paradigm), meaning there was no 'ready-made' tried and tested interview guide that I could utilise. As a result of this, I looked to studies of a similar nature to this pilot study, also investigating medical student relationships with donors. However, these studies frequently used a self-administered questionnaire largely weighted towards a quantitative line of enquiry, rather than reporting a qualitative interview guide (Bohl et al., 2011; Bohl et al., 2013; Williams et al., 2014).

Consequently, I drew inspiration from studies primarily investigating student attitudes towards dissection. Though this also proved problematic, as these types of studies rarely included the entire set, or even an example of, the questions that had been used (Horne et al., 1990; Nnodim, 1996; Snelling et al., 2003).

Subsequently, I discovered that some of the more recent literature, despite using a quantitative paradigm, did include question examples (Quince et al., 2011; Bernhardt et al., 2012; Bohl et al., 2013; Williams et al., 2014) which I could use to help shape my interview guide. Additionally, some qualitative studies included examples of questions designed to explore student attitudes towards dissection and these also proved helpful in determining what questions might be useful to ask students (Netterstrøm and Kayser, 2008; Lamdin et al., 2012; Tseng and Lin, 2016). I found this approach to be particularly valuable in the development of the pilot study interview guide (Figure 1).

- 
1. *How do you feel about dissection?*
  2. *How do you feel about working with a cadaver?*
  3. *What do you know about the body donation procedure?*
  4. *Why do you think people donate their bodies for medical education?*
  5. *Would you be interested to learn more about those who have chosen to donate their bodies for medical education?*
  6. *If you are (not) interested in learning more about body donors, why is this?*
  7. *What information about people who donate their bodies for medical education would you like to know?*
  8. *In what form would you like to receive information about donors?*
-

- 
9. *How do you think receiving donor information will make medical students feel?*
  10. *At what point during the medical degree do you think it is appropriate to provide donor information for students?*
  11. *Is there anything else that you would like to add to any of the points made?*
- 

### **Figure 1 Focus group pilot study interview guide**

#### **4.4 Summary of Findings**

First and foremost, this study revealed that medical students are willing, and interested, to receive more information about donors than is currently available to them. Students considered at length the type of information they wished to learn about donors, and it soon became clear that there were differing opinions on the type of information that students were interested to learn.

First-year students with the least dissection experience were interested in learning about donors as people including: life history, hobbies, occupation, family, and reasons for making their donation. Conversely, intercalating students who had the most dissection experience were more focussed on learning donors' medical history. Second-year students were divided in their opinions, with some interested in the personhood of donors and others wishing only to learn medical history. This could suggest a shift in the way that students view donors as the dissection course progresses, although this cannot be said with certainty.

As a result of these findings, I decided to add a fourth time point to Phase 1 of this study. This was recruitment prior to any exposure to the DR or a donor. I planned to carry out the same interview with the same cohort of first-year students prior to, as well as following, one term of dissection classes. I hoped this would allow me to determine if there was also a change in student attitudes over the initial stages of the dissection course.

In light of the topics discussed by students, four questions were added to the interview guide for use during Phase 1. These were:

- 1) *“What skills do you think dissection encourages medical students to develop?”*
- 2) *“Do/did you ever think about the donors as a once living person? What do/did you think about?”*

3) *“Do/did you ever think about the donors’ family?”* and

4) *“How did you/do you think you will feel once you had completed the dissection course, compared to at the beginning of the course?”*

These were topics that students spoke about on more than one occasion during the three focus groups, despite the fact there were no questions in the interview guide that actively encouraged discussion of these topics. It therefore seemed logical to add these questions to the interview guide as it seemed to be a natural course for the conversation to take when the students were deep in discussion, which may not have occurred during one-to-one interviews.

Aside from recruitment difficulties which led to the implementation of this focus group pilot study, one limitation that I observed whilst conducting focus groups, was peer influence. Having their peers present whilst discussing what could be perceived by some students to be a particularly sensitive topic did appear to affect the responses of some students within each group. For example, one second-year student spoke about wanting to learn more about the donor as a person, but when challenged by one of their peers on why this type of information might be necessary, the student changed their mind potentially to ‘fit in’ with the opinions of the rest of the group. This highlights how peer influence can be a pitfall of the focus group methodology (Sharts-Hopko, 2001).

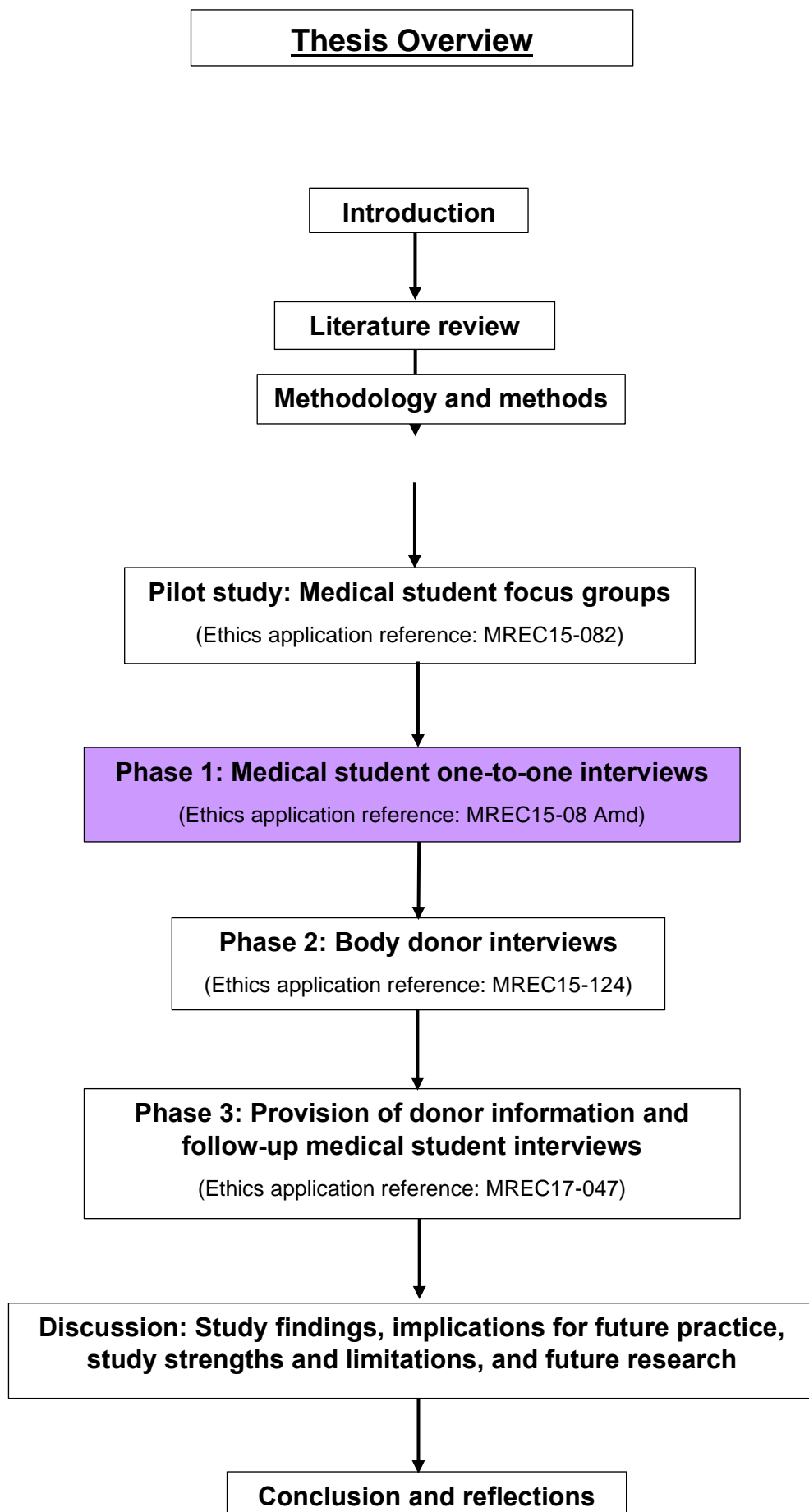
My observation of this limitation first-hand during the pilot study, coupled with personal concerns that students might not feel comfortable discussing this topic in a group situation, provided a further driving force to change the intended method of data collection. I hoped that changing from focus groups to one-to-one interviews might prove to be more advantageous for this study in elucidating students’ real feelings concerning personalisation of donors.

Particular benefits of conducting this pilot study were: A) it highlighted the need to change the method used for data collection from focus groups to one-to-one interviews, B) it provided the opportunity to refine the interview guide which could then be used in medical student one-to-one interviews (Phase 1), and C) it showed that students *do* wish to learn more about donors, including an insight as to what type of information they would be interested in. Interestingly, the use of focus groups as part of a pilot study has not, to my knowledge, formed a part

of any study that has investigated relationships between medical students and body donors.

#### **4.5 Chapter summary**

In this chapter I discussed how and why a pilot study became incorporated into this research. Additionally, I reported how this gave me the opportunity to develop and refine an interview guide to be used in Phase 1 of this study. I also discovered that students seem to be willing to learn about donors, including what type of information would be of interest to them, and how this appeared to be influenced by their level of exposure to the DR and donors.



## Chapter 5 **Phase 1: Do medical students wish to learn more about body donors?**

In this chapter I report and discuss the data gathered from one-to-one interviews with medical students at different time points of the medical degree. I describe how the purpose of these interviews was to explore, with students, questions regarding their attitudes towards learning more about donors and what information, if any, they might like to learn. This chapter will conclude with discussion as to how the findings of Phase 1 helped to shape the research presented in subsequent chapters.

### **5.1 Phase 1 study aims**

Through the completion of one-to-one interviews with medical students, Phase 1 was designed to explore my first research question:

***“How do medical students at different stages of the dissection course feel in relation to learning more about body donors?”***

The question was designed to help develop an understanding of how medical students feel about working with donors in the DR, including their interest in learning more about donors who are currently anonymous to them. As part of this exploration, I was interested to learn what type of information, if any, students would like to learn about donors.

This study was originally intended to be conducted using focus groups. However as described in the previous chapter, due to recruitment difficulties, I decided to change my data collection method to one-to-one interviews.

### **5.2 Methods**

#### **5.2.1 Recruitment of Medical students**

I decided to conduct interviews at four different stages of the medical degree:

Stage 1: Prior to any exposure to the DR (First-years)

Stage 2: Following one term of dissection experience (First-years)

Stage 3: During the second year of dissection (Second years)

Stage 4: During the intercalating BSc Clinical Anatomy programme.

Students were invited to participate in this study via an invitation posted on the VLE. During the 2016-2017 academic year, a total of 233 first-year medical students, 243 second-year medical students and 30 intercalating students received this invite.

First-year students were invited to participate in October 2016 (Stage 1). It was important to conduct these interviews early in the academic year, to ensure they were completed *before* students entered the DR as part of their introductory session (held in early November 2016). Following one term of dissection experience, a second round of interviews with the same cohort of first-year students were completed in late April/early May 2017 (Stage 2).

Second-year students were not recruited until January 2017 (Stage 3). This was to ensure that students had completed one term of dissection as second-year students. If Stage 3 had been completed at the beginning of the 2016-2017 academic year, students would have had a very similar level of dissection experience to the Stage 2 participants. Intercalators were recruited and interviewed in November 2016 (Stage 4), this meant they were midway through the advanced head and neck dissections.

### 5.2.2 Interview guide design

The interview guide used in Phase 1 was developed for use in, and adjusted during, the pilot study (Figure 2). This refined interview guide was used during all four Stages of the Phase 1 study.

- 
1. *How do you feel about (starting) dissection?*
  2. *What skills do you think dissection encourages medical students to develop?*
  3. *How do you feel about working with a cadaver?*
  4. *Do/did you ever think about the donors as a once living person?*
    - i. *What do/did you think about?*
  5. *Do/did you ever think about the donors' family?*
  6. *How much do you know about the body donation procedure?*
  7. *Why do you think people donate their bodies for medical education?*
  8. *Would you be interested to learn more about those who have chosen to donate their bodies for medical education?*
  9. *If you are (not) interested in learning more about body donors, why is this?*
  10. *What information about people who donate their bodies for medical education would you like to know?*
-

- 
11. *In what format would you like to receive information about donors?*
  12. *How do you think receiving donor information will make medical students feel?*
  13. *At what point during the medical degree do you think it is appropriate to provide donor information for students?*
  14. *How did you/do you think you will feel once you had completed the dissection course, compared to at the beginning of the course?*
- 

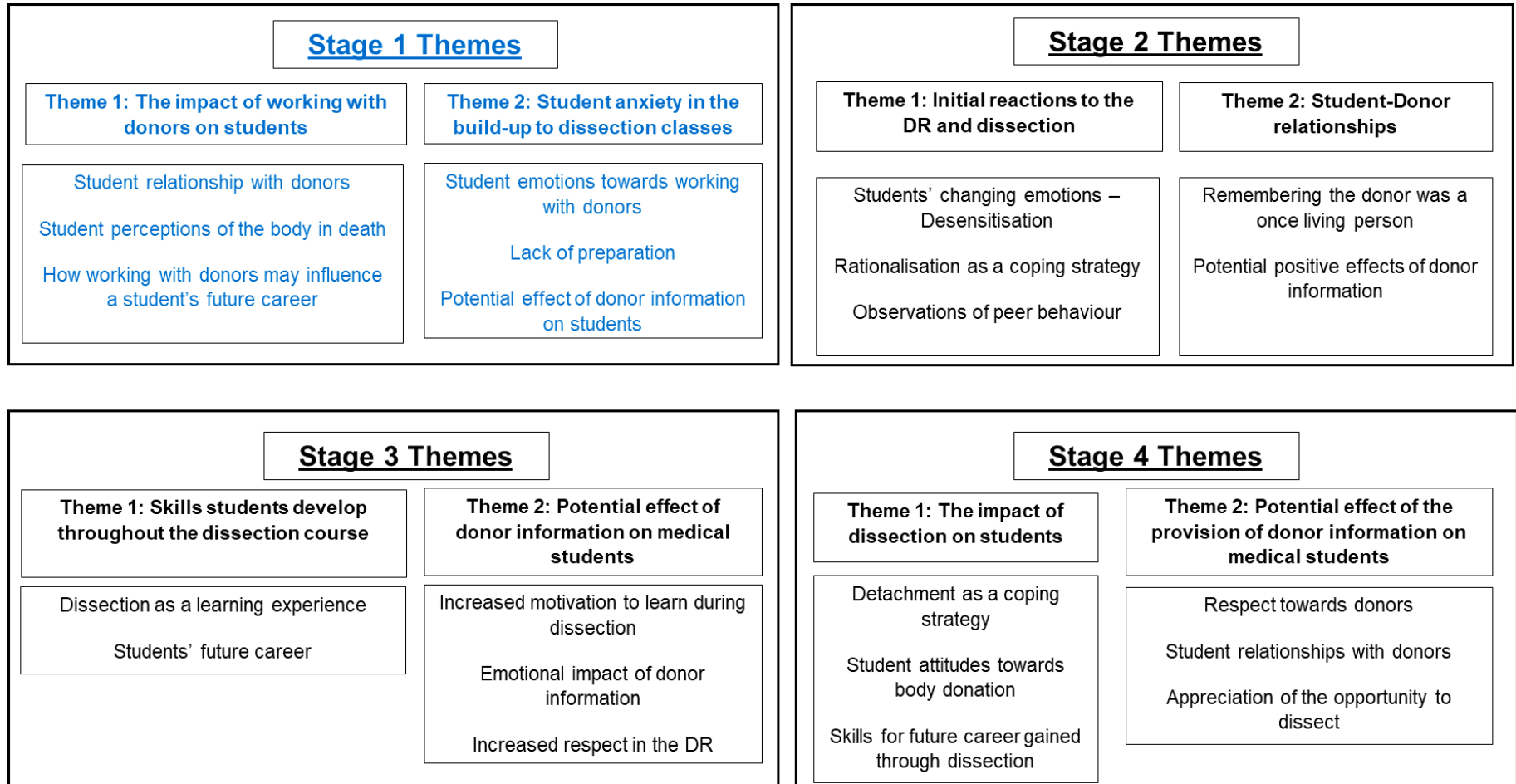
**Figure 2 Medical student one-to-one Phase 1 interview guide. Questions highlighted in blue were added as a result of the pilot study.**

### **5.3 Findings: Stage 1**

233 first-year medical students were invited to participate in this study. Nine students (3.9%) responded and completed an interview prior to entering the DR. Following thematic analysis of these Stage 1 interviews, I established two main themes: *“The impact of working with donors on students”* and *“Student anxiety in the build-up to dissection classes”* (Figure 3).

Quotations that have been made more concise for the purposes of reporting may have had sections removed. This is indicated by use of ellipses throughout.

All quotes provided in Phase 1 will be followed by the Stage number as well as a participant number. The same participant numbers will be used to report the findings from Stages 1 and 2, as the same group of students took part in these interviews. Abbreviations will be used for conciseness (i.e., Stage 1 Participant 1 = S1 P1, Stage 3 Participant 10 = S3 P10 and so on).



**Figure 3 Thematic map showing generation of themes following thematic analysis of all Phase 1 interview transcripts. Stage 1 themes have been highlighted in blue.**

### 5.3.1 Theme 1: The impact of working with donors on students

This theme is composed of three subthemes: “*Student relationship with donors*”, “*Student perceptions of the body in death*”, and “*How working with donors may influence a student’s future career*”.

#### 5.3.1.1 Student relationship with donors

Students speculated about personal relationships they might form in the DR. Some considered how they might feel initially:

*“I will feel nervous because you’re seeing a dead person and you’re like going to be forming a sort of relationship (?) with them at the same time”*  
– **S1 P6**

Another participant considered how they might feel towards donors at the end of the dissection course after spending a significant amount of time with the donor:

*“I feel like after that process, you’ve kind of built a relationship [...] with your cadaver, because you’ve been with the same cadaver for so long [...] you build a relationship with it”* – **S1 P4**

Other individuals contemplated not only how spending time with the donor might cause a relationship to develop, but also how receiving donor information might prevent students from objectifying the donor. They spoke of how this could, in turn, cause increased levels of respect and appreciation to be shown towards donors:

*“I think it kind of helps you form a kind of relationship with the cadaver you’re dissecting, and it makes you think of the cadaver kind of more of as a person instead of like a slab of meat that you’re just cutting up. That kind of reinforces, you know, respect for the cadaver, even though it’s not a living person anymore”* – **S1 P3**

*“I think it’s nice to get a bit of background about them, so you actually can relate to them, they actually were human, they did have a life before this, and it’s so nice of them to donate their body”* – **S1 P6**

It is interesting to note that even prior to entering the DR, these students appear to be able to appreciate that the donor was a living person, rather than actively

objectifying them. It is interesting that these participants believe the provision of donor information could encourage students to recognise the donors' humanity in this way.

However, it is possible that by simply asking students to consider what information about donors they might be interested to learn prompted them to reflect on the humanity of donors. This raises questions as to whether collecting and providing donor information is essential, or whether simply asking students to think about the donors as once living people could raise levels of appreciation and respect shown towards them.

Conversely, instead of considering how they might be able to relate to donors, other students spoke about how they were emotionally preparing themselves for their time in the DR by hoping to be able to detach from donors:

*"I think you feel more detached at the end of it. I think you have to be, otherwise you will just implode emotionally by the end of the experience."*

**- S1 P1**

*"I don't think I'd want to think of them as someone who was having a nice time in the park with their friends or round at a meal, because I'd like to distance myself from cutting up a body. I think that probably links to surgeons putting drapes over people in the surgery. Dehumanise them, so you can actually do your job"* - **S1 P2**

Both these students appear to want to detach from donors to protect their own emotions. They seem certain that they will need to maintain what they deem to be a necessary emotional distance from donors in order to carry out dissection. Furthermore, the second student went on to talk about how achieving a level of detachment might be a useful self-protection mechanism in order to function as a doctor.

Being able to detach from donors was frequently discussed. One student even appeared to speak with pride about their ability to detach, suggesting they had already made the decision that this was the way they would need to approach donors, prior to even entering the DR for the first time:

*“Personally, I don’t think it would affect me that deeply, because I’m decent at detaching myself from that kind of situation” - S1 P8*

This viewpoint is different from many of the other students in this study who concluded that their attitudes would change over time rather than feeling this way towards donors at the outset.

#### 5.3.1.2 Student perceptions of the body in death

Asking students about their attitudes towards donors during life (Question 4, Figure 2) prompted two students to reflect on how, although no longer still alive, donors should still be shown respect:

*“I just never really thought about the fact that actually, this person was alive however many years or months ago and I suppose that’s something to take into account, because obviously you’ve got to treat it with respect, even though like they’re not alive still.” – S1 P5*

*“I think, it doesn’t matter that they’re not alive anymore. I think you’ve still got to go in there treating them with a lot of respect for what they’ve done.” - S1 P1*

The first student appears to have achieved a level of respect for the donor by remembering that they were a living person, no matter how long ago that might have been. The second student appears to be reporting more of a respect for the donors’ actions (in donating their body), rather than considering that they are a real person. This suggests that learning more about both the donor as a person, as well as more about the donation process, could help to foster an attitude of respect amongst students in the DR.

When one student shared their opinion and beliefs of the body once a person has died, I began to consider that there may be different ways that students might view the body after death:

*“So, after you kind of die, the soul isn’t there anymore, so the body is just the body itself [...] I mean, it was a living person in the past, but as of past death, it’s not, it’s just a body” - S1 P7*

This comment highlighted to me the importance of taking into account whether and how students’ views of the body in death are guided by a prior set of beliefs. If this were the case, then the provision of donor information to all

medical students might not have the same impact as suggested by the group of students who participated in my study.

#### **5.3.1.3 How working with donors may influence a student's future career**

Students speculated how the experience of dissection might help prepare them for their future career, particularly by introducing them to death. These students appeared aware of how anatomical knowledge gain is not the only benefit of working in the DR, but it can also be an experience which might provide the opportunity for developing their identity as a doctor:

*"I'm quite interested in it [dissection] actually, from both the learning perspective, but also as in working with the cadaver itself, it's, for me, it's more about seeing it as a step to be able to become a better doctor and to help people in the future" - S1 P7*

Another student built on this idea, stating how they thought the dissection experience might help them to become more confident in the future:

*"I'm excited to do it [dissection], but I just feel a bit like, I wouldn't say scared. I'm just, I don't know what to expect. Whereas I think in a few years' time, I'll be more confident, I'll be, I wouldn't say necessarily ready to go on a patient, but you'd think that if I was presented with a patient in front of me, I would be comfortable with doing that." - S1 P5*

It is interesting that students were already beginning to consider how they might begin preparing for their future careers, including the opportunity for professional identity formation (PIF) at such an early stage of the medical degree. Comments of this nature also highlight the existence of a potential hidden curriculum that might be associated with the study of anatomy.

#### **5.3.2 Theme 1 summary**

The interviews seemed to prompt students to think about aspects of working with donors in dissection class that they had not previously considered, such as: student-donor relationships, emotional reactions towards donors, and how dissection might impact on their future career.

An interesting finding was the extent to which students talked about the formation of student-donor relationships, a topic that students were not directly asked about, yet almost all mentioned. In addition, students highlighted that not

all individuals view the body in death in the same manner. The students' responses presented in theme 1 also provided insight in to how they felt donor information might help to prepare them for their future career.

### **5.3.3 Theme 2: Student anxiety in the build-up to dissection classes**

As Stage 1 participants were unable to reflect on any actual time spent in the DR, they instead spoke about the emotions they were experiencing in the build-up to their first session in the DR. This theme was developed from a combination of the following three subthemes: "*Student emotions towards working with donors*", "*Lack of preparation*" and "*Potential effect of donor information on students*"

#### **5.3.3.1 Student emotions towards working with donors**

Students reported feeling apprehensive regarding their first encounter with a donor. In one instance, this appeared to stem from the student not feeling as though they were worthy of dissecting a donor's body:

*"I'm nervous to. Just because the fact that like, say it's like an old lady, you'll say like 'wow, that person must have lived so much in their life and you don't know who that person was, yet you're there with their body'. So, I think it's quite daunting" – S1 P1*

Also speaking of their apprehension, another student was hopeful that their introductory session would put them more at ease:

*"A bit apprehensive but looking forward to it, I think. I'm not worried about it, because you get like a pre-session [...] So, I think once that's done, my nerves will be put at rest." - S1 P6*

Interestingly, the following student appeared to have been strongly affected after listening to stories, from their peers in other year groups, that formaldehyde would make them hungry. Consequently, this student had become concerned that feeling hungry in the DR would be a sign of cannibalism:

*“I am a little bit apprehensive. I’ve heard people come out and feel very hungry, and apparently that’s the formaldehyde, but initially I thought does that make them, is that cannibalistic or what?” - S1 P2*

This comment was a little surprising, although statements like this could highlight the lack of knowledge and associated fear of the unknown that some students may have prior to dissection commencing. Receiving further information about the dissection course and everything it entails could hopefully address such concerns.

Unlike their peers who had spoken of apprehension in the build-up to dissection, one Stage 1 student appeared to be confident in their ability to view dissection as a scientific act rather than becoming emotionally invested in the donor as a person:

*“I mean in terms of the scientific side of it, it’s, I’m excited because it’s not an opportunity you tend to imagine yourself getting. But, thinking about the cadaver side of it [...] I’m generally OK at distancing myself from the emotional side of things” - S1 P8*

This same student commented *“I’m pretty decent at detaching myself”*, as discussed in Theme 1, when reflecting on their relationship with donors. Taken in combination with the above comment, it could be suggested that this student sees such detachment as a form of self-preservation from any potential impact that emotional involvement with donors may have on them. Consequently, the student appears to have preconceived ideas that they will need to put up an emotional barrier when interacting with donors in the DR. It is unclear how they have arrived at this conclusion but after hearing other Stage 1 students refer to hearsay from their peers regarding the dissection experience, I can only assume that this is what has influenced their mind set.

#### **5.3.3.2 Lack of preparation**

I soon established that some students felt unprepared in the build up to their introduction to the DR. Frustration at such lack of preparation was reported on multiple occasions. Some comments referred to the perceived lack of information communicated to students by the medical school regarding anatomy classes in general:

*“There’s no specific, like ‘By the way, you’re going to be doing this’ [...] you just turn up and you don’t really know what you are doing. Which they always say you should turn up like ‘be prepared’, but if you don’t give us the information, what are we supposed to do?” - S1 P5*

This student seems unhappy with the communication and preparation they have received in the build-up to their first session in the DR. Yet, they have not provided any suggestions as to how they feel this could be improved upon for future years. It is therefore unclear exactly how this student felt this experience could have been, or should be, enhanced.

Other students reflected on the lack of information provided about donors, including suggestions of how learning more about them could lead to students feeling more prepared prior to entering the DR. When asked what the most appropriate time in the dissection course might be for the disclosure of donor information, the participants generally indicated that earlier in the course would be preferable in order to help them to emotionally prepare for the upcoming experience:

*“Early on would be good [...] because you need to have the realisation that what you’re dealing with is an actual human being and someone who actually had a life so just like, that mental state can be better, like can be prepared better” - S1 P7*

*“Straight away [...] So you go in feeling a bit more prepared” - S1 P2*

#### **5.3.3.3 Potential effect of donor information on students**

There were suggestions that increased levels of respect towards donors might be a potential outcome of students receiving more personal donor information:

*“I think if someone knew the body beforehand, they would always treat it with respect.” - S1 P2*

*“The whole time, you then have the thought that, ‘this was a person, they did an amazing thing, and we should respect them’ and be really grateful for the opportunity that we have right from start” - S1 P4*

At the same time, students also considered how the level of information provided should be given careful thought. One student compared learning more about donors to learning more about patients in their future career. They

expressed the notion that medical professionals should not become too emotionally invested in their patients:

*“I think you should be given enough so that you can do your job but without getting too attached, because obviously like, you know, in the future you can’t be getting attached to your patients” - S1 P5*

It could be argued that it might be beneficial for students to learn more about donors during the dissection course in order to teach them how to deal with any accompanying emotions. This could provide an opportunity for students to develop, and put into practice, the skill of detached concern.

When considering what type of donor information might be beneficial, medical history was suggested by one student:

*“People’s bodies react differently to their lifestyles, so having an idea of how someone lived their life kind of gives you perspective on what kind of diseases they might be susceptible to. So, I suppose it kind of gives you the ability to be able to diagnose sort of thing” – S1 P9*

Unlike the previous students, who hoped to benefit emotionally from donor information, this student appeared more concerned about how a donor’s medical history would allow them an insight as to how certain conditions and lifestyles affect the body. Perhaps this type of donor information could be beneficial for increasing student appreciation of how lifestyle can affect the human body, thus helping to better prepare them for being able to understand how certain conditions might develop as well as being better placed to diagnose them.

#### **5.3.4 Theme 2 Summary**

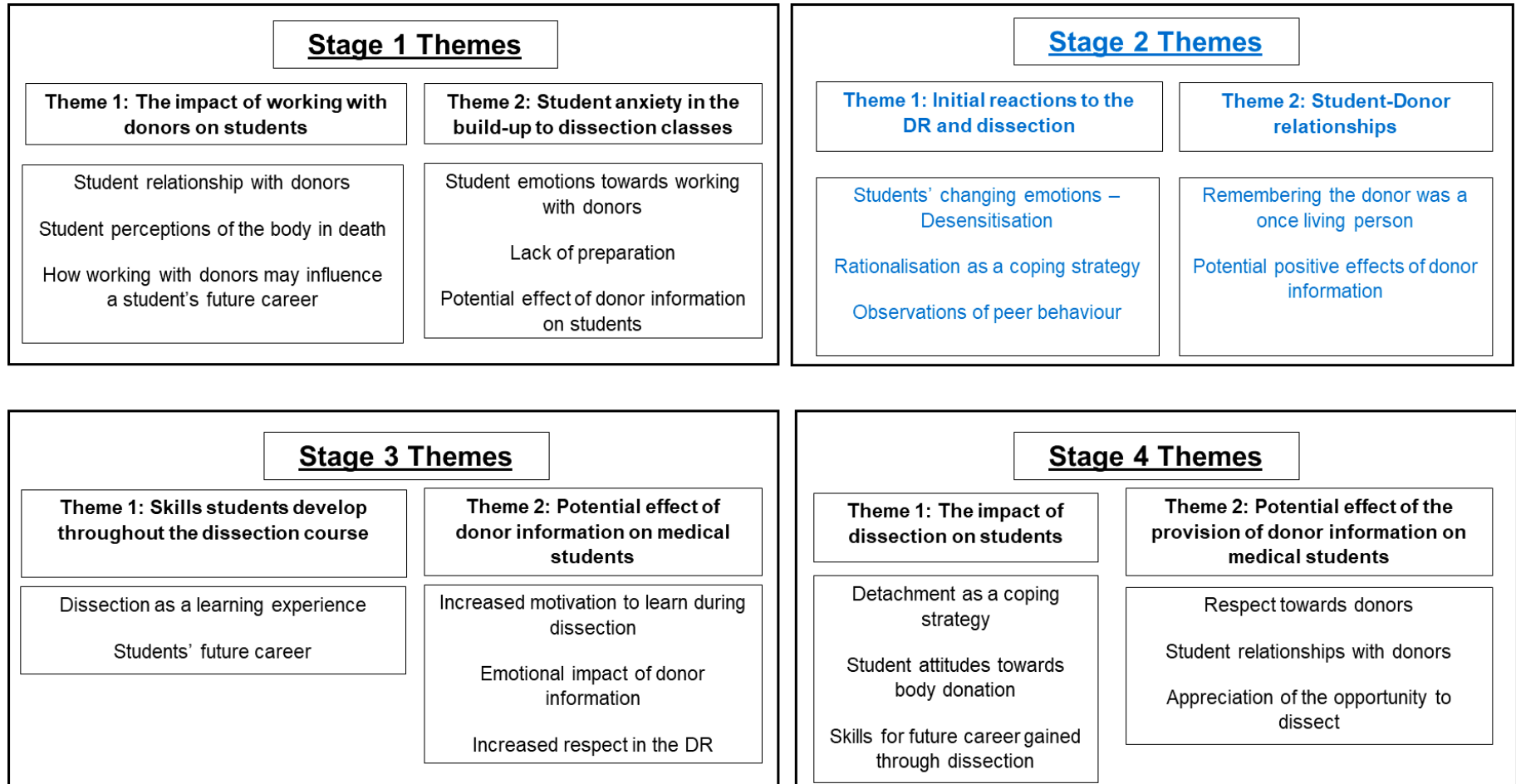
The majority of Stage 1 students appeared to express apprehension regarding the commencement of dissection. Students did not seem to feel well prepared for their first classes in the DR, with some providing suggestions as to how they felt that learning more about donors before this first class could be beneficial. Students seemed to feel it was necessary to establish and maintain an emotional distance from donors, which they hoped to carry into their future careers when working with patients. This was especially noteworthy as these Stage 1 students had only received information from their peers about their time

in the DR. These opinions were not formulated on the basis of their personal experiences as they had not yet, themselves, entered the DR.

#### **5.4 Findings: Stage 2**

Of the nine first-year students that attended an interview in Stage 1, seven attended a follow-up interview after one term of dissection classes (that is, during Stage 2 of this Phase 1 study). This resulted in a 78% response rate from the initial Stage 1 interviews. Participants 1 and 9 from Phase 1 did not take part in a Stage 2 interview, therefore only quotes from participants 2-8 are included in this section.

Following thematic analysis, I established two themes: “*Initial reactions to the DR and dissection*” and “*Student-Donor relationships*” (Figure 4).



**Figure 4 Thematic map showing generation of themes following thematic analysis of all Phase 1 interview transcripts. Stage 2 themes have been highlighted in blue.**

### 5.4.1 Theme 1: Initial reactions to the DR and dissection

This theme is formed from three subthemes: “*Students’ changing emotions - Desensitisation*”, “*Rationalisation as a coping strategy*”, and “*Observations of peer behaviour*”.

#### 5.4.1.1 Students’ changing emotions – Desensitisation

It emerged that students could sense a change in their attitudes towards donors when reflecting on their initial thoughts prior to entering the DR and comparing them to how they felt following one term of classes. Almost all the students reported a sense of desensitisation towards the donors, making comments largely similar to the following student:

*“[...] it’s like a dead person and you’re respectful. But you just become sort of desensitised to sort of thinking about it all the time, it just seems like a much more normal thing now” – S2 P3*

This student seemed keen to make a conscious effort to reiterate that although they were becoming desensitised, they were still maintaining what they perceived to be an appropriate level of respect when in the DR. It appears they have developed an emotional barrier between themselves and the donor in order to carry out the task in hand, suggesting that this student is attempting to develop the skill of detached concern, without the awareness that they are doing so.

These sentiments were echoed by another student, who spoke of how the visual appearance of the donor affected them. They focused on how the donor’s head was a reminder that the donor was a real person and reflected on how they found it easier to detach from the donor once the head had been removed:

*“So, our cadaver now, well since we’ve started dissecting, didn’t have a head and that I think, made it a bit easier. Because when the head was there looking at you, whilst you were dissecting, it was kind of, sort of ‘ooh, this is a dead person’ and now it’s more, it’s very much now ‘This is a cadaver’” – S2 P8*

Some donors did not have their heads removed during this first term of dissection classes. It would be interesting to explore how the students

participating in this study would have felt, had they been working with one of those donors instead.

One student disclosed that their dissection team had decided to give their donor a name. This could suggest that they had begun forming a relationship with their donor. However, it soon became evident that they only named the donor because they had been influenced by hearing stories from others about working with donors in the DR. The student reported that giving their donor a name was something they thought they were expected to do:

*“We did give them a name, but it was more because we heard that other people had done it and we thought well maybe that’s just a medical student sort of thing to do. But we haven’t really used the name that often. It’s just been the body. We found out how they died. But again, I can’t remember.” – S2 P2*

This student chose to refer to the donor as “they” and “them” rather than ‘he’ or ‘she’. This terminology, along with the student not remembering how the donor died, could further indicate that the student was consciously trying to establish a level of detachment from the donor.

Another student also spoke about how, as the dissection course progressed, they felt they had become more detached from the donor and began to objectify them, starting to view the donor’s body solely as a learning tool:

*“[...] moving through the process, I don’t know what the word is, but I think you sort of detach a little. And it kind of just becomes something you’re working with and something you’re trying to learn.” – S2 P7*

Much like the previous student, this participant chooses not to acknowledge the donor is a person, and simply refers to them as “it”. These students’ perceptions of donors are different from those gathered during Stage 1. Beforehand, these students were speculating about how they might form relationships with donors and become emotionally invested in them as people. However, it soon transpired that on entering the DR they did not feel this was the case at all, and instead reported a sense of desensitisation and detachment.

#### **5.4.1.2 Rationalisation as a coping strategy**

Students spoke of their initial emotions in the DR. In order to rationalise dissection, two students recalled how they would remind themselves that this was the donor's wishes:

*"Whenever I do feel weird about it, I'm just like, they wanted this. This was their choice, they decided they wanted this to happen."* – **S2 P4**

*"Ultimately the person that donated their body to be the cadaver, it's what they were expecting to happen. So, it's kind of, that made things a bit easier."* – **S2 P8**

This mind set was echoed by another student:

*"The other day when we had pretty much finished tearing apart the abdomen and I looked at it, and I thought 'God, if her family saw this right now, they'd be disgusted', but then that is what she wanted. Which is how I dealt with it"* – **S2 P4**

This student uses different language to the previous two students. Choosing the terminology of *"tearing apart"* when recounting the dissection of the abdomen could be because this student found this particular dissection to be very invasive and was not comfortable with the technique required for it to be completed. However, this comment could also reflect the potential lack of dissection skills that this group of students possessed at the time of dissecting the abdominal region.

Furthermore, I find the comment that the donor's family would be *"disgusted"* to be interesting. This might be an example of the student projecting their own emotional reactions to the dissection on to the donor's family, assuming they would feel the same way as the student if they were to know the way their loved one was being dissected.

If students were given the opportunity to hear from donor families, as well as understand that they fully support their loved one's decision to donate, then perhaps this student may not have reacted in this way. Such interactions, coupled with the opportunity to hear donor motivations more accurately, might mean this student would not feel the need to rely on their own rationalisation of *"that is what she wanted"* and might feel more reassured whilst in the DR and carrying out dissections.

Also, reporting the need to rationalise the process of dissection, one student commented:

*“I was really kind of squeamish at the beginning, sort of getting my hands in and moving, pushing things off to the side. But then you’ve got to remember that it’s, the cadaver, it is not going to feel what you’re doing”*  
– **S2 P8**

This was the only student at Stage 2 to show concern for physically hurting the donor. However, they appeared quick to remind themselves that this would not be the case. This shift in mind-set seemed to put this student more at ease with what they were doing. Interestingly, this comment was made by the one student who, at Stage 1, was confident in their own abilities to detach from the donor as a person. Their reflection on how they *actually* reacted during dissection classes is very different to what they had anticipated it would be, suggesting they were not as well prepared to begin the anatomy course as they had initially believed.

#### 5.4.1.3 Observations of peer behaviour

Students reported some of the behaviours they had observed their peers display towards donors in the DR. One student reflected on their first experience of encountering a hemi-sected head and the accompanying emotions they recalled experiencing at the time:

*“But when we had the hemi-sected head, I was bewildered by that. [...] Whereas everyone else was just like ‘ooh, poke it’ and I was just like ‘this is amazing’”* – **S2 P6**

Describing their peers’ behaviour and attitudes at that moment and choosing to use the phrase “ooh, poke it” would appear to indicate this student interpreted their peers’ actions to be immature and inappropriate in this situation.

Another student recounted one of their experiences and compared the actions of their peers to those of an academic member of staff [X], describing how the actions of these different individuals had made them feel:

*“I have noticed that some people are very happy doing, yanking at stuff. And that makes you feel a bit uncomfortable to watch. Except when X does it, it’s like, yeah, but X knows what they’re doing. [...] But also, facial expressions is also a little bit, I’m not sure if I’ve picked up on the*

*wrong thing, but ‘this is really fun’, but that for me [...] it doesn’t feel quite right.” – S2 P2*

The use of language such as “*yanking*” could suggest that their peers were being quite rough with the donor, which seems to have made the student feel uneasy. I find it interesting that they seem more at ease with this type of behaviour when exhibited by a member of staff. This could suggest that perhaps this student does not perceive that either they or their peers are experienced enough in dissection at this stage. It might be that the students were indeed conducting the dissection the way in which it had been instructed. However, due to their lack of knowledge and confidence, they felt more at ease when the member of staff stepped in and demonstrated how the students should move forward with their dissection.

Another student also commented on the attitudes and behaviour towards donors they had observed. They seemed to feel that not all their peers were being as respectful as they ought to be:

*“Sometimes you go in and people like hack away at the body and [...] they [the donor] were alive however long ago and [...] you do just think, would you really want your family member to go through that? I mean, I know it’s for educational purposes, but not everybody’s going to respect them as much as they should” – S2 P5*

It is interesting to learn that this student believes that not everyone will respect the donor “*as much as they should*” although this comment appears to relate solely to the physical handling of donors as opposed to students approaching donors with a deep-rooted disrespectful attitude. However, this comment does draw attention to behaviours that students might be exhibiting in the DR that anatomy staff are either unaware of or prevent simply by being present at a dissection table. Taking in to account the comment made by this student, perhaps encouraging students to consider how they would wish their loved one to be treated by students in the DR might help students to achieve and maintain appropriate levels of respect shown towards donors.

#### **5.4.2 Theme 1 Summary**

Students spoke about their initial experiences in the DR, paying close attention to the emotions they experienced as well as recounting what they perceived to be the attitudes of their peers and observations of behaviours they exhibited.

These students appear to be struggling to find a balance between carrying out the necessary tasks in dissection classes and feeling comfortable with their actions whilst concurrently maintaining respect towards the donor. Whilst some students seemed to become more at ease with the act of dissection relatively quickly, it appears that others did not.

### 5.4.3 Theme 2: Student-Donor relationships

This theme comprises two subthemes: “*Remembering the donor was a once living person*”, and “*Potential positive effects of donor information*”.

#### 5.4.3.1 Remembering the donor was a once living person

Students reflected on how donors are real people and that there had been times when, despite their efforts to detach from the donor, the donor had somehow asserted their personhood during dissection. Students considered how being reminded of the humanity of donors impacted their behaviour and attitudes during dissection classes.

One student spoke of how they initially struggled emotionally with dissection:

*“[...] initially I was very tentative with the instruments. I’m still one of the more tentative ones in the group. I think for me it’s; a) I don’t want to ruin a structure that we’re going to need to look at and b) actually, this is a person and they had a life” – S2 P2*

Although the student seems to be conscious that the donor is a real person, what appears to be at the forefront of their mind is ensuring they do not “ruin” the learning experience for themselves and their peers. With this in mind, there were some examples of how students are becoming so driven to fulfil the learning objectives set out for the anatomy course that they begin to lose sight of how the donor is still a person:

*“It’s really interesting and you get really carried away sometimes like ‘oh my god, our body had this ... blah blah blah’, but then you do remember, ‘oh this is a person’. And you know how to respect it, if that makes sense?” – S2 P4*

Suddenly remembering that the donor is a person appears to have caused this student to focus on being more respectful towards the donor. If increased levels of respect might be observed by encouraging students to remember that donors are real people, this could support the provision of donor information to students.

Further to this, other students spoke of how observing a donor's anatomy prompted them to consider what the donor might have been like during life. One student commented on how this reminded them of how little they knew about the donor:

*"I definitely, at the end of the session once I've done the dissection, [...] I wonder what was like their last meal, because we've been like looking at the gut and stuff like that or you know, what was their favourite food and stuff. [...] we don't know anything about them really" – S2 P6*

Rather than entirely focusing on the anatomy, this student related the structures they were studying to what they are used for during life, which seemed to spark their curiosity in the donor. They seem disappointed that they do not know more about the donors by saying "*we don't know anything about them really*", which could hint at an underlying desire to learn more, although the student did not directly say this.

A different student shows an even deeper level of thought, thinking about the donor's family life and their relatives:

*"She's had a hysterectomy, we think. So, I wonder if she'd ever had children, or if she'd never been able to have children, if she had the hysterectomy after she'd had children. Thinking about if she had a family." – S2 P4*

#### 5.4.3.2 Potential positive effects of donor information

Some Stage 2 participants recognised the positive impact that the provision of donor information could have on some students' attitudes during dissection classes. Students expressed concern about undesirable behaviours they had observed in the DR and speculated how the provision of donor information might curtail this:

*“I think we take too much of the [...] human out of it quite a lot and I think maybe putting that back in, would be quite a nice touch really. Because I don’t know, sometimes people get a bit stupid in the dissection room [...] and I just think it would make it a bit more serious.” – S2 P6*

*“Just because it affects your conduct within the dissection room itself and like how you treat the cadavers. Because sometimes you hear offhand comments about the cadavers and stuff, and it’s not very respectful and I feel if people had this experience [...] they could gain a better appreciation and maybe such things could be avoided.” - S2 P7*

This was not the first-time that students in this study reported what they felt to be inappropriate behaviours they had witnessed in the DR. Prior to conducting this study I was unaware of the apparent extent of this type of behaviour. Such comments raise further questions regarding student understanding of respect that could be addressed in the future as it appeared unclear to students as to what behaviour is and is not deemed respectful in the DR. Interpretations of what it means to be respectful can be highly subjective, and varied from one individual to another, further emphasising the reality of how one individual might interpret an experience in a different way to another.

In light of this, it might be useful if students were to receive clear guidance from anatomy staff as to how to maintain a respectful attitude towards donors whether within or outside of the DR. However, the definition of respect would also likely vary amongst anatomists, so perhaps a standardised definition needs to be developed that could be adopted across all medical schools. Perhaps students could be provided with the opportunity to discuss what typically constitutes respectful attitudes and behaviour. Despite these concerns, it is encouraging that students seem to believe that providing them with donor information could help to stop this kind of behaviour in its tracks.

#### **5.4.4 Theme 2 Summary**

Students reported that although they may have initially struggled to come to terms with dissecting a once living person, they soon managed to process their emotions and become more at ease with dissection. Once these initial feelings had subsided it seems that students felt comfortable enough to begin thinking about the donor as a person. This was particularly notable when one student

mentioned how dissecting the abdominal region had caused them to contemplate the donor's last meal.

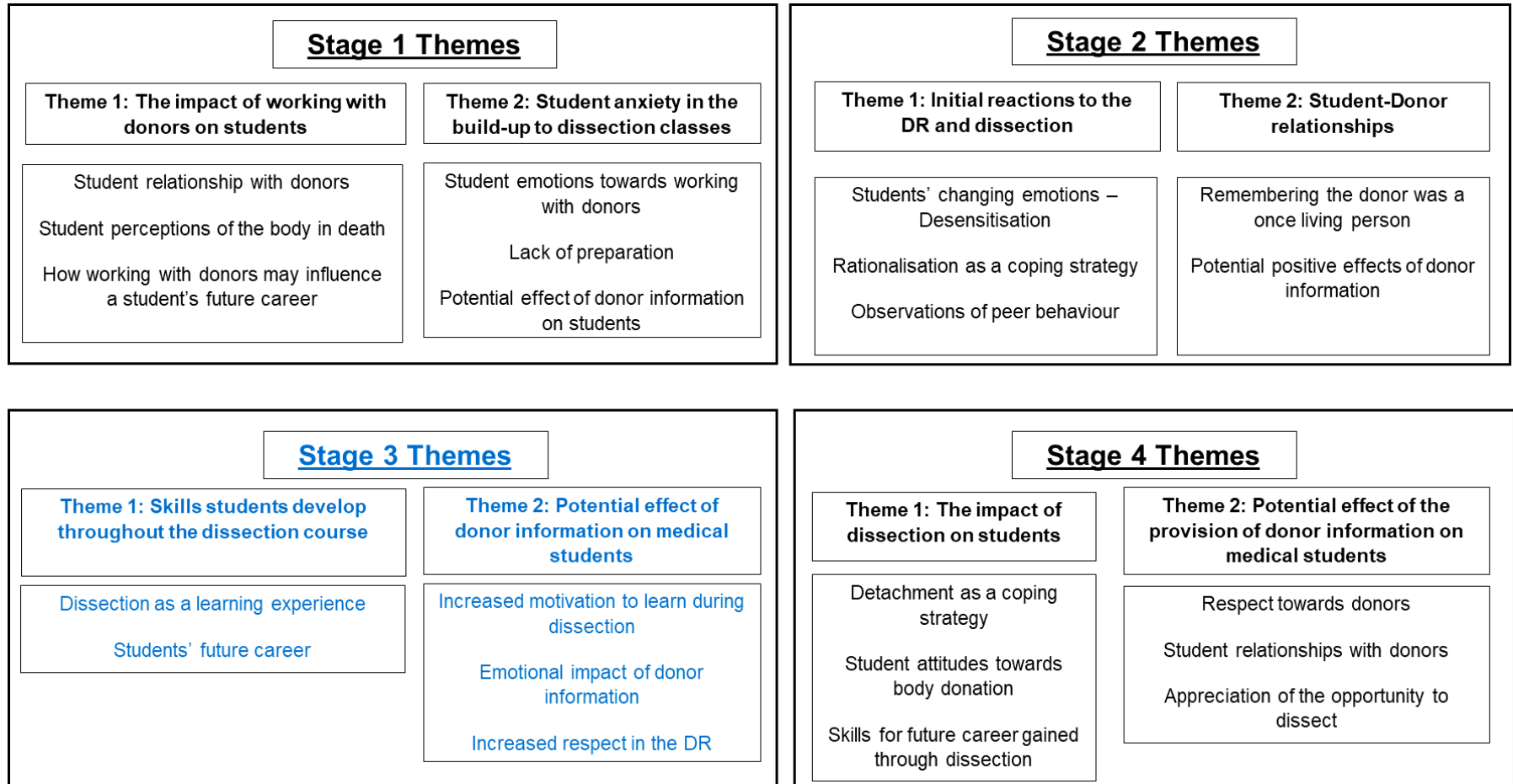
Further reflection of the impact of donor's anatomy on students was also provided when another student reported how they had discovered that the donor had had a hysterectomy, which had prompted them to wonder whether or not the donor had a family. As students become more comfortable working in the DR, it could be suggested that they would be open to learning more about donors, with some participants indicating that receiving this type of information could be a positive influence over student behaviours in the DR.

### **5.5 Findings: Stage 3**

243 second-year students were invited to participate in an interview and nine students responded (3.7%). After receiving further information about the study, seven (2.9%) of these individuals decided to take part in a one-to-one interview.

Participants 10-16 took part during Stage 3 interviews.

Following thematic analysis, I established two themes: "*Skills students develop throughout the dissection course*" and "*Potential effect of donor information on medical students*" (Figure 5).



**Figure 5 Thematic map showing generation of themes following thematic analysis of all Phase 1 interview transcripts. Stage 3 themes have been highlighted in blue.**

### 5.5.1 Theme 1: Skills students develop throughout the dissection course

This theme comprises two subthemes: “*Dissection as a learning experience*” and “*Students’ future career*”.

#### 5.5.1.1 Dissection as a learning experience

Stage 3 participants commented on how useful dissection had been as a learning experience:

*“[...] it’s a fantastic learning experience for want of a better word” – S3 P10*

*“[...] it’s so helpful and invaluable for learning.” – S3 P11*

*“[...] I learned a lot from it and it was a really useful thing” – S3 P16*

Other students also reflected on a change in their emotions as the dissection course progressed. The following student commented that they felt it was necessary to “*turn off your emotional side*”. This could suggest that the student felt it was necessary for them to learn the skill of detached concern in order to be successful in dissection (by achieving the set learning objectives):

*“Obviously it was really emotional at first, and it was hard. But I feel like it’s just one of those things you just have to adapt to, and you’ve got to turn off your emotional side and just think ‘I’m here to learn’.” – S3 P12*

Although the student does not use the term ‘detachment’, it appears this is what they are implying. Detachment is not a typical skill that students would be expected to learn through dissection as part of the formal curriculum and instead seems to manifest through the hidden curriculum. However, throughout this study it was frequently recognised as a coping strategy by students, who reported that it helped them to process their emotional reactions to the dissection course:

*“At first it was really just quite weird [...] I was like ‘Ok this is a person that donated their body and now we’re dissecting them’ and that feels a bit weird. But then after a while you kind of have to learn to detach yourself from that I think” – S3 P14*

The above comments suggest that students might feel as though detaching from the donor was something that had become necessary, rather than something they had consciously decided to do from the outset. Their reasoning seemed to stem from the need to emotionally distance themselves, potentially as a way of adapting to the new and unfamiliar environment they find themselves placed in.

Interestingly, this notion of detachment was also discussed by participants at Stages 1 and 2. This could indicate that students' first experiences in the DR and working with donors is highly significant and potentially highlights how this experience can remain memorable long into the dissection course. Perhaps helping students to prepare for their first sessions in the DR, alongside the provision of donor information, might help to prevent emotional detachment but encourage the development of detached concern, as well as help to prevent any undesirable behaviours being exhibited in the DR.

#### 5.5.1.2 **Students' future career**

In comparison with Stage 1, the students' future career was considered in greater detail by those taking part in Stage 3. It was only previously discussed during Stage 1 when a student speculated about the need to emotionally detach from future patients.

It appeared that students felt dissection had taught them skills they hoped would serve them well in their future careers, perhaps as a result of PIF. This included one suggestion about how the physical act of dissection could prove useful to future surgeons by allowing them to get a practical understanding of human anatomy:

*“Obviously it's really good for if you wanted to go into surgery, you learn the relationship between different structures to each other. [...] I think you can understand it so much more and you memorise it so much more when you've seen it in real life” – S3 P12*

Whilst this student focused on the anatomical knowledge that dissection can enable future surgeons to learn, the following student also spoke about the benefit of dissection to trainee surgeons:

*“[...] dissection is a very good practice for example, for surgery or something like that, because if you do something wrong, it’s not the end of the world, you know. If you do it on a live person, it can be” - S3 P14*

This perspective seems to imply that it is better for mistakes to be made when practicing procedures on donors, where there will be no fatal consequences, as opposed to only being able to practice procedures on real, living patients.

Aside from the skills that dissection might teach them, students were also prompted to think about their future careers, reflecting on how they will need to make the transition from working with donors to interacting with living patients:

*“Then we’re obviously going to move on to patients and treating them very differently and obviously being a lot less invasive and stuff so it’s going to be quite a lot different. [...] when you go to clinical stuff you have to think more about the patient” - S3 P12*

This student highlights that they are aware of the difference in the way they view the donor and how they intend to view future patients. I find the statement *“think more about the patient”* to be particularly interesting. It seems to imply that in a clinical environment, they plan to show more consideration towards patients than perhaps they currently do towards donors in the DR.

Also thinking ahead to their future career, the following student reflected on how they felt the dissection course had helped to increase their confidence and prepared them for interacting with future patients, providing a further example of PIF which may have resulted from practical anatomy classes:

*And I think from first to end of second year I think I have gained a lot more confidence [...] not being scared to touch a patient [...] I think that’s a very big skill and that will hopefully have helped by the end of this year - S3 P14*

Whilst this student has credited dissection experiences for their newfound confidence, it must be recognised that there could also be several other factors that might have resulted in this attitude change. These could include increased clinical exposure on placement and regular interactions with the patient carer community at the university. Furthermore, Stage 3 students are more settled into their study than those interviewed during Stages 1 and 2 and so perhaps

have higher levels of confidence in comparison with those at an earlier stage of the medical degree.

### 5.5.2 Theme 1 Summary

When discussing the skills they felt they had developed throughout dissection, students shared details of how they had learned to emotionally detach from donors as the dissection course progressed. This finding was similar to the reports made by students at Stage 2, as well as the predictions made by some of the students during Stage 1.

Aside from this, students also considered the academic benefits of dissection, such as increasing their knowledge of human anatomy, and providing the opportunity for trainees to make, and learn from, mistakes that might prove fatal for a living patient. Consideration was also given as to how students might treat future patients in comparison to how they were treating and interacting with donors in the DR, with students acknowledging they were planning to approach patients with a different mind-set from that with which they approached donors.

### 5.5.3 Theme 2: Potential effect of donor information on medical students

This theme comprises three subthemes: “*Increased motivation to learn during dissection*”, “*Emotional impact of donor information*” and “*Increased respect in the DR*”.

#### 5.5.3.1 Increased motivation to learn during dissection

Students at Stage 3 considered how learning more about donors could help to improve student motivation during the anatomy course:

*“Remembering how people are donating their bodies, the processes they went through, all of that just really helps, helps motivate you again” – S3 P16*

*“It would motivate you to revise more” – S3 P13*

This suggests that perhaps students think donor information might be a good motivator not only in the DR, but also when revising for exams.

The following student elaborated as to why they thought donor information might have a positive influence on student motivation:

*“I would be quite interested reading about it, and after learning about it, I would feel a lot more duty-bound I guess, that these people have gone through such a long process and so much energy has gone into giving us this resource and we should at least try to make the most of it” – S3 P16*

The student talks about the level of responsibility that individuals might feel towards donors, after receiving more information about them. In line with this, they also seem to imply that learning more about the donation process could enhance student appreciation of the learning opportunity they have.

Finally, the following quote echoes the previous student’s views in relation to donor information improving student motivation levels:

*“Probably a little bit more emotional. Obviously, it would be harder, but then I feel like it would make them [students] respect the learning process a lot more and probably make them concentrate a lot more in the DR” – S3 P12*

This statement also highlights how students may react differently and this is something I will need to consider when determining the content, format, and timing of donor information that I plan to provide.

### 5.5.3.2 Emotional impact of donor information

Students seemed unsure as to whether personifying donors would be beneficial or not. For example, some students suggested that learning too much about individual donors could make dissection classes more difficult:

*“I don’t know. It’s a tough one, because again it’s about personifying them and how difficult it is if you do know who they are.” – S3 P12*

Based on the comments made by students during Stages 1 and 2, I can only assume that the comment “*how difficult it is if you do know who they are*” is referring to the student potentially finding it emotionally difficult or inhibiting to conduct the dissection tasks, after learning more about the donor.

This view was reiterated by another student who also commented that they wanted to avoid forming a “*personal bond*” with individual donors:

*“You wouldn’t want too much personal information because you wouldn’t want to develop a personal bond. Especially not with your own, but yeah, a kind of general overview of the people.” – S3 P10*

To avoid students from becoming ‘too attached’ to an individual donor following the disclosure of donor information, this student suggested that generic information about donors might be more suitable.

It was also suggested that personification of donors could be advantageous for students in helping them to develop skills of ‘detached concern’, that is, teaching students how to maintain respect towards donors (or even future patients), whilst concurrently protecting their own emotions:

*“[...] I get overly empathetic and overly attached sometimes, but I think you have to learn as well. [...] You have to care for patients, but if it comes to the point where you can’t even cut or do your job, it’s not a good thing either. So, I think it would be a very good learning experience from that point of view” - S3 P14*

This student seems to feel that to carry out their job effectively, they need to maintain a level of objectivity. If a student was to be too overwhelmed with emotion and attachment to a patient, it might prevent them from carrying out their job and delivering necessary treatments. The student implies that learning about donors, would allow them to practice skills of emotional detachment that they could apply in the future, when dealing with living patients, to allow them to practice successfully.

Interestingly, and in contrast, one student saw the chance to receive donor information as beneficial in reminding students that the donors are people and not simply inanimate objects:

*“Sometimes, we do so many things where we have to detach ourselves, it’s quite nice to sort of not just think about them as objects to be dissected, and actually think about them as people”- S3 P11*

It is encouraging that students do in fact appear to want to remember donors as the people they were during life rather than only as a learning tool.

### **5.5.3.3 Increased respect in the DR**

A heightened level of respect towards donors was mentioned as a perceived outcome of personalising donors. One student mentioned that although they had not seen any behaviour they deemed to be disrespectful, they still thought donor information would foster respect in the DR:

*“I think people would probably treat, not that I’ve seen any evidence of disrespect in the dissection room necessarily, but I think they would be a lot more respectful” – S3 P16*

As this student was conscious to mention that they had not witnessed any disrespectful behaviour, it is unclear why they feel there would be a need to encourage students to be more respectful. It would be interesting to explore student perceptions of the levels of respect shown towards donors in the DR. As I mentioned whilst analysing the responses of students during Stage 2, different individuals will have different perceptions as to what does or does not constitute respectful behaviour towards donors.

However, a different student *did* reveal witnessing *“less than respectful”* behaviour in the DR:

*“I know a few examples have gone on in the DR, kind of beyond the eye of the demonstrators, of people who’ve been a bit yeah, less than respectful. So maybe it would also improve adherence of people going to the DR and people taking it seriously and learning from it as well as the respect of the cadavers” – S3 P10*

This statement is concerning. Students must know that their behaviour is unacceptable if they are hiding it from staff in the DR. It is interesting that this student believes that donor information could help to curb this type of behaviour. Furthermore, this prompts me to consider why students feel it is acceptable to behave disrespectfully in the first place, and whether provision of donor information really would have any of the beneficial effects on this subset of students as suggested by the participants of this study. This is something that could only be explored upon the disclosure of donor information and conducting follow up studies with students.

It was interesting to learn that one student seemed to feel that donor information could be used as a form of ‘punishment’ for those not behaving in a respectful manner in the DR:

*“I think you should do it for people who don’t take DR seriously [...] I think you need to, people who were mucking around and not taking it seriously with a complete lack of respect. Because I’m pretty sure it’s not fair on those who are donating if they’re just going to come in and have the mick taken out of them” – S3 P15*

Despite their unusual suggestion as to how donor information might be utilised, it is encouraging that this student is concerned about the donor’s care, as well as ensuring that they receive appropriate levels of respect from students.

#### **5.5.4 Theme 2 Summary**

This theme not only appears to support what I had discovered in Stages 1 and 2, in that students were open to learning more about donors, but also provides an insight that I had not previously achieved as to *why* such information might be useful; information surrounding this topic is not widely available in the literature. Interestingly, Stage 3 students, unlike those interviewed during Stages 1 and 2, did not focus as much on the type of information they might like to receive. Instead, this group of students focussed on the effect donor information might have on student attitudes and behaviours, as well as considering the ways in which this information could be shared with students and utilised in anatomy teaching and learning.

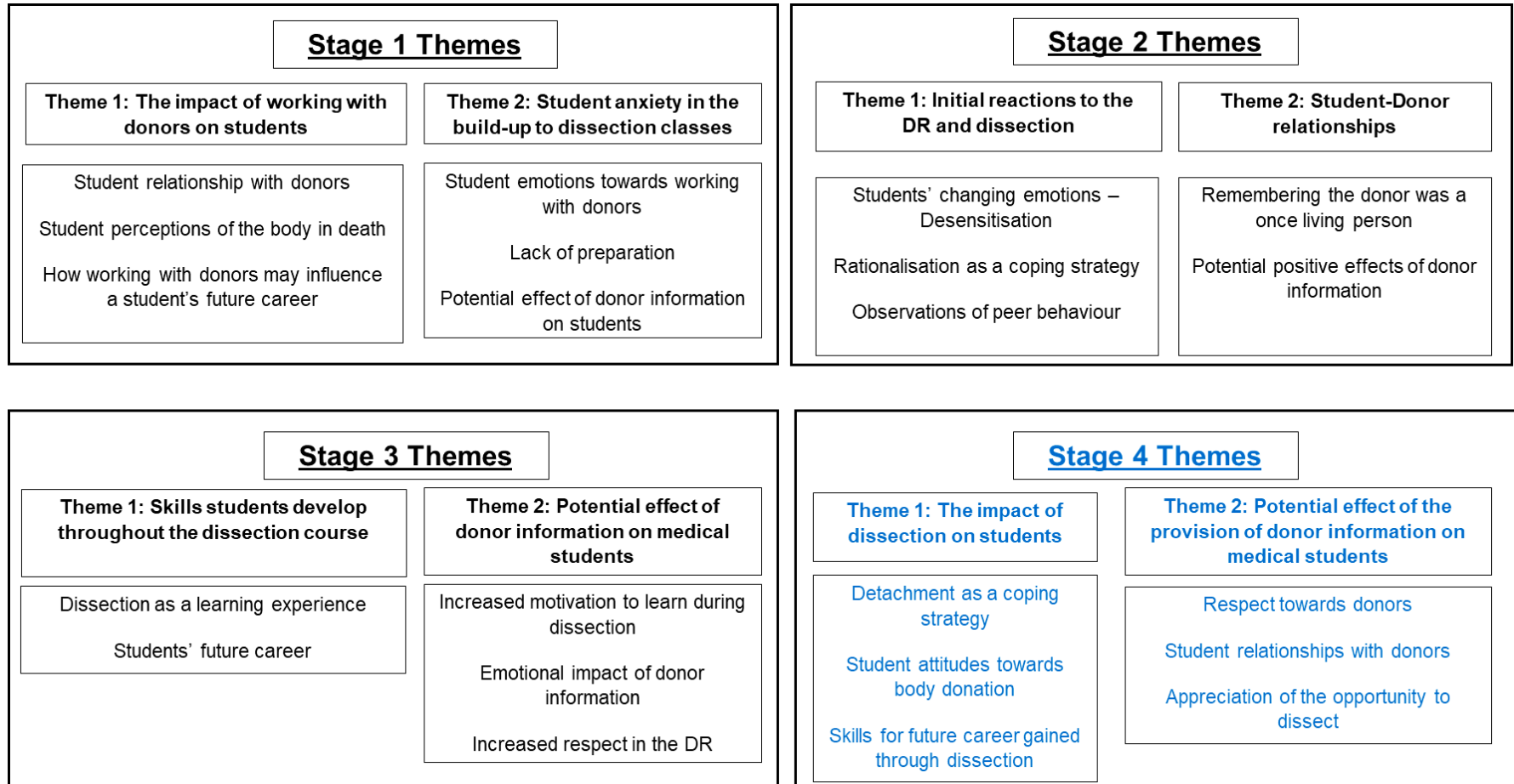
For the most part, students appeared to hope that receiving donor information would be personally beneficial; improving motivation to learn or helping them to learn skills of detached concern. It was also interesting to learn how some students thought donor information would be important in ensuring appropriate levels of student respect towards donors, though little detail was provided by these students regarding their interpretations of what ‘respect’ might mean.

#### **5.6 Findings: Stage 4**

30 students studying for a BSc in Clinical Anatomy were invited to participate in this study. This course is offered as an intercalated degree to medical students, usually upon completion of their second or third year of study and is open to medical students from all medical schools worldwide to apply and study for. Five students responded to this invitation and took part in an interview, resulting in a response rate of 16.6%.

Participants 17-21 took part in Stage 4 interviews.

Following thematic analysis, I established two themes: "*The impact of dissection on students*" and "*Potential effect of the provision of donor information on medical students*" (Figure 6).



**Figure 6 Thematic map showing generation of themes following thematic analysis of all Phase 1 interview transcripts. Stage 4 themes have been highlighted in blue.**

### 5.6.1 Theme 1: The impact of dissection on students

This theme is composed of three subthemes: “*Detachment as a coping strategy*”, “*Student attitudes towards body donation*”, and “*Skills for future career gained through dissection*”.

#### 5.6.1.1 Detachment as a coping strategy

Stage 4 students spent a considerable amount of time reflecting on detachment between themselves and donors, a practice that had been mentioned by students during all previous Stages of this Phase 1 study.

One student recalled the visual appearance of the donor in the DR and how, as the dissection course progressed, the donor stopped resembling the body of a person and became more of a learning tool:

*“As the weeks go on, the body doesn’t look like a body anymore. It becomes less and less a body, more your tool for learning [...] So, you become less attached the more you go on, because you’re just learning that one thing that you’re seeing” – S4 P21*

This student focused on the visual appearance of the donor and how this affected their perception of the body, specifically how the body looked less like that of a person as dissection classes progressed. This could explain why some students can become so focussed on the task in hand that they may forget that the donor is still a person.

The same student reflected on how they had not previously found it difficult to detach from donors. However, when it came to the task of dissecting a donor’s face, they were unable to maintain such emotional distance:

*“[...] I’ve always been of the mind that this is a teaching tool, this is how I’m going to learn best and you sort of have to distance yourself [...] I could not of imagined cutting the face because that is the bit that is real, is human. It’s how we interact with each other on a daily basis and as soon as I got the skin off, it was fine and you have to distance yourself, but that was the hardest bit for me” – S4 P21*

It was interesting to listen to this student talk about how they initially found it difficult to detach when dissecting the donor’s face. However, once the skin had been removed, they found they were able to re-establish emotional distance.

This apparent shift in attitude could be explained by the fact that once the skin has been removed from the face, all donors typically look very similar.

One student reflected on the fact that throughout the dissection course they had adopted the view that the donor was a learning tool. However, as they were nearing the end of their dissection experience, they felt more comfortable acknowledging the humanity of donors:

*“You’re just doing it for learning, you’re not thinking about the body. But then I think as you get to the end and you’ve finished, you probably then turn a full circle and you’re like well actually, over the last year I have learnt so much information from this one person who has donated their body and actually, they become human again” – S4 P17*

It appears this student has used detachment as a coping strategy throughout their time in the DR, in order to ensure they gain as much knowledge as possible. However, it could also be suggested that as the student felt it was expected of them to be entirely focussed on completing the formal learning objectives set for each dissection session, they neglected to take the opportunity to reflect on the donor as a person.

Finally, one student shared how they felt it was more respectful for them to view the donor as a person:

*“[...] we’ve given our cadaver a name. Just because it, you know, rather than referring to him as a body, [...] in my opinion I think that’s more respectful to think of him as a person who’s had a life, rather than just as, you know, a slab of meat on the table” - S4 P18*

It is interesting that this student seems to feel as though viewing the donor as a person can be maintained through the act of giving the donor a name.

Furthermore, I am particularly intrigued by the use of the phrase *“a slab of meat on the table”*. This language could suggest that not all students have been able to relate to donors as human beings and builds upon similar comments made by another student during Stage 1 who interestingly used the exact same terminology, referring to the donor as a *“slab of meat”*.

#### 5.6.1.2 Student attitudes towards body donation

Unlike any of the other interviewees, Stage 4 students spoke about their feelings towards donating their own body.

One student stated that they would be willing to donate their own body, knowing how having the opportunity to dissect had enhanced their learning experience. However, they also reported that not all their peers feel the same way:

*“I would donate my body I think for anatomy students, because I’ve got so much out of it, but then actually a lot of people that I’ve spoken to have then actually said ‘No, I know what it’s like [...] I don’t want to be treated like that’. [...] I find it quite hypocritical. If you think that you’re being disrespectful to the cadaver, so therefore you don’t want to do that [donate their own body], then you shouldn’t have been disrespectful to the cadaver.” – S4 P17*

This student appears to be suggesting that their peers would not donate their bodies because of a lack of respect shown towards donors. This is not the first time that students have mentioned what they perceived to be disrespectful behaviour towards donors. This was also highlighted by Stage 3 interviewees. At face value, it seems that some students know they are acting inappropriately in the DR and are conscious that they would not wish to be treated in the same manner by future students. There could also be other reasons why a student might not want to be dissected, however, these were not discussed by students as part of this study.

Another student echoed these sentiments:

*“The dilemma is, I have learned a lot from people who have donated their bodies but then having done it [dissection] myself, having known exactly what happened to them and knowing how medical students are [...] I’m a bit reserved from donating my body” – S4 P19*

This student appears to consider the donation of their own body because they have personally benefitted from another person’s donation. However, upon witnessing their peer’s treatment of donors in the DR, they are unsure whether they would be prepared to donate their own body through fear that other students may treat their body in the same way.

### 5.6.1.3 Skills for future career gained through dissection

Like their peers in Stages 1 and 3, Stage 4 students reflected on the opportunity for PIF that dissection had provided them with, in developing useful skills that they felt would leave them well equipped upon entering their future careers.

One focus was on the practical skills students had gained, which is an aspect of dissection that had not been previously mentioned by the other cohorts of students interviewed. Primarily, this was mentioned by students who were hoping to pursue a career in surgery. They commented that they had found dissection to be beneficial in allowing them to practice using surgical equipment and techniques:

*“[...] I had no idea how to dissect before I got here, [...] if I went into surgery now having done dissection, I feel like I’d be far better equipped [...] I’d say it has equipped me with a lot of practical skills, like even just things like blunt dissection” – S4 P18*

Another student spoke about how the skills developed through dissection proved useful during placement:

*“I mean there’s the kind of practical, manual skills of it. So, I mean I’ve done placement, [...] and I’m often there with scissors and forceps like ‘I don’t know what to do’, so like actually kind of practising on cadavers is quite good” – S4 P17*

These two students chose to focus on the practical benefits of the dissection course and how having the opportunity to develop these skills in the DR has left them feeling more prepared whilst on placements, as well as for their future careers. The fact these students have focussed on the practical skills gained from dissection could be a direct reflection of the type of dissections that this group of students conduct. Stage 4 students complete intricate dissections of delicate structures in the head and neck region which require sound technique and finesse to be completed successfully. In contrast to this, students dissecting in Stages 1 to 3 are typically working on larger regions of the body such as the thorax, abdomen, and limbs whereby they are not required to develop such advanced techniques and skills to visualise the relevant anatomy.

Another student shared a different perspective on how the dissection course had taught them useful skills. They commented on how they believed the feelings of detachment they had established when working with donors would

be useful when working with patients, especially during invasive procedures such as surgery:

*“[...] I imagine quite a lot of us will be surgeons and you are going to have to see a patient and then a couple of hours later, cut into them, [...] and then a couple of hours later, go and talk to their family and talk to them again, [...] re-normalise them again as a person, so I think it's quite a good skill to develop” – S4 P20*

It is interesting how this student (as well as a student interviewed during Stage 1) suggests that to be able to do their job adequately, surgeons need to remain detached from patients during surgical procedures. It would be interesting to explore why and how they have developed this perception. However, it is encouraging that the student feels that a surgeon should not remain detached when they are in the company of their patient whilst they are conscious, or when speaking with any of the patient's family members. By sharing such thoughts, it could be suggested that this student is beginning to appreciate that dissection could play a part in helping them to develop detached concern and how this skill might be useful in their future career.

### **5.6.2 Theme 1 summary**

Much like the students interviewed during Stages 1 to 3, Stage 4 students reflected on becoming detached from donors as the dissection course progressed. Whilst they reported that their ability to maintain such detachment was somewhat challenged when they came to dissect a donor's face, they indicated being able to quickly re-establish a detached perspective once they had removed the skin and all donors began to look alike.

Witnessing what they deem to be less than desirable student behaviour in the DR appears to have led to students questioning whether they would be willing to donate their own bodies. This is despite the fact they have benefitted from having had the hands-on learning opportunity which they often praise for the way it has helped them to develop both practical and emotional skills which they hope to apply throughout their future professional careers.

### 5.6.3 Theme 2: Potential effect of the provision of donor information on medical students

This theme is composed of three subthemes: *“Respect towards donors”*, *“Student relationships with donors”* and *“Appreciation of the opportunity to dissect”*.

#### 5.6.3.1 Respect towards donors

Stage 4 students gave similar responses to those interviewed during Stages 1 to 3, whereby they suggested that the provision of donor information could result in students remembering that donors are real people, which has the potential to increase levels of respect shown towards donors:

*“[...] people forget these were real humans and I think knowing something about them will help us to respect the body more” – S4 P19*

*“I think it would make them [medical students] feel more respectful of them [donors]” – S4 P17*

Comments of this nature are like those made by Stage 3 students. Such evidence provides further suggestion that students might not always be acting as respectfully as they ought to be towards donors but, again, also raises questions regarding what might constitute ‘respect’.

Although the following student did not directly comment on this matter, they did insinuate that there were ways in which students could be more respectful in the DR. However, they were keen to ensure that they, personally, were not perceived to be disrespectful in the DR:

*“[...] it would just help you understand and maybe make us be a bit more respectful, not that we’re ... disrespectful” – S4 P18*

A different student admitted that they felt as though some of their peers were not being as respectful as they ought to be in the DR:

*“Most people are very very respectful of the cadavers, but you know, there are always going to be some people who think they’re smart and funny and knowing a bit more might humble them and be like remember this was a person who lived a full life and then made a really selfless choice. Don’t take the piss” - S4 P20*

This student appears to imply that providing information about donors could potentially encourage their peers, who might be behaving inappropriately in the DR, to appreciate that donors are real people and have donated their body for the students' benefit. It seems that this student feels strongly that their peers should have more appreciation and respect towards donors for the opportunities they have provided the students with.

#### 5.6.3.2 Student relationships with donors

Although my findings during the pilot study suggested that students with more dissection experience would prefer to receive less personal information about donors, Stage 4 students interviewed as part of Phase 1 *did* show a willingness to learn more about donors as people. They speculated that personal donor information (specifically relating to donors currently in the DR) would enable them to build a relationship with the donor they were dissecting at the time:

*“It would give you more of a relationship with your cadaver” – S4 P20*

*“I think it would [...] build up a bit of a relationship with the cadaver that you’re dissecting, and I think it would just help to build on that. But [...] the more scientific minded people might not think it’s relevant” – S4 P18*

Although both students suggest that learning more about donors could build on the student-donor relationship, neither of them provide reasoning as to how or why this might be necessary or useful. However, the second student does raise an important consideration, also previously suggested by a Stage 3 student that I will need to take in to account; not all individuals will want to learn more about donors.

A different student suggested why some students may not wish to learn more about donors:

*“I guess the more information you know about the person before they died, the more likely it is that you’ll sort of make a connection between that person, maybe like a grandparent [...] and then it might be more upsetting” – S4 P19*

This student commented that some students might, on the provision of donor information, relate donors to their own family members, which could lead to them becoming upset. This could be because it would no longer be possible for

the students to maintain the same level of emotional detachment from the donors that they may have implemented as a coping strategy in the DR. However, I feel it is important to consider that, during future practice, students will be placed in many situations whereby they may have developed a bond with patients and learnt more about them as a person but still need to be able to focus on and carry out their job to the best of their ability. Therefore, an argument could be made that students need to learn how to cope with such emotions and providing them with donor information could be seen as a good opportunity to help students gain experience of such situations and develop techniques for dealing with them early on in their medical training.

There are many ways in which donor information could impact on students and the following student made an interesting point:

*“I don’t know if that would make you form a judgement upon someone and you would deliberately see that body differently if you knew their lifestyle. Like for example, [...] if you had someone who had donated their body who was an 80-odd year-old grandma who was loving and had worked all her life, versus a criminal, do you know what I mean? Like I know they’re two extremes, but you could almost see the respect, and I know you are always meant to maintain respect with the bodies, but you could almost see that some respect is lost if you know more about the body, that you didn’t like.” – S4 P21*

This is something that would need careful thought when deciding what donor information to provide students with. However, in their future professional careers, students will come in to contact with, and provide treatment for, people from all walks of life. In their duty as a medical professional, they will be expected to provide the same level of care and attention to all patients. As such, it could be argued that students should learn how to treat all patients equally early on in their career and that the provision of donor information would allow students opportunities to develop such skills.

#### **5.6.3.3 Appreciation of the opportunity to dissect**

Stage 4 students recognised the significance of the gift a person gives when donating their body for anatomical examination. There was speculation as to

how learning more about donors might increase levels of respect and appreciation that they are able to learn anatomy by dissection:

*“[...] knowing that these bodies are really precious and knowing in other medical schools they don’t have many and we have a lot and we have full body dissection, it would definitely make us a lot more respectful and appreciative of what we have” – S4 P19*

This student showed an awareness that not all medical schools include dissection in their curriculum and suggests that by encouraging students to think more about donors and the process they have been through to donate their bodies, students might realise how fortunate they are to be able to dissect. Perhaps this could, in turn, increase the levels of respect and appreciation students feel towards donors.

Another Stage 4 student also proposed that learning about donors, specifically why donors had chosen to donate, could increase appreciation of dissection:

*“I think it would make us feel more appreciative of the fact that we have dissection. Especially knowing why they picked medical education” – S4 P17*

This student showed an interest in wanting to learn more about donor motivations and suggested that knowing this might make students more appreciative towards individuals who donate their bodies.

#### **5.6.4 Theme 2 summary**

Stage 4 students gave a useful insight in to some important factors I would need to consider prior to providing students with donor information. Students speculated that donor information could increase levels of respect in the DR, encourage a more personal relationship with donors, and increase the appreciation students have for being able to conduct dissection.

Unlike the intercalating students who participated in the pilot study, Stage 4 students *did* indicate an interest in learning personal donor information (instead of purely medical history, as discovered during the pilot study). This conflict in findings could result from the use of interviews during Phase 1 as opposed to focus groups in the pilot study. However, another possible explanation could simply be that these students were from a different cohort to those who

participated in the pilot study and may have held different views. An interesting point was also raised in relation to the potential reactions of some students upon receiving donor information. It was suggested that instead of promoting desirable behaviours and attitudes in the DR (as almost all students interviewed during Stages 1 to 3 had anticipated), donor information could instead have the opposite effect on students, resulting in an element of judgement towards donors. However, it could be argued that students need to learn how to remain non-judgmental towards patients throughout their careers and receiving donor information during dissection could be a good starting point for the development of this attribute.

## **5.7 Phase 1 Discussion**

The primary aim of this Phase 1 study was to explore how students at different stages of the dissection course might feel in relation to learning more about body donors. As part of this, I investigated what type of donor information, if any, students would like to receive. Additional findings included discussions regarding student initial experiences in the DR and working with donors. It was necessary to gather student views regarding the provision of donor information prior to contacting donors to ensure that this was a concept students might be interested in, as well as to make sure I then gathered relevant information from donors that would be of interest to students.

One-to-one qualitative interviews were completed with students at four different stages of the dissection experience, using the interview guide designed and developed during the pilot study. To my knowledge, this is the first study of its kind to be completed, whereby students are directly asked to discuss how they feel about the provision of donor information, including what information they might be interested to learn. This approach proved to be particularly beneficial as it enabled me to develop a deeper understanding of *why* students might want to receive donor information as well as explore *how* they thought doing so might impact not only their own but also their peers' behaviour in dissection classes.

An interesting finding was that students interviewed at each of the four stages discussed the emotional impact that dissection had, or might have, on them.

Stage 1 students appeared to be most likely to report feelings of anxiety, apprehension and low confidence when thinking about entering the DR and

working with donors. Apprehension regarding the commencement of dissection is not uncommon and has also been reported by other researchers exploring medical student emotions in the build-up to dissection, specifically feelings of anxiety (Snelling et al., 2003; Arráez-Aybar et al., 2008) and fear (Kotzé and Mole, 2013).

I also discovered that students further on in their dissection experience (Stages 2, 3 and 4) were generally less likely to describe emotions that might be deemed to be more negative. A reduction in negative emotions as the dissection course progresses has been confirmed in the recent literature (Greene and Rosen, 2021; Wong et al., 2021), as well as previously in two studies specifically reporting on medical students in the UK (Evans and Fitzgibbon, 1992; O'Carroll et al., 2002).

Interestingly, a reduction in negative student emotions seemed to occur as early on as after just one term of dissection classes (Stage 2), with this change becoming increasingly apparent amongst second year and intercalating students (Stages 3 and 4, respectively). A change so soon is not uncommon, with Evans and Fitzgibbon (1992) reporting to have observed this change six weeks into the dissection course in students studying medicine at the University of Wales College of Cardiff. Reporting an even quicker change in emotions, O'Carroll et al. (2002) conducted a study at the University of St Andrews which suggested that medical student emotions can change in this way after just four weeks of dissection classes.

Both previous studies conducted in the UK have adopted a quantitative, self-administered questionnaire approach when set time points were in place for the questionnaires to be distributed. Similarly, set time points were used in the study I conducted: prior to students entering the DR (Stage 1) and following one term of dissection classes (Stage 2). This meant the second set of interviews were conducted following 12 weeks of practical anatomy classes. Taking into account how early on both Evans and Fitzgibbon (1992) and O'Carroll et al. (2002) observed a change in student emotions, it would not be unreasonable to suggest that the shift in emotions I have reported may have happened at the earlier stages of the dissection course. Perhaps future studies should aim to monitor student emotions regarding dissection at more regular timepoints (for example, weekly) so we can determine a more reliable stage at which this

change in emotions appears to take place, though this may vary from individual to individual.

Interestingly, I also noted a correlation between student emotions and detachment and depersonalisation; as students reported a decrease in negative emotions, they reported an increase in levels of detachment and depersonalisation.

Coping strategies are frequently considered to play a role in this shift in student emotions, as students look for ways in which they can manage the emotions they are experiencing in the new and unfamiliar situation of being in the DR and dissecting a real human body (Mc Garvey et al., 2001; Getachew, 2014).

In particular, detachment and depersonalisation are well-established coping strategies employed by medical students whilst studying anatomy (Dickinson et al., 1997; Tseng and Lin, 2016), often resulting in students forgetting that they are working on a real human being and beginning to view the donor as an inanimate object.

Interestingly, students in this study held the preconception that they would need to become detached from donors prior to even entering the DR for the first time (Stage 1). This perception appeared to stem from the need to deal with any potential adverse emotional reactions they may otherwise experience, with one student concerned that if they did not detach, they may *“implode emotionally”*.

Students at Stages 2-4 who had gained dissection experience were also able to reflect on how they felt they had become more detached from donors as the dissection course progressed. However, they could also recall occasions when they had been unable to remain detached from donors and had begun to relate to them as human beings. For example, a Stage 2 participant spoke about how, when dissecting the abdominal region, they had started to think about the donor's last meal and what their favourite food might have been. Interestingly, only one other student in this study (also at Stage 2) referred to the personal life of the donor they were dissecting in such a direct way. This other student discussed that the donor they had dissected had had a hysterectomy and reflected on whether this meant the donor had children or not during their lifetime.

These thoughts appeared to be prompted as a direct result of the region the students were dissecting. This is not uncommon; however, it is usually dissection of the hands, pelvis (Robbins et al., 2009) and head that trigger thoughts about the donor as a person (Goodwin et al., 2016), as well as characteristics such as painted fingernails, or even tattoos, thought to allow an insight into a donor's personality (Coulehan et al., 1995; Olejaz and Hoeyer, 2016) .

To my knowledge, this reaction to dissection of the abdominal region is not cited in current literature. Perhaps this type of thought was reported in my study as a result of the regions that students had been dissecting. Prior to the Stage 2 interviews taking place, these were the thorax and abdomen, so thoughts relating to these areas specifically were more likely to be at the forefront of this student's mind. Interestingly, a Stage 4 student in my study did recount finding dissection of the face to be emotionally challenging, given that the face is how we, as humans, communicate with one another, thus highlighting the humanity of the donor. However, the same student also mentioned that they had always perceived the donor to be a "*learning tool*", suggesting they had anticipated detaching from and depersonalising the donor from a very early stage in order to help them deal with the emotions of dissecting another person's face.

Another finding involved an apparent correlation that seemed to emerge between detachment and depersonalisation and levels of respect perceived to be displayed by students in the DR. It appeared that students who could be perceived to be more detached from donors might be more likely to exhibit what other students have referred to as "disrespectful" behaviour.

Stage 1 students seemed more open to remembering that donors are real people, and as a result of this they spoke about the need to be respectful, with little consideration given to the possibility of disrespectful behaviours that might be encountered.

Conversely, detachment was more prominently discussed by students at both Stages 2 and 4, leading them to reflect on their personal observations of their peers' behaviours in the DR. Consequently, students described how they felt their peers would "*hack away*" at donors during dissection or would be more inclined to view donors as "*a slab of meat*". Alongside this there were concerns

that students who were approaching donors in this way might not be displaying a fully respectful attitude.

Interestingly, multiple students at all Stages referenced “*respectful*” and “*disrespectful*” attitudes and behaviours. However, at no point was it disclosed how exactly students might define the terms “*respectful*” and “*disrespectful*” which, in hindsight, is perhaps something I should have followed up on during interviews in more detail.

Respect can be perceived in different ways in different cultures, therefore what is acceptable in one culture may be deemed to be inappropriate in another. For example, in Thailand, there is a strong emphasis on respect for donors and this is thought to be displayed through students referring to donors as “*ajarn yai*” (great teacher), bowing to donors as the beginning of each dissection class, and through learning personal information about donors and who they were during life (Winkelmann and Güldner, 2004; Prakash et al., 2007).

Alternatively, a majority of medical schools worldwide will simply encourage students to ‘show respect’ towards donors, but do not follow up with this by giving examples of ways in which this can be achieved (Ghosh, 2017; Jones and King, 2017). From my experiences working as an anatomy demonstrator and later as a teaching fellow, students are simply told that they need to be respectful, and that any disrespectful behaviour will not be tolerated, and disciplinary action taken. This is reflected in the DR regulations that students are expected to sign and adhere to with the short statement of “**ALWAYS** *treat the cadavers with respect*”. Later in this document a longer statement is included regarding care of donors:

***“There must be no unnecessary or disrespectful exposure, handling or mutilation of the body or its parts. Any disrespectful, inappropriate behaviour or attitude toward cadavers, prosections or members of staff will result in expulsion from the class and disciplinary action. Please conduct yourself with maturity and respect our cadavers / prosections.”***

It could be argued that as students do not have any experience in the DR at the time they are expected to sign these forms, they would be unaware of what might constitute disrespectful exposure, handling or mutilation of the body. On

reflection, much like amongst different cultures, there are perhaps situations in which different members of staff will have different views on what actions and behaviours might be perceived to be respectful or disrespectful. As such, students may receive mixed messages which highlights the need for a more universal definition to be established. In order to achieve this, wider exploration of what it means to be respectful is required not only within the UK, but worldwide, where a collaborative approach can be adopted to determine what features of respect medical students worldwide are expected to develop. This is particularly relevant as students are thought to carry learned attitudes and behaviours developed through the medical degree with them into their professional careers, which may not always be within the same country or culture of which they trained in.

There is particular concern that disrespectful behaviour can result in lower levels of patient satisfaction, compromise patient safety, and a poor sense of teamwork with other healthcare professionals (Leape et al., 2012). Such concerns highlight the role that the anatomy course can play in a student's PIF and the impact this may have on their future careers. Interestingly, although they did not refer to PIF specifically, some students appeared to indicate that learning more about donors could be beneficial to them developing attributes that they felt would be necessary for them to be a successful practicing medical professional.

In a bid to combat the perceived negative impact of detachment and depersonalisation on medical student attitudes and behaviours, students participating in this study suggested that respect could be promoted via the provision of donor information. This finding has previously been reported by other researchers in both Taiwan (Lin et al., 2009) and Michigan (Bohl et al., 2013) investigating whether or not students would be open to receiving donor information and the impact students feel this might have on them.

Aside from one interesting suggestion made by a student that donor information could be used as a form of 'punishment', students generally considered the positive aspects of donor information being provided. However, some students were a little more apprehensive about the emotional impact that such information might have.

In terms of some of the more positive outcomes that students suggested, they were particularly hopeful that donor information could help encourage the development of student-donor relationships. This specific outcome could be especially relevant, given how students at all Stages of Phase 1 reported an awareness of becoming more detached from donors, as the dissection course progressed.

A frequently cited benefit of the development of stronger student-donor relationships by students in this study, was increased levels of respect in the DR. This could suggest that students are aware that either they themselves, or their peers, are not already acting with the utmost respect with regard to body donors. It was interesting that students at Stage 1 with no experience in the DR suggested that donor information could increase levels of respect. It is not clear why students at Stage 1 felt that the atmosphere in the DR would not already be as respectful as it could possibly be; perhaps a perception that could have resulted from hearsay from students with more experience of dissection. With this in mind, it could be suggested that the need to detach from and depersonalise donors is an aspect of the hidden curriculum that is passed down from one cohort of students to the next (Finn and Hafferty, 2020).

Despite the suggested benefits of providing students with donor information, this phenomenon is not common practice in the UK. Therefore, there was no standardised procedure in terms of how and when to provide such information that I was able to follow for the research presented in this thesis.

Consequently, it was important that I gathered information from students at all different stages of the dissection course, enabling me to determine factors such as how, when and what information should be provided. Furthermore, speaking with students, and learning more about their thought processes, allowed me to explore factors that I may not have considered prior to providing students with donor information.

Following student feedback during Phase 1, I determined that information should be provided to students on a generic basis rather than individualised to donors in the DR. This concurred with findings reported by Bohl et al. (2013) and Williams et al. (2014), who discovered that medical students felt that donor information or donor names, respectively, might best be provided to students on a generic basis. Aside from also discovering that students in this Phase 1 study

would like to know more generic facts, this was also a logistical decision, as I did not have any information about the donors currently being dissected in the DR during anatomy classes.

Additionally, one Stage 4 student made a valid argument as to why it might not be appropriate for donor information relating to each specific donor to be provided for students. This student was concerned that the way they treated individual donors could be heavily influenced by such information, and not necessarily in a positive way. They considered how they might view an 80-year-old grandmother in comparison to a criminal, commenting that “*you could almost see that some respect is lost if you know more about the body, that you didn't like*”. This suggested that students would behave less respectfully towards individuals whom they did not deem to have acted favourably during life.

Such concerns are not unfounded. A questionnaire-based investigation conducted by Nnodim (1996) describes how students at University of Benin Medical School are aware that they will be dissecting the bodies of executed convicts. In this situation it seemed to emerge that it would be more favourable for the convicts to remain anonymous. With the knowledge that they were dissecting executed convicts, students appeared to approach dissection with a somewhat biased viewpoint based on what they knew. In a free-text section of the questionnaire, one student commented “*I considered the cadavers to have been robbers and criminals who deserve no pity*” (Nnodim, 1996, p.179).

Whilst such findings could provide support for withholding information about donors from students, to prevent the development of undesirable attitudes towards the donors, I would argue otherwise. Although the guidelines and legislations governing healthcare in Benin will be different to that in the UK, it is very clear what is expected of healthcare professionals working within the National Health Service (NHS) England. In the most recent NHS Constitution for England documentation which was released by The Department of Health (2015) the principles and values of the NHS in England were set out. These guidelines state that the NHS has a “*social duty to promote equality through the services it provides*”, later adding that patients have “*the right to be treated with dignity and respect, in accordance with your human rights*”.

In line with this, throughout their professional career's students will be expected to treat a range of different individuals and will have a professional obligation to treat them all with the same levels of care and respect. This could be considered to be a key aspect of PIF as students transition into a medical professional as well as being an important skill for students to learn in order to nurture future doctor-patient relationships (Swick, 2000; Pawlina, 2006).

Concerns regarding the provision of donor information seemed to stem from the belief that learning more about donors could make them more relatable to individuals in a student's personal life (such as a grandparent). Furthermore, some students voiced concern that such information about donors could result in students becoming distressed due to situations that I might be unaware of in their personal life (such as a recent death of a close family member). However, it could be suggested that learning about donors and practicing how to manage their own emotions (whatever they may be) in order to provide the necessary level of care for a patient, is an important skill that students should begin to develop as early into their professional career as possible.

Students at Stage 4 implied they would like to learn personal information, unlike their peers in the pilot study, who had only been interested in medical history. Perhaps this was because in the one-to-one interview setting students felt they were able to speak more freely without fear of judgement from their peers. This finding also further suggests that some students may be open to receiving donor information, regardless of the level of dissection experience.

A particularly interesting point was raised by a Stage 1 student who voiced concerns about being perceived as a cannibal due to the effects of the smell of formaldehyde making them hungry. This anxiety seemed to result from hearing about the experiences of their peers at later stages of the dissection course and how the smell in the DR had, at times, caused them to become hungry. This comment by the Stage 1 student being interviewed was unusual as generally student concerns surrounding the smell in the DR are related to physical reactions such as fainting or feeling nauseous (Bataineh et al., 2006; Getachew, 2014), or the avoidance of eating meat (Qamar and Osama, 2014), rather than fears of being perceived as being a cannibal.

Hearing this concern from a Stage 1 student raised questions as to whether prior to entering the DR would be the best time to provide students with donor

information as I was concerned that it might add undue stress. However, I also discovered that students as early as Stage 1 were of the mind-set that they would need to remain detached from donors at all times. As such, I considered how donor information could prove beneficial to students in helping them to nurture professional behaviour, by fostering the student-donor relationship, if provided prior to commencement of the dissection course. This decision was further supported by feedback from Stage 1 students who felt that donor information should be provided to students as early on as possible.

It could be argued that Stage 1 students may have been anxious initially because they felt like there was a lack of communication between themselves and the medical school in the build up to their first session in the DR. Receiving very little information about what to expect created a fear of the unknown amongst students, which is a response to practical anatomy classes that has previously been reported in the literature (O'Carroll et al., 2002; Arráez-Aybar et al., 2008). Further to this, it became evident at all stages that students had a lack of knowledge regarding the process that donors go through in order to donate their body (i.e. the required legal documentation as well as the steps that take place once a donor passes away). It would be interesting to learn if students had the same anxieties in the build-up to dissection if they were to be given detailed information, including that directly relating to donors as well as the donation process, prior to entering the DR.

Another factor that influenced my decision to provide first-year medical students with donor information moving forward, as opposed to second-year medical students, was that the memorial service at the University of Leeds takes place during students' second year. This is an event which is known to prompt students to think about the donors more deeply (Coulehan et al., 1995; Hildebrandt, 2016; Ghosh, 2017), as they will be meeting their donor's family members. Therefore, having either attended this event or simply thinking about the organisation of this event, could influence the findings gathered as part of this study.

In summary, the findings gathered from Phase 1 appear to evidence student support regarding the provision of donor information. Such interest in learning more about donors has also been reported by students studying at other medical schools worldwide, specifically those in the USA (Crow et al., 2012;

Bohl et al., 2013; Dosani and Neuberger, 2016). However, this Phase 1 study was the only one, at the time, to have adopted a purely qualitative approach to this subject.

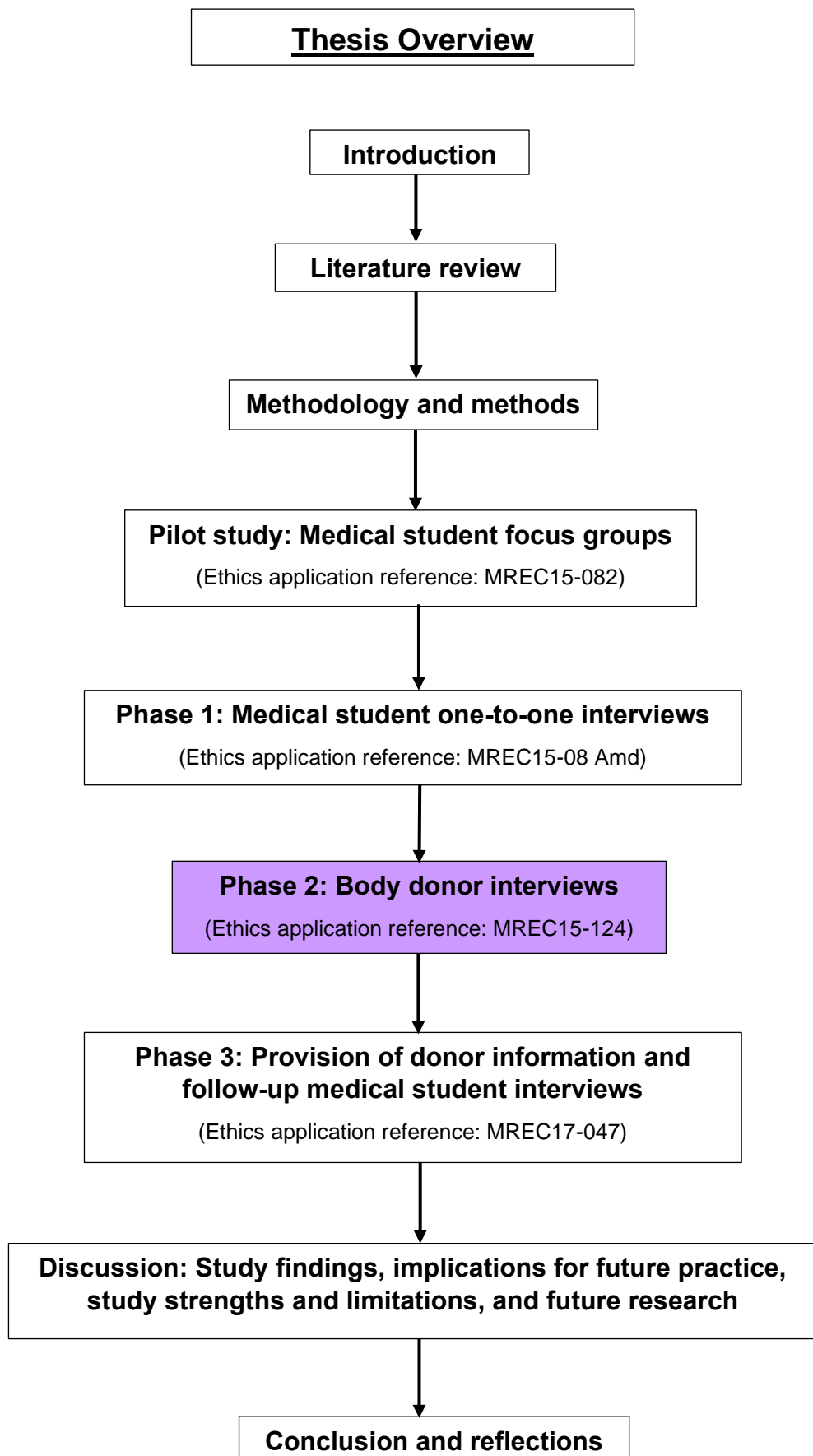
Following the findings of Phase 1, the next phase in this research was to determine whether donors would be willing to provide information about themselves to be provided to students - Phase 2.

### **5.7.1 Phase 1 study limitations**

The findings presented in this chapter represent the views of a limited number of students from just one cohort, at a singular institution, who participated in this study. Due to the voluntary nature of student participation, it is highly likely there is an element of selection bias, whereby students interviewed were potentially more invested in donors prior to their involvement in this study. Therefore, it is important to acknowledge that the findings of Phase 1 do not necessarily provide an accurate representation as to how the rest of the student population feel regarding either student interactions with donors or the provision of donor information to students.

## **5.8 Chapter summary**

In this chapter I presented findings that further confirmed initial findings gathered via the pilot study, whereby students were largely in support regarding the provision of donor information. The information gathered can be used to guide both Phases 2 and 3, as it confirms what information should be gathered from donors as well as highlighting important considerations that need to be made prior to making donor information available to students.



## **Chapter 6 Phase 2 – Investigation into what information body donors are willing to provide about themselves to be passed on to medical students**

This chapter describes the collection of information from body donors, utilising one-to-one telephone interviews, as well as analysis of this information using a combination of simple descriptive statistics and, where appropriate thematic analysis. I also describe how I used this information in the third, and final, Phase of this study.

### **6.1 Phase 2 Study aims**

The Phase 2 study was designed to explore my second research question:

***“What personal information are body donors willing to provide about themselves to be passed on to medical students?”***

Following completion of the pilot study and Phase 1 it emerged that some students might be open to learning more about donors. I found this encouraging, particularly when also taking into account suggestions in the literature as to how the provision of donor information to medical students could help to foster the development of professional behaviours and attitudes including: empathy, compassion and dignity (Lin et al., 2009; Crow et al., 2012; Bohl et al., 2013; Talarico, 2013; Dosani and Neuberger, 2016; Santibañez et al., 2016). The provision of donor information to students is now common practice in some medical schools worldwide (Lin et al., 2009; Crow et al., 2012; Talarico, 2013). However, donors in the UK still remain anonymous (Jones and King, 2017).

### **6.2 Methods**

#### **6.2.1 Recruitment for one-to-one donor telephone interviews**

Donors who registered at the University of Leeds between 01/10/16 – 01/02/17 were invited to participate in this study via the line of communication routinely established between donors and the Anatomy Facilities manager. In total, 222 study invitations were sent to potential donor registrants over this time frame and 45 (20.3%) completed study consent forms were returned.

Of the 45 respondents who returned signed study consent forms, 43 (19.4%) were successfully contacted to arrange a convenient date and time for the interview to be conducted. However, only 40 donor interviews were completed as three individuals could not be contacted on the pre-arranged interview day. This resulted in a final participation rate of 18%.

### **6.2.2 Donor telephone interview guide**

Using guidance from quantitative studies that had previously investigated donor profile (Richardson and Hurwitz, 1995; Bolt et al., 2010; McClea and Stringer, 2010; Cornwall et al., 2012), alongside my Phase 1 findings, I designed the following interview guide for use during Phase 2 (Figure 7).

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#### ***Questions about the participant as a person***

- 1. What was/is your occupation?*
- 2. In your own words, can you give me an outline of your life so far?*
- 3. What do you enjoy doing in your spare time?*

#### ***Questions about the participants' reasons for donation***

- 4. How did you learn about body donation?*
- 5. What are the main reasons you have decided to donate your body to medical education?*
- 6. How do you hope that your donation will help medical students?*
- 7. Is there anything you would like to say to medical students and would be willing to have passed on to them when they start medical school?*
- 8. Would you be willing to share any of your relevant medical history with the medical students?*
- 9. At what age did you decide you wanted to become a body donor? That is to say, is it something you have always wanted to do or is it something you have only thought about more recently? Do you mind me asking you how old you are now?*
- 10. Do you know of anyone else who has donated their body?*
- 11. Do you have any other family members? If so, what family do you have and how do you think they feel about your choice to donate your body?*
- 12. Do you think it would be a good idea to allow students to meet, talk to and ask questions to a potential donor when they begin medical school? If so/if not, then why?*
- 13. Would you be willing to meet medical students to discuss your decision to donate your body and talk to them about your life and any interests you have?*

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**Figure 7 Body donor interview guide.**

The information collected during interview was entered into a Microsoft Excel spreadsheet. Following this, simple descriptive statistics were calculated.

Only responses gathered from donors in response to question 7 (*“Is there anything you would like to say to medical students and would be willing to have passed on to them when they start medical school?”*) were included in the thematic analysis.

## 6.3 Findings

Rather than reporting individual data sets, information collected from all donors interviewed is reported as a whole. I made this decision based on what students had indicated a preference for during Phase 1, that is, learning about donors on a more generic basis.

### 6.3.1 Donor age

The average age of donors interviewed was 69 years ( $\pm$ SD 11.52) (range = 42-90 years).

### 6.3.2 Donor Occupation

Many donors were retired, however, they disclosed what their main occupation in life had been. A wide range of occupations were listed (Table 3) and these have been grouped into more general categories for the ease of reporting as recommended by Lagwinski et al. (1998).

Occupation	Frequency (n)	Percentage (%)
Teacher	11	27.5
Office worker	7	17.5
Industry worker (e.g. Engineer, tradesman)	6	15.0
Shop assistant	3	7.5
Healthcare worker (e.g. Nurse, carer)	3	7.5
Unemployed due to illness	3	7.5
Hospitality worker	2	5.0
Other	5	13.5

**Table 3 Occupation of donors interviewed during Phase 2.**

Occupations only reported by one individual were grouped into the category of *“Other”*. This included five separate occupations; vet, vicar, postman, carer for wife and housewife. The most commonly reported occupation by donors was

“*Teacher*”, whereby 11 donors reported to have either held, or were currently in, a teaching role ranging from primary school through to university level.

### 6.3.3 Source of information about body donation

Most frequently, donors had come to learn about the option to donate their body via another individual they knew who was registered to donate. This included individuals who had previously passed away, as well as those still alive and currently registered to donate (Table 4). The use of media to raise awareness of body donation for anatomical examination purposes was highlighted, primarily as a result of individuals watching television programmes about body donation for medical education.

Source of information about body donation	Frequency (n)	Percentage (%)
Knew someone else who had registered	16	40.0
Media (Television, newspaper, radio, internet)	8	20.0
Connection to medical school through friend/relative	4	10.0
Solicitor when writing their will	3	7.5
While having treatment at hospital	3	7.5
Researching what to do with their body after death	2	5.0
Other	4	10.0

**Table 4 Sources of information about body donation reported by donors interviewed during Phase 2.**

Responses only given by one individual were grouped into the category “*Other*”. These sources of information included: their family doctor informing them of this option, working in a funeral directors, and attendance at the annual University of Leeds memorial service.

The categories displayed in tables 4-6 were developed as a result of grouping similar themed responses together. This was not achieved by in depth thematic analysis as the purpose of this phase was to gather donor information to be provided in a generic format to students (i.e., not on an individual case basis). Examples of how these categories were developed are shown in Appendix 22 as the principles of thematic analysis as described in chapter 3 were applied.

### 6.3.4 Donor reason for body donation

When asked about their reasons for donating, some donors gave multiple answers, resulting in a total of 73 responses (Table 5). Over half (n=44, 60%) of the responses to this question highlighted a motivation to contribute towards medical education. Some individuals with diagnosed medical conditions were donating with the hope of increasing knowledge regarding certain conditions. This included donors who were suffering with pancreatic cancer or with osteoporosis.

Reasons for donating	Frequency (n)	Percentage (%)
Help and contribute towards medical education	44	60.0
Body is no use after death	14	19.0
Avoidance of burial/cremation as these pollute the environment	11	15.0
To achieve something in life	4	6.0
Lack of relative to care for their body after death	4	6.0
To further medical research	3	4.0
As a result of a family member dying unexpectedly	3	4.0
To relieve family of the financial burden of a funeral	3	4.0
The individual had a personal link to science or medicine	3	4.0
Belief that their organs would no longer be of any use for transplant due to their age	2	3.0
To show gratitude to the NHS	2	3.0
To complete the wishes of a loved one who was unable to donate when they passed away	1	1.0
After attending the memorial service at the University of Leeds and seeing how their family member had contributed to medical education	1	1.0

**Table 5 Reasons for body donation provided by donors interviewed during Phase 2.**

An interesting motivation provided by one donor resulted from their spouse passing away. Although their spouse's final wish had been to donate their body to medical education, they had been unable to do so due to the condition they passed away from. Therefore, the donor I interviewed revealed that their primary motivation for donating was to carry out this wish on their behalf.

The donor who reported learning more about body donation whilst attending the University of Leeds memorial service commented that they felt compelled to donate after seeing the level of appreciation that medical students displayed

towards donors whose altruism had played a significant role in helping them learn anatomy.

### 6.3.5 How donors think their donation will help

Donors were specifically asked how they thought their donation may benefit medical students. Again, some donors gave multiple answers to this question and so a final total of 52 responses were recorded (Table 6). Nearly one-third (n=16, 31%) of interviewees felt that their donation would help learning in general, with other common responses relating to knowledge gain and supporting students' learning experience.

How donors hope their donation will help	Frequency (n)	Percentage (%)
To help learning	16	31.0
To enhance knowledge of certain medical conditions	8	15.0
To provide a hands-on experience for students	8	15.0
To provide the opportunity for trainee doctors to carry out medical procedures	8	15.0
To help students learn how the body works	6	12.0
Unsure how donation may help	4	8.0
To help students learn how to look after people	1	2.0

**Table 6 How donors interviewed during Phase 2 think their donation will help.**

It was interesting to discover that only one donor felt that their donation would help students learn how to look after people, despite this being an important professional skill that students in Phase 1 suggested that they should develop throughout the dissection course whilst working closely with donors.

### 6.3.6 Donor knowledge of another person who has donated

It transpired that 28 (70%) of individuals donating knew of someone else who had donated their body, with 15 (38%) of these individuals reporting that this was a family member. Amongst those interviewed were 4 married couples who had decided to register to donate their bodies at the same time (n=8, 20%). Nearly one-third (n=12, 30%) of interviewees had no knowledge of anyone else donating their body to medical education.

### 6.3.7 Discussion of decision to donate with other family members

34 (85%) interviewees had discussed their decision to donate with at least one family member and in all instances the donors' families were in full support of their loved one's decision to donate. 4 donors (10%) disclosed that they were the only surviving member of their family and 2 (5%) had made the decision not to discuss their decision with family prior to registering to donate their body.

### 6.3.8 Donor medical history access

All 40 interviewees said they would give permission for medical students to have access to their relevant, anonymised, medical history.

### 6.3.9 Donor willingness to meet with medical students

Donors were asked whether they would be willing to meet with medical students in an informal setting. 31 donors (78%) thought this type of event could be a good idea and would be willing to participate if they were given the opportunity to do so. Of the remaining responses, 6 (15%) were unsure whether this form of meeting would be appropriate and 3 (7.5%) were fully opposed to the idea.

### 6.3.10 Donor willingness to provide messages to be passed on to medical students

When asked if there was any message that donors might have for students who may benefit from their donation, 31 individuals (78%) were quick to give one. However, for the remaining 9 donors, it was a difficult question as this was not something they had previously considered. Despite this, these 9 donors did still provide a response to this question, after giving it a little thought, resulting in a 100% response rate of messages provided from donors.

#### 6.3.10.1 Themes

Following the thematic analysis of the messages provided by donors, I established three main themes: *“Encouragement and advice”*, *“Respect for donors’ bodies”*, and *“Humour”*.

Examples supporting the development of these themes are provided in Table 7.

Theme	Messages
Encouragement and advice	<i>“To be a good doctor to the patient, not only have you got to be technically aware, but show compassion and understanding of the individual, you only get wisdom from</i>

	<p><i>knowledge and experience, so you can be the brightest person in the world but can only gain wisdom from knowledge"</i></p> <p><i>"To wish them luck in their chosen profession and to tell them that I hope that my donation helps them in some small way"</i></p> <p><i>"Just always remember when you see a patient, look at the patient, see more than the illness"</i></p> <p><i>"It's a fantastic profession that you've chosen and good luck with it. My thoughts are with you all the way because I've had such fantastic care through the NHS, and my family too, I think it's a wonderful way to go in your working career. So, go for it!"</i></p> <p><i>"Don't ever waste any opportunity, and here's one for you now - life's too short"</i></p>
Respect for donors' bodies	<p><i>"Make sure you do something decent with it. Take it seriously, these things aren't done ad hoc, they're because people want to make it of benefit to you, so take it seriously."</i></p> <p><i>"Treat it with a bit of respect, it's just a shell of my body, but even so."</i></p> <p><i>"I would say I hope you treat the body with respect and make the most of it."</i></p>
Humour	<p><i>"I will try to die with an empty stomach to help them a bit! I've always valued a sense of humour and very suspicious of people who don't have one"</i></p> <p><i>"I'm only tempted to make a joke - to say don't hurt me!"</i></p>

**Table 7 Themes and example messages to students from donors interviewed during Phase 2.**

## 6.4 Implications of Phase 2 findings

Body donation is generally a fully informed process whereby an individual must provide consent for their body to be used for anatomical examination (Chung and Lehmann, 2002; Riederer et al., 2012; Subasinghe and Jones, 2015; Winkelmann, Andreas, 2016). Such consent, which is now required as a result of the implementation of various laws governing the act of body donation, has seen a shift in the acquisition of cadavers at a large majority of medical schools worldwide (Labuschagne and Mathey, 2000; Garment et al., 2007; Kramer and Hutchinson, 2015; Kahn et al., 2017). Despite the shift in the source of bodies for anatomical examination, tradition dictates that individuals bequeathing their body to medical education must still remain anonymous (Bohl et al., 2013; Jones and King, 2017). In spite of this, the literature reporting on body donor profile worldwide is relatively prolific (McClea and Stringer, 2010; Bolt et al., 2011; Halou et al., 2013; da Rocha et al., 2017; Techataweewan et al., 2017),

however, to my knowledge, there is only one study detailing donor profile to have been reported in the UK. This aforementioned study was conducted by Richardson and Hurwitz (1995) over 25 years ago and was designed with the sole motivation to explore and report the profile of individuals donating their body at that time.

As a result of the change in how bodies are acquired for the study of anatomy, donor information is now more readily available than ever before. Subsequently, in recent years a growing number of medical schools, notably those in the USA (Crow et al., 2012; Talarico, 2013; Dosani and Neuberger, 2016) and Asia (Lin et al., 2009), have begun disclosing more detailed information about body donors to their students. Reports from medical schools whereby donor anonymity is no longer standard practice have suggested that the provision of such information to students can have a beneficial impact on attitudes and behaviours, not only in the DR, but also into the students' future professional careers.

Despite these suggestions this phenomenon has not, as of yet, been explored in the UK. As such, prior to conducting this Phase 2 study, I was unsure whether donors in the UK would be willing to provide any personal information about themselves, with the knowledge that this information would ultimately be made available to medical students. Thus, the purpose of this Phase 2 study was to determine what information, if any, those donating their body to the University of Leeds would be willing to disclose about themselves, as well as gathering this information in preparation for Phase 3 of my study.

Upon completion of Phase 2 I feel able to confirm that some donors in the UK are willing to disclose personal information in order for it to be shared with medical students. The positive response from donors is encouraging as it will enable steps to be taken towards breaking down the long-standing donor anonymity between donors and students. Moreover, it can allow us to explore the proposed benefits for medical students that have been associated with the personalisation of body donors. However, further study in this field would be required in order to determine whether, and to what extent, these findings can be applied throughout the rest of the UK.

#### **6.4.1 Phase 2 study limitations**

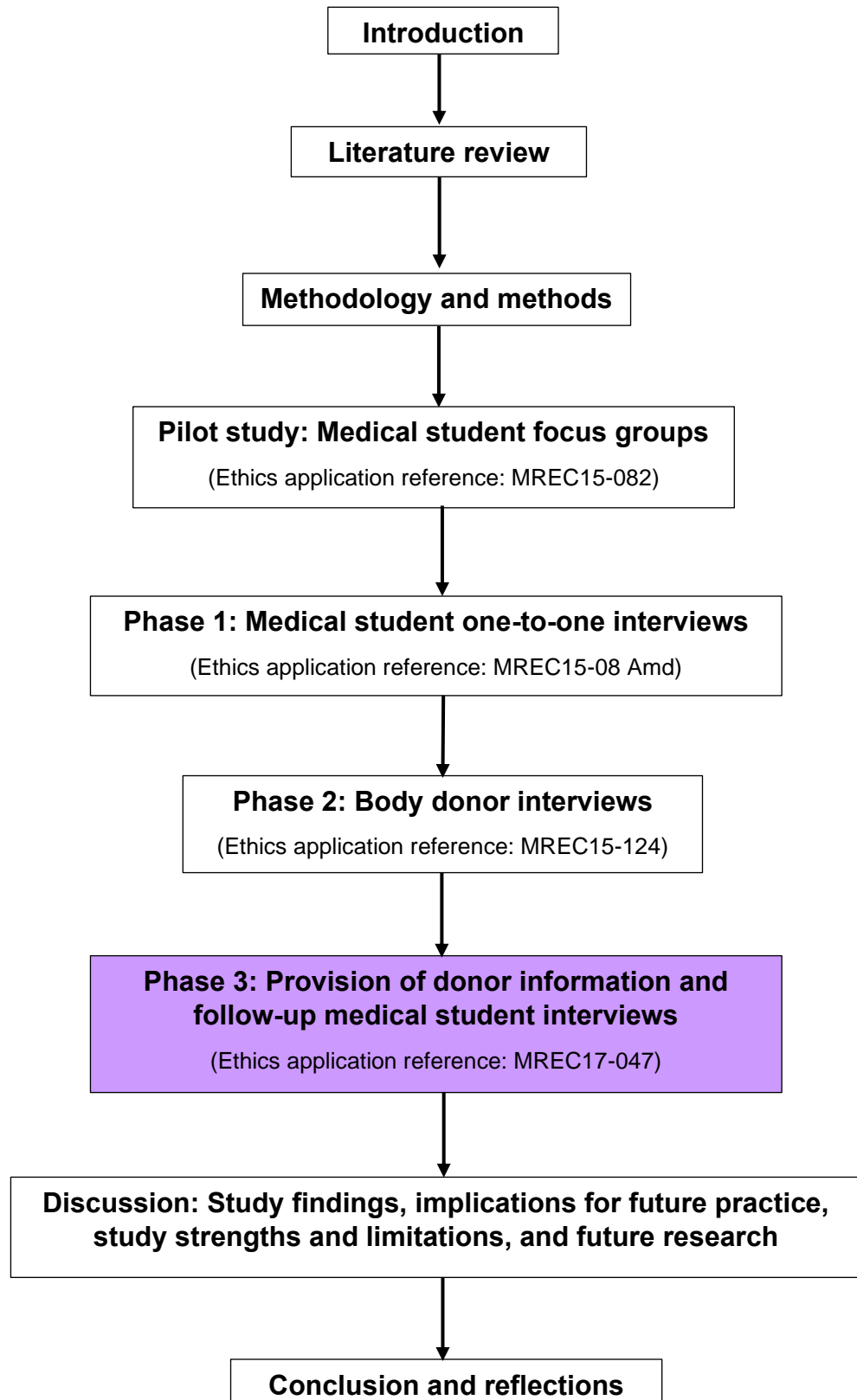
Recruitment for Phase 2 took place over a limited time frame of 4 months, ruling out any donors who may have registered with the university both prior to and following this period of time.

Additionally, only those registering to the University of Leeds were invited to participate in this research. It is therefore not possible to state whether individuals in different geographic locations around the UK hold the same or different viewpoints to those located within the donor catchment area for the University of Leeds. Furthermore, additional demographics such as gender and age could impact on the findings of this study, as well as race, faith, and social class, so perhaps these should also be considered in future research of this nature.

Despite these limitations, this study gathered data from a good proportion of those invited to participate and I am confident that the results can be taken as representative of those who would typically donate to the University of Leeds.

## **6.5 Chapter summary**

This chapter reported the findings of telephone interviews with newly registering body donors to the University of Leeds, during which personal information about donors was gathered. The results of this study indicated that there appears to be a proportion of donors who are willing to disclose information about themselves to be made available to medical students. Alongside information such as occupation and sources of information about body donation, donors provided information less commonly explored in the literature, such as their reasons for donation and personal messages to be passed on to medical students. The information gathered during Phase 2 was used as part of Phase 3 which was designed to explore the reactions of medical students following the provision of donor information.



**Chapter 7 Phase 3 – How does body donor information affect medical students?**

This chapter describes the findings from my Phase 3 study, whereby medical students were provided with the donor information collected during Phase 2. The findings from one-to-one interviews with students at two different time points during the dissection course are presented and discussed and the findings are analysed in relation to the findings from other researchers exploring this phenomenon.

## **7.1 Phase 3 Study aims**

Phase 3 was designed to allow for the provision of donor information and follow-up one-to-one interviews with students in order to address my third research question:

***“How does receiving more information about body donors affect medical students with different levels of dissection experience?”***

I designed this Phase 3 study in order to disseminate donor information to medical students at two different time points during the first year of the medical degree: prior to exposure to the DR and following the completion of one term of dissection classes. Following this, I hoped to explore any potential effect that donor information might have had on students, including their attitudes towards donors and dissection.

## **7.2 Methods**

### **7.2.1 Development of the donor information presentation**

Based on student feedback during Phase 1 I designed a presentation (Appendix 22) for students which incorporated information not only about donors but also the act of body donation (i.e. process, laws). I delivered this presentation to students at two different time points during the first year of the medical degree:

- 1) Prior to entering the DR for the first time, during the introductory activities at medical school (Pre-DR) and;
- 2) Following one term of dissection classes (Post-DR)

Topics covered in the presentation included: the history of anatomy, laws and legislations governing body donation to the University of Leeds, the process a body goes through on arriving at the university, practices in anatomy in two

different universities in different countries, and, finally, information collected from donors during Phase 2 of this study.

The donor information from Phase 2 that I decided to include in this final section was: information about donor families, donor occupations, reasons for donation, messages for students from donors, whether donors would be willing for students to have access to any relevant medical history, as well as a consensus on whether donors feel it would be appropriate for them to be given the opportunity to meet with students, prior to their death.

It was made clear to students that the information in the presentation did not relate to every donor to the University of Leeds, but to those interviewed during Phase 2 of this study.

Information regarding donor occupations, donor families, donor motivations as well as messages from donors to students were all included. Occupations and motivations could be grouped together to be given in a more generic format. I felt that information about donor families was relevant for students to hear (such as the family having support for the donor's choice to donate) as a consequence of some of the comments made by participants in Phase 1, who gave consideration to how the donors families might feel upon learning how their loved one was being dissected. The messages provided to students were completely anonymised and allowed students of the University of Leeds to have communication with donors for the first time. This type of communication occurs as standard in some medical schools around the world (Lin et al., 2009; Crow et al., 2012), however, there is no evidence in the literature of this occurring in the UK. I hoped to use this opportunity to begin exploring the impact that such communication might have on students.

Whilst the majority of information I collected from donors was provided to students, I specifically chose to omit a more detailed social history. This was for two reasons. Firstly, the students had indicated a preference to receive donor information on a generic basis. Providing individual social histories would not fall in line with this and would instead begin to build more of a case study on individual donors. Secondly, the question regarding social history was included in the interview guide for Phase 2 in the hope it would act as a form of "ice breaker" between myself and the donors. Throughout the course of the interview, I would be asking donors questions that could be deemed to be

personal (for example, their reasoning for donating their bodies) and given that these interviews took place on the phone, I felt that asking donors to talk a little about their lives would help to build rapport, helping them feel more comfortable answering some of the questions further on in the interview.

Furthermore, students were simply told that donors would be willing to provide any relevant medical history but were not provided with medical histories. The purpose of the interviews in Phase 2 was not to gather medical history, but instead to determine whether donors would be open to students receiving this information after they had passed away and donated their body. Regardless I felt that it would have been inappropriate to provide medical history that may have been collected during Phase 2 as it would bear no relation to the donors already in the DR.

Although this presentation was not initially designed to provide information about the act of body donation, it became apparent during Phase 1 that many students had little, if any, knowledge of the body donation process.

Furthermore, I hoped that learning more about the process donors go through might help to alleviate some of the anxieties raised by students during the Phase 1 interviews. I felt that by providing students with an understanding of the body donation process it would allow them to fully realise the impact of receiving donor information.

The presentation I designed is unlike anything else students receive within the medical curriculum at Leeds. First year medical students begin anatomy classes in January, having already completed one semester at university. In order to prepare for their upcoming anatomy classes, students usually attend "Introduction to Anatomy" sessions held in November. This class runs twice (for half of the year group each time) and each is comprised of two, one-hour parts:

- 1) In the first hour, students are split into 5 tutorial rooms, each with approximately 25 students. A tutor is assigned to each of these rooms, and they inform the students about the HTA rules and regulations they are expected to abide by whilst in the DR. Students sign compliance forms and complete a workbook with some simple anatomical terminology.
- 2) Immediately following the first hour, all the students (~125 in total) go into the DR where the donors are covered. Students are encouraged to

remove the coverings from the donors and use this time to touch the donors as well as become familiar with their new surroundings. Students are also provided with DR access cards during this class; however no formal teaching takes place during this activity.

With the second hour of this session running immediately on from the first, some students may find they do not have the time to reflect upon the information that has been routinely provided during the first half of the “Introduction to Anatomy” course, or even allow time to prepare themselves for entering the DR for the very first time. This was important to consider as during Phase 1, it became apparent that for some students their initial experiences in the DR were emotionally overwhelming; a finding which is also frequently cited in the literature (Penney, 1985; Snelling et al., 2003; Kotzé and Mole, 2013).

Therefore, students may not ask questions during this class, and may feel uncomfortable asking questions during anatomy classes at a later date, potentially resulting in a greater adverse reaction to the dissection course. It was my hope that providing students with information regarding the body donation process and the opportunity to ask questions throughout the presentation would help to alleviate any anxieties students may feel regarding this process. In turn, I hoped this might enable students to focus purely on the donor information I had collected during Phase 2 of this study.

## **7.2.2 Presentation recruitment**

The presentation was provided to two different cohorts of first-year students. The first presentation was given to Post-DR students (2017-2018 cohort) and the second was given to Pre-DR students (2018-2019 cohort). The reason that Post-DR students received the presentation first was that the ethical approval needed for Phase 3 to take place was not granted until the 2017-2018 cohort had already begun dissection. As a result, the Pre-DR presentation was delivered to the 2018-2019 cohort of first-year students.

### **7.2.2.1 Pre-DR Presentation**

I was provided with a timetabled slot on Thursday 4<sup>th</sup> October 2018, during students’ initial two-week period of introductory activities at the university. This meant I did not need to actively recruit students in the 2018-2019 cohort to attend my presentation.

### **7.2.2.2 Post-DR Presentation**

First-year students in the 2017-2018 cohort were informed about the presentation via an announcement by the year group co-ordinator on the VLE. The date and location of the presentation was specified in the invitation email which students received 2 weeks prior to the event. This presentation was ultimately scheduled to take place on Wednesday 2<sup>nd</sup> May 2018 and attendance was optional.

### **7.2.3 Follow-up interviews**

Following this presentation, students were invited to take part in a follow-up one-to-one interview to determine the impact of the information. Interviews were then transcribed prior to the completion of thematic analysis.

#### **7.2.3.1 Recruitment for interviews**

Students attending each presentation were asked to indicate their willingness to be contacted for interview by completing and handing in a small slip of paper.

I planned to interview up to a maximum of the same 10 students at both Pre- and Post-DR time-points, although this number was flexible. I based this decision on qualitative studies investigating medical student attitudes towards dissection. At the time this Phase 3 study was designed, studies of similar nature typically interviewed between 4 (Madill, A and Latchford, 2005) and 29 (Lempp, 2005) students. Furthermore, during Phase 1, between 5 and 9 students were interviewed during each stage and so this figure guided me when determining realistic participant numbers for Phase 3.

If more than 10 students indicated a willingness to be interviewed, those who were initially contacted via email would be selected using a random number generator (Bryman, 2008). Students who did not reply within one week of the first email being sent would be sent one more follow-up email. If they did not reply, then I assumed that they had changed their mind and no longer wished to participate in an interview.

#### **7.2.3.2 Development of an interview guide**

The Phase 3 interview guide (Figure 8) was developed using guidance from the available literature reporting on the impact of donor information on students. However, my study was the first to investigate this topic using qualitative

methods, and as such, interview questions were adapted from the questionnaire format in which they had previously been reported (Crow et al., 2012; Bohl et al., 2013; Williams et al., 2014; Dosani and Neuberger, 2016).

- 
1. How did you feel about the presentation?
  2. What aspects of the presentation did you enjoy?
  3. What aspects of the presentation did you dislike?
  4. How could the presentation be improved?
  5. Do you think this type of presentation should be included every year for medical students? Why/why not?
  6. What aspects of the presentation do you feel are important?
  7. Did you learn something new? If so, what?
  8. What about the presentation has left the biggest impact on you?
  9. How do you think the presentation has impacted your views towards the anatomy laboratory experience?
  10. Will you change any attitudes or behaviours as a result of the presentation? If so why/why not?
- 

**Figure 8 Medical student one-to-one Phase 3 interview guide. Questions highlighted in blue have been directly taken from a study conducted by Dosani and Neuberger (2016).**

## **7.3 Findings: Presentation attendance and interview recruitment**

### **7.3.1 Pre-DR cohort**

Approximately 240 first-year students in the Pre-DR cohort attended the presentation on body donors and donation.

Following the presentation, 48 students expressed a willingness to be contacted for interview. As stated in the methods chapter, I aimed to interview up to a maximum of 10 students in each part of the study, and so I randomly selected and contacted 15 of those who had said they were willing to take part. I contacted more than the number I had wished to interview to allow for drop off rates. Ultimately, 9 of these students agreed to, and participated in, a one-to-one interview. After interviewing 9 students, I made the decision not to contact others who had expressed an interest in this study. The reasoning behind this was that upon analysing this dataset, the same themes were recurring, and no new codes were becoming evident (Guest et al., 2006). This indicated that I had

likely reached a point where data was rich enough for the purposes of this study (Fusch and Ness, 2015).

### 7.3.2 Post-DR cohort

The presentation for Post-DR students was scheduled to take place once a full term of dissection classes had been completed and 27 first-year students attended. Following the presentation, 14 students expressed an interest in participating in an interview and all were emailed with further study information and to arrange an interview. However, only 4 of these students were successfully contacted and interviewed.

## 7.4 Findings: Student interview analysis

Following thematic analysis of all interview transcripts, similar subthemes were established at both Pre- and Post-DR time points (Figures 9 and 10). As a result of this, I decided to combine the findings from each set of interviews for reporting. This also enabled me to conduct an accurate comparison between the responses provided by both Pre- and Post-DR student groups. Subthemes were then collated to generate two main themes: *“The donor as a person”* and *“Student reactions to the presentation”*.

I have indicated whether the following quotes were made by a student Pre- or Post-DR, as well as including a participant number (i.e. Pre-DR P1 = Pre-DR Participant 1, Post-DR P12 = Post-DR Participant 12).

**Diagram showing the 2 main themes and 8 subthemes derived from the Phase 3 student interviews**

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The realisation that donors are people

**Figure 9 Themes (on the left) and subthemes (on the right) following thematic analysis of Pre- and Post-DR interviews with Theme 1 and its associated subthemes highlighted in blue.**

#### **7.4.1 Theme 1: The donor as a person**

This theme consists of four subthemes: *“The realisation that donors are people”*, *“Student-donor relationships”*, *“The impact of donor messages on students”* and *“Student reactions to donor motivations”*.

#### 7.4.1.1 The realisation that donors are people

The presentation appeared to remind Pre-DR students of how donors are real people and not purely a learning tool:

*“I know it is just a body, but it was a person. So, I’ll think more of it as you know, the person who gave this.” – Pre-DR P1*

*“It’s someone donating their body, the most precious thing that you actually have in this life.” – Pre-DR P4*

*“So, it sort of changed my perspective on it a bit, because I thought it would like just be, you go in, you cut it open, you learn” – Pre-DR P2*

*“[...] when you actually stop and think actually, these are people and like someone who you could have seen just in the streets before something like that, you could have walked past them, I think it’s that realisation” – Pre-DR P9*

*“Many (people), maybe even including myself, could miss the whole part of you know, that person being an actual person, getting to know them, getting to know motivation and stuff, we could just see the body as a body. [...] Well, this kind of talk helps us to understand” – Pre-DR P5*

The final student went on to say:

*“It made me understand that, you know, there is more to the body than the medical ... the anatomy we actually see, but more to the person that used to be. Who the body used to belong to.” – Pre-DR P5*

I find the comment “*who the body used to belong to*” to be particularly interesting. It could imply that this student believes people no longer ‘own’ their bodies once they have passed away, a view that may have been influenced by their cultural or religious beliefs. Although the student did not provide an explanation as to who they thought ‘owned’ the donor’s bodies, it is possible that they now perceive the donor to be ‘property’ of the university. This viewpoint could cause students to treat donors as a learning resource that the university provides, placing donors in the same category as textbooks and plastic models. Viewing donors in the same way as replaceable inanimate objects could provide one explanation for the behaviour by some students described in Phase 1, that suggested a lack of student care towards donors.

A further relevant finding was that the presentation appeared to prompt Pre-DR students to consider the body in its entirety, rather than as the individual components it comprises:

*“Instead of it being ‘oh this is just an organ’, it’ll be ‘oh this is an organ, actually from a person’.” – Pre-DR P8*

One student suggested that this mind-set could be beneficial in future practice, highlighting a potential opportunity for developing student PIF through this type of presentation.

In this way, there is a recognition of, and potential to shape, what is often part of a hidden curriculum:

*“It’s so much more than just a piece of the body. It’s learning about the patient as a whole.” – Pre-DR P2*

Perhaps this kind of realisation could be an important step in encouraging students to begin learning how to view future patients as people, and not simply an illness.

In addition, another student reflected on how the presentation had changed their mind-set in the build-up to dissection:

*“I think it [the presentation] might have changed the way that I think and approach it [dissection]. More on a personal level. It sounds terrible but thinking of them more as humans rather than [...] more as people rather than humans.” – Pre-DR P7*

The phrase “*it sounds terrible*” could indicate that this student feels guilty, or is afraid of being judged, for not previously having had the perspective that donors are people. It is also worth highlighting how the student seems to be struggling with finding the right words to describe donors. I would be interested to learn why some students find it difficult to know how to refer to donors in the DR, exploring why they don’t seem to be comfortable with viewing them as people.

The following Pre-DR student predicted that, once they began dissection, they might easily lose sight of the donor being a person. They recognised that the presentation could play a part in preventing students from experiencing this shift in attitude:

*"[...] you don't, when you're in that moment, you never think 'this was someone's grandad, this was someone's mum' and like, it will hit you eventually but when you're doing it, you're sort of in the moment. It's like 'ahh dissection, let's learn about the anatomy', but to think of them as just a person who goes about their day-to-day job, and that one day a medical student is going to be learning from, it did hit home quite a bit."* –

**Pre-DR P6**

What this student describes could be interpreted in different ways. They might be anticipating the need to detach as a coping mechanism by viewing the donor purely as a learning tool. Alternatively, they might envisage becoming so engrossed in the dissections that they might overlook the fact the donor is a person.

Reflecting on a specific aspect of the presentation another Pre-DR student commented on the higher level of involvement that students in Taiwan have with donors and how this seemed to be particularly beneficial in preventing such high levels of detachment amongst students:

*"Obviously, abroad in Taiwan, [...] they're very linked to these people. Whereas I think maybe here it's not so much and I think that [...] detachment is what takes away these are people"* – **Pre-DR P9**

Learning more about student-donor interactions worldwide was also of interest to the Post-DR students. Particularly relating to the level of information about donors provided to students by other universities around the world, one student considered how the disclosure of such information could impact students:

*"If we had like a reminder, like I don't know, what the other countries had, [...] we could see right OK, this person did this in their life, this is what they liked, and these were their hobbies. Just like that, kind of a really small thing, but that would make such a big difference to the experience instead of desensitising us to everything"* – **Post-DR P13**

I find it encouraging how this student feels that learning donor information, even something as simple as their hobbies, could make a difference to the dissection experience. Interestingly, this information was not provided during this presentation, however this type of information is relatively non-invasive, and donors could be asked if they would mind providing it as part of the registration

process. At present, the university does not, as standard, collect in-depth information from registering donors, hence it cannot be provided.

Another Post-DR student also provided further evidence to support the provision of donor information, particularly how it might prevent students from ‘dehumanising’ donors:

*“[...] instead of just looking at their body, we can see the person now. Because right now they just dehumanise everything and it’s just like we’re cutting meat rather than cutting people” – Post-DR P10*

The comment of “it’s just like we’re cutting meat rather than cutting people” is somewhat concerning to me. If the student had not attended this presentation, then it is possible that they might be inclined to view the donor as a piece of “meat” as opposed to a person. This is not the first student interviewed in this study to liken the dissection process to working with a piece of meat, as comments of a similar nature were also made by students during Phase 1. Such findings could indicate there is a need for constant efforts to be made to ensure students continue to view the donor as a person throughout the dissection course.

#### 7.4.1.2 Student-donor relationship

Both Pre- and Post-DR students spoke about student-donor relationships following attendance at the presentation. However, the two groups of students appeared to have slightly different perspectives on this relationship.

Pre-DR students seemed to focus on how they felt that the role of donors was to act as a teacher to students:

*“They have donated their bodies, they want to help educate, you know, like the silent teachers they are.” – Pre-DR P9*

The use of the term “*silent teachers*” is intriguing, especially as when delivering the presentation, I was conscious not to use this phrase. Perhaps this student had heard this phrase used previously, although I am surprised that a Pre-DR student who has not yet even been exposed to the DR or received any information regarding the dissection course has expressed the student-donor relationship in this way. Another potential explanation for this could simply relate to the title of this PhD research, which includes the phrase “*The Silent Teacher*”

*Unveiled*”, and which students were informed of during the recruitment stages. Alternatively, this mind-set could have been prompted following the disclosure that the most commonly reported occupation by donors in this study was “*Teacher*”.

Learning this about the donors interviewed during Phase 2 also prompted another Pre-DR student to consider why teachers might feel more inclined to donate their bodies as opposed to individuals who have not worked in the education sector:

*“I think the idea of teachers definitely makes sense, because obviously they will have been in the classroom first-hand and seen how people learn best and quite often with science, it is a lot about doing, it’s not about the theory.” – Pre-DR P3*

The same student also went on to say:

*“So, if they have maybe a scientific background within academics, they might sort of think, or see it as something good to do. To like, give back.”  
- Pre-DR P3*

The comment “*to like, give back*” seems unusual. A teacher will have typically dedicated much of their life to the education of others, so it is unclear why this student feels that they might need to “*give back*” at the end of their life. In fact, I would argue that teachers will have been ‘giving’ in terms of students’ education for the entirety of their careers.

A particularly interesting finding was that neither Pre- or Post-DR students gave the same consideration to medical professionals, and how they appeared less inclined to donate their bodies, especially as they will have directly benefitted from the generous donations of these altruistic individuals.

In contrast, a different Pre-DR student reflected on how the majority of people who donate their bodies for anatomical examination have no obligation at all to do so, yet still choose to donate:

*“[...] even though they don’t know me personally, or anyone in the whole medical school, they do still donate their bodies for us. So, we can learn, so we can improve healthcare, so we can improve the whole medical*

*profession, so we can be better doctors for when time comes to treat patients; to make change.” - Pre-DR P5*

It appears that being given information about donors has encouraged students to consider both the enormity behind a person’s decision to donate their body, as well as the implications such donations have in helping students to prepare for their future careers. Perhaps the presentation prompted this student to recognise a higher level of appreciation for the donor’s gift.

In contrast to Pre-DR students, the Post-DR cohort did not tend to speak about donors as teachers, instead reflecting on their relationship with donors as one whereby they should be responsible for the care of donors.

One Post-DR student talked about how the presentation specifically had directly affected their behaviour during dissection classes:

*“It changed something in you, if that makes sense. Because now when I walk in, I know it sounds very stupid, but honestly sometimes I speak to them, I was like ‘oh it’s fine’ [...] ‘I’m so sorry I had to do that’, because I feel you know, they’re dead yes, but they’re human first.” – Post-DR P11*

The student seems to have become more protective towards donors and further invested in their care. This attitude was also demonstrated when the same student said the following:

*“I really really really hated actually, that sometimes people call them cadavers. I know it’s a very normal thing to say, but I feel like they are, yes, they are cadavers, but they’re human first. [...] but honestly, I didn’t want to call that person a cadaver” – Post-DR P11*

This student appears to feel strongly about the language some individuals use when referring to donors. The reasoning behind this could be that since the presentation they have become more aware of how donors are still people. The student seems to imply that referring to donors as “cadavers” is removing the element of humanity; something the student is clearly not comfortable with.

Another Post-DR student also commented on how the presentation had caused them to feel more responsibility for the care of donors, which they chose to communicate in the following way:

*“I thought that maybe you had more investment in your cadaver if you look after it and you have to make sure it’s ok. I know it’s not ... it’s like have a ... pet is the wrong word, but you take care of it and you make sure it’s yours and there’s a level of responsibility that comes with that, if you do it.” – **Post-DR P13***

The student used some interesting language to try and make their point. They were aware that a donor should not be likened to a “pet” but seemed unable to find a different choice of word. Likening donors to a pet may have been done by this student as a pet is unable to care for themselves and relies on their owner to do so. However, this choice of language raises questions as to whether this student might also feel a sense of ‘ownership’ over the donor, who they deem to be their property to “look after”.

Taking both this comment and those made by the previous Post-DR students into consideration, it seems to highlight the struggle and conflict regarding the choice of language that some students may experience when trying to determine how they can, or should, refer to donors.

#### **7.4.1.3 The impact of donor messages on students**

It was evident that both Pre- and Post-DR students in this study felt they were affected by the donor messages provided in the presentation. In particular, Pre-DR students suggested that receiving such messages had helped them to relate more to donors by reminding them that donors are real people:

*“[...] some of the quotes you put on the board were quite, erm, quite like very personal, very personal. And I got the sense that you could almost sort of hear their voices.” - **Pre-DR P7***

*“I can actually imagine, portray someone in front of me, saying these words. Whether it was a man, or woman, you know it could open my imagination and open my human connection with that person, although I didn’t know them or had no further information about them.” - **Pre-DR P5***

When specifically asked about the impact of the donor messages, another Pre-DR student spoke about the messages having an emotional impact on them by emphasising the humanity of donors:

*“[...] when you think of a body in your head, you probably kind of have to think of it as just a body, because otherwise you’d get too caught up in ‘this is a person’ and you’re cutting this person up, ‘why are you doing that?’, so it was weird to think about the person before the body on the table. So yeah, I did feel a bit emotional about that. But it was good, it had an effect.” - Pre-DR P1*

It seems as though this student is conflicted in their emotions after having attended the presentation. On one hand they appear to be under the impression that they shouldn’t get “*too caught up*” thinking about the donor as a person in a bid to remain detached and be able to focus on dissection. Conversely, they also seem to appreciate that reminding students of how donors are people, by providing such messages, could have a positive outcome.

A different Pre-DR student commented that they felt it was important to establish a line of communication between donors and students. They felt that this would allow students to have an insight into the donor’s wishes, particularly how they hoped that students would treat their body:

*“[...] the person who said, ‘please treat my body with respect’. Erm yeah, that’s still resonating in my mind, so yeah, that was definitely very powerful.” - Pre-DR P4*

The student went on to explain why they felt the messages were so “*powerful*”:

*“[...] we will not have the ability to communicate with these people, obviously. So, having that message beforehand, and knowing that this is what this person, who has donated their body wants you to do, [...] is extremely powerful and very very meaningful” - Pre-DR P4*

It is interesting that this student specifically remembered the quote from a donor who had asked students to “*treat my body with respect*”. If this type of message resonates with students, then it could be possible that such thoughts will remain with them whilst they are in the DR and positively influence their behaviours as a result. I found it particularly interesting that throughout Phase 1 of this study, students had been conscious to reiterate how they understood the importance of showing donors high levels of respect. Comments of this nature from both the donor and students further highlight the need to develop a clearer understanding of how we define the term respect in relation to dissection and

the DR. However, hearing this wish directly from a donor who had asked for students to treat their body with respect appears to have highlighted the importance of students being made aware of donors' wishes.

Furthermore, one Post-DR student also reported being affected by the messages from donors that were asking for students to show them respect:

*“And actually, to see those messages, like the ones at the end ... it really touched my heart. I was like, they want it for a good cause and the most thing they want is respect.” – Post-DR P11*

Learning that donors are giving their bodies and in doing so hope that they will be shown respect, may have had an impact on this student as a result of their personal experiences in the DR. Previously, during Phase 1, students with dissection experience recounted their observations of what they had considered to be disrespectful behaviour displayed by their peers in the DR. Post-DR students now finding themselves face-to-face with donor messages could cause feelings of empathy (towards donors, due to what they have witnessed), or even guilt (because of their own inappropriate actions in the DR). As such, messages of this kind could form a key part in student development of PIF by encouraging students to reflect on their actions in the DR and whether they might be appropriate.

#### **7.4.1.4 Student reactions to learning donor motivations**

Both Pre- and Post-DR students reflected on how learning donor motivations had affected them. Some Pre-DR students simply commented on how they found learning donor motivations to be particularly interesting:

*“I like learning about different people, and I like learning about different backgrounds and why they want to get involved.” - Pre-DR P6*

*“I found it so interesting when you mentioned the reasons why everyone donates.” - Pre-DR P5*

On the other hand, another Pre-DR student specifically commented on how learning donor motivations had led them to develop an increased appreciation for the opportunity donors had provided them with as part of their medical training:

*“[...] it definitely made me appreciate a lot the reason why these people are donating their bodies to science [...] If I did not attend this lecture, I would not have appreciated the story behind it. That this person actually decided to do this, decided to donate their body to science so that I can learn and become a better doctor. It’s for my own good that they’ve done this to themselves.” - Pre-DR P4*

This statement raises some interesting points. Firstly, I find it concerning that this student felt that the main reason they were able to appreciate the generous gift a donor gives, was because they had attended the presentation. A comment of this nature raises questions as to why this student did not feel they would have had the same level of appreciation towards donors without hearing directly from them. Although it does also provide evidence of one of the potential benefits of establishing a line of communication between donors and students. The final comment of *“they’ve done this to themselves”* could be the student’s attempt to absolve themselves of any guilt they might feel about the prospect of dissecting a person’s body. Such a statement could imply that this student feels the donor has undergone what might be deemed as, a ‘less favourable’ act for the benefit of education. Alternatively, it might be that the student’s religious or cultural beliefs have led them to hold this view.

Furthermore, this student seemed unaware that people make the conscious decision (and give fully informed consent) to donate their bodies for the educational benefit of students. The comment *“this person actually decided to do this”* could be interpreted as something said in shock that someone would actively make this decision in life. This finding also poses the question as to where students thought the bodies for anatomy class were coming from prior to learning the details of this process.

A different Pre-DR student commented how they felt it had been useful to be encouraged to view the situation from the donors’ perspective:

*“I never had kind of thought about it from the other, you know, from the perspective of the person who’s giving their body. Erm, my friend’s grandad gave his body and I remember thinking at the time, like ‘oh’, I just couldn’t really understand. But kind of listening to your talk, I understood it a little bit more [...] there is a thought process behind giving*

*your body. You don't, I just don't think people do it [body donation], but they do."* - **Pre-DR P1**

It was interesting to hear how this student did not appear to have given prior consideration as to why people donate their bodies, despite having a connection (albeit distant) to someone who had donated their body.

If taken into consideration alongside the comment made by the previous student, this statement might highlight how students do not give much thought to the donors prior to entering the DR. Students may take it for granted that bodies just 'appear' for them to dissect, without any real awareness of the act of body donation. An argument could be made that such unawareness of the donation process, including acknowledgment of those who donate, could result from students trying to remain objective in the build-up to entering the DR. Remaining detached from all information of this type could be used as a coping mechanism in the early stages of the anatomy course. Alternatively, this finding could demonstrate a clear gap in the students' knowledge that needs to be filled. Perhaps if students were reassured about the process a donor goes through then they might approach dissection with more confidence and be less inclined to 'objectify' donors as a means of coping with their emotions (a practice implied by a majority of the students interviewed during Phase 1).

Only one Post-DR student specifically commented on the donor motivations. Interestingly it was the same (and only) Post-DR student who had previously commented on the impact of donor messages:

*"But I have SO much huge respect for people who can do this. And seeing their own reasons, seeing why they do it, just made me feel like 'oh they're my heroes'. They can do something I can't do. Not because, it's not just cultural, it's the mind-set"* – **Post-DR P11**

This comment suggests that learning donor motivations has had a profound impact on this individual who acknowledges having a deep-rooted respect for donors' actions and chose to refer to them as "*my heroes*". Perhaps this student feels a sense of appreciation and respect felt towards donors and places them in a position of 'role models'. This seems particularly relevant as a person may treat a role model more favourably in comparison with how they might act towards others, particularly when considered within the context of some cultures

and religions. If all students, regardless of personal beliefs were to view donors as role models, then perhaps there would be less reports of what students perceive to be disrespectful behaviour in the DR towards donors.

In addition, this student touches on how they do not feel they would be able to donate their own body, stating that it is not just their culture that would deter them, but also their own mind-set. It would be interesting to explore whether this stance is linked to experiences, which have been shared by more than one student (including those interviewed at Stage 4 during Phase 1), regarding the observation of disrespectful behaviour in the DR. Perhaps witnessing this type of behaviour has negatively influenced the view of this student concerning body donation. It is possible that, if student behaviours towards donors were to change upon learning more about donors, more students would feel inclined to donate their own bodies.

It appears that learning donor motivations has increased both Pre- and Post-DR student appreciation of donors. This evidence could provide support regarding the provision of donor information to students and could even play a role in encouraging the formation of desirable attitudes and behaviours to be displayed by students in the DR.

#### **7.4.2 Theme 2: Student reactions to the presentation**

This theme consists of four subthemes: *“Student respect towards donors”*, *“Increased confidence in the DR”*, *“Confrontation with mortality”* and *“Student concerns regarding observed behaviours in the DR”* (Figure 10).

Diagram showing the 2 main themes and 8 subthemes derived from the Phase 3 student interviews

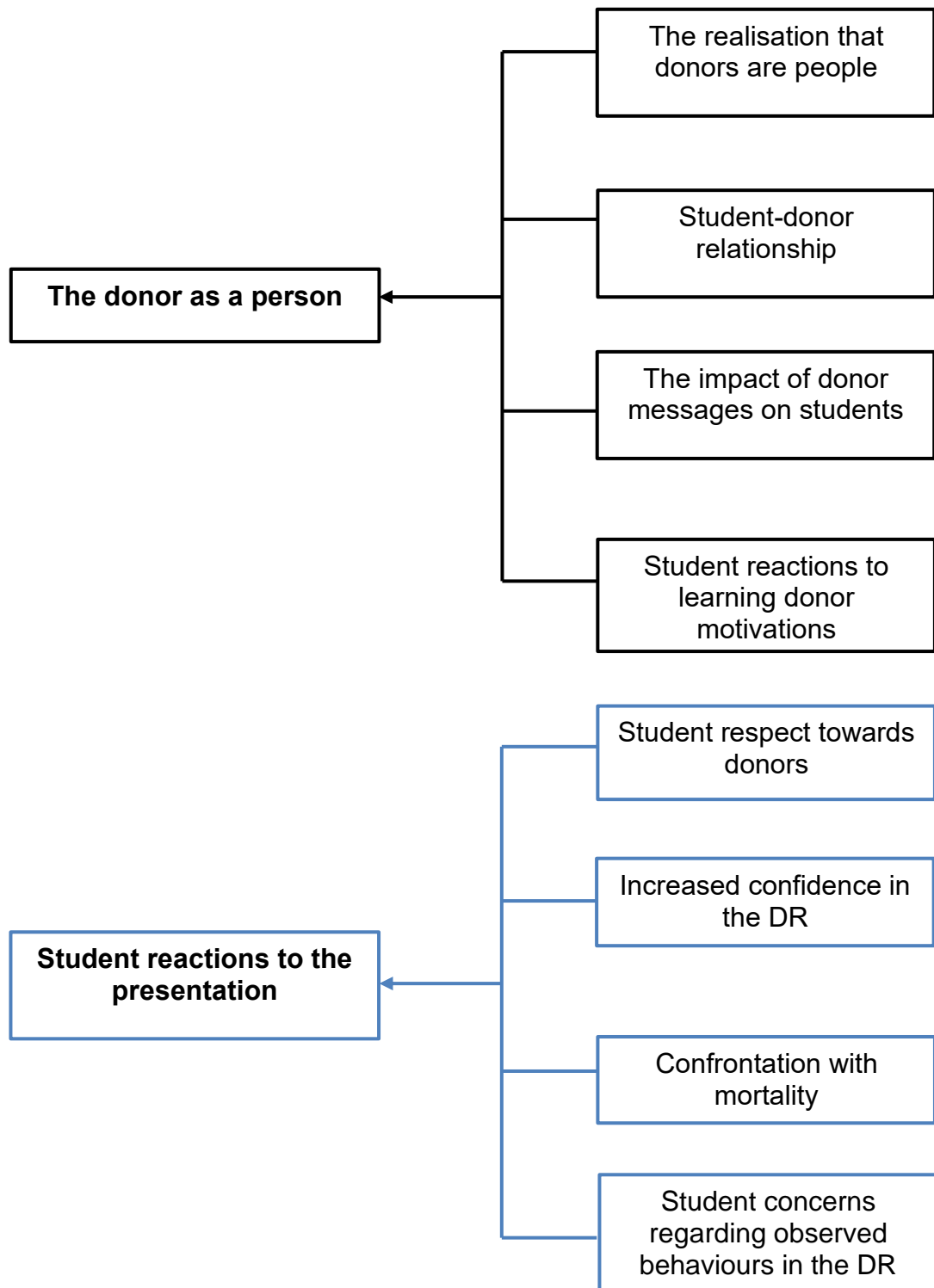


Figure 10 Themes (on the left) and subthemes (on the right) following thematic analysis of Pre- and Post-DR interviews with Theme 2 and its associated subthemes highlighted in blue.

#### 7.4.2.1 Student respect towards donors

Following the presentation, Pre-DR students commented that they felt compelled to treat donors with respect:

*“I respect very much this whole process and that would make me respect more and have a better treatment of the body” - Pre-DR P5*

*“It’s about respect at the end of the day, and like someone has donated their body [...] It should be treated with a lot of respect.” - Pre-DR P3*

Much like the Stage 1 students with no DR experience interviewed during Phase 1, Pre-DR students in Phase 3 were keen to emphasise that they did not anticipate themselves acting disrespectfully in the DR. Seeing the images of how bodies in the DR had been treated by medical students historically, seemed to prompt students to consider whether there were ways in which they could ensure they maintained a respectful attitude towards donors in the DR:

*“I mean, I would like to think that I would never be disrespectful, but definitely seeing those pictures, like seeing people writing on the benches, it’s just going to make me a little bit more careful and cautious of my actions like around the person [...] I think actually seeing it, brought to light how important it is to respect what we are doing.” - Pre-DR P3*

*“[...] it kind of disgusted me that people used to do that and not think that it was wrong. So, I think it’s quite good for us to see what is wrong. And then hopefully we will behave a bit better.” - Pre-DR P8*

It is unclear whether simply telling students, without the visual aids, how medical students treated bodies during anatomy classes historically would have prompted the same response. Comments like the above could provide evidence for the benefits of routinely educating students on the history of anatomy, with the hope of promoting respectful attitudes towards donors during anatomy classes.

One Pre-DR student focused on how donor messages, specifically, could be a useful way of encouraging all students to appreciate the level of respect that is required when interacting with donors:

*“Well, I think most medical students like me, we will always treat donated bodies with respect. But maybe that doesn’t apply to everyone. Maybe the amount, percentage of respect would differ from a person to a person. But by having this talk and by having almost communicated with these people that are donating their bodies through these messages, I think it changed.” - Pre-DR P4*

This student also highlights an important factor that needs to be considered. Although the majority of students will show respect towards donors, there is potentially a minority who might not. However, at the same time, I feel it is also necessary to take into account how everyone’s perception of what it means to be respectful, and what constitutes respectful behaviour, will vary (as previously noted in Phase 1). What is deemed acceptable by one individual may be frowned upon by another. Perhaps students need to be provided with universally accepted and clear guidelines as to what is considered to be respectful behaviour that they are expected to display in the DR.

Surprisingly, a Post-DR student, very honestly, commented that they felt that they (and their peers) were being, or had been at some point, disrespectful towards donors:

*“I feel like some of us don’t really treat cadavers or like donors with respect. [...] it’s [the presentation] kind of helped you bring out that message as well, you know? Of respecting the cadavers and the donors in the DR” – Post-DR P12*

It is particularly interesting to learn of this student’s confusion and conflict as to whether they should call the bodies in the DR cadavers or donors. Such uncertainty was also displayed by other Pre- and Post-DR students in Phase 3, as well as by students interviewed during Phase 1. The student’s confusion could stem from misunderstanding the definitions of each term, or they might be experiencing internal conflict as to whether it is more appropriate for them to call these people donors, or cadavers. Comments like this highlight a potential need for students to be provided with a common term to refer to donors by – for example, ‘donors’, which could be perceived to be more personal than the term ‘cadaver’, or even the donors first name, hence further emphasising the humanity of donors.

In addition to the comment by the above student, another Post-DR student also commented on how the presentation had caused them to reflect on their own behaviour in the DR. This led them to question whether their actions during anatomy class had always been entirely appropriate:

*“In some ways it made me a bit uncomfortable because I was like, how have I been treating it [the donor], like even when you rest a book on the cadaver in a session and you’re like actually ‘no, that shouldn’t really be done’ and things like that. Like, I don’t know, it was ... yeah. It made me think a lot more” – **Post-DR P13***

The presentation seems to have altered the way in which this particular student might approach donors moving forward. However, this finding also suggests that students could benefit from receiving the information provided during the presentation prior to commencing dissection. Disclosing this information at an early stage of the medical degree could help ensure students are more mindful of their actions and behaviours in the DR from the very beginning of the anatomy course.

Another factor that seemed to contribute to students’ motivation to remain respectful towards donors in the DR did not appear to be linked to the presentation itself. Instead, it appeared to stem from a personal link to someone who is either thinking about, or has, donated their body for anatomical examination:

*“I mean, I was going to be respectful anyway, but you’re going to take it above and beyond and you’re going to be like very protective. Especially because my grandad is thinking about it so I’m going to view it as ‘what would I do if someone else was with my grandad? What would I do if it was my grandad on the anatomy table?’” **Pre-DR P6***

*“I think I would have been pretty respectful as it was anyway. Honestly, I mean I know someone who has donated their body and I think that’s probably given me a different perspective maybe to other people who haven’t.” - **Pre-DR P9***

These comments suggest that knowing who donors are is likely to alter student feelings towards them. If all students were to be provided with some form of

donor information, then they would all have the same opportunity to 'form a relationship' with donors. However, this type of exercise would rely on a large majority of donors being willing to provide such information for students.

The comments made by Pre-DR students during interview seem to imply that students anticipate the DR to be a very respectful environment, whereby all students will act appropriately and professionally. In contrast to this, the comments provided by Post-DR students suggest that, in reality, not all students behave in a manner which they believe to be respectful. This is not too dissimilar to the findings in Phase 1, when students with more extensive dissection experience were more likely to report having observed less favourable behaviour in class. However, it is encouraging that students attending this presentation began to reflect on their own behaviour and how this could potentially be improved.

#### **7.4.2.2 Increased confidence in the DR**

Only Post-DR students spoke about increased confidence in the DR. In one instance, a greater understanding of the donation process led to one Post-DR student feeling more confident when going to anatomy class:

*"I just know a lot more about the whole process. [...] like I just feel a lot more confident going in, knowing every, things about the donors"* – **Post-DR P10**

Previously, students were unlikely to have been told about the donation process in detail as this is not something routinely discussed in the medical curriculum at Leeds. The information could have been found online. However, throughout all phases of this study it was apparent that students had not come across this information for themselves. In light of this finding, it seems reasonable to suggest that the best time to provide students with more information about the donation process might be prior to entering the DR for the first time. Equipping students with as much information and knowledge about dissection and donors early on in the course could help with any anxieties students may be feeling in the build-up to anatomy classes commencing, something that was also noted during Phase 1.

Further support for this suggestion was provided by a different Post-DR student, who reported feeling more confident following the presentation due to reassurance that donors had consented for their body to be used in this way:

*“[...] now when I go to the DR, like just now before I came here, I was confident dissecting. I was fine with it, because I know that person is OK with me to actually dissect their body. [...] I know they consented, so I don't feel as bad.” - Post-DR P11*

It seems this student may not have felt entirely comfortable when dissecting prior to the presentation. However, following assurance that donors have given informed consent for their bodies to be used in this way, the student's attitude seems to have changed, leaving them with a renewed sense of confidence during anatomy class, suggesting a further way in which this presentation may have contributed to PIF for students.

It is likely that Pre-DR students did not comment on increasing confidence in the DR because they did not have any first-hand experience in the DR to reflect upon. Alternatively, it is possible that the Pre-DR students did in fact feel a confidence boost following attendance at the presentation but did not feel as though it was relevant or appropriate to comment upon, given their lack of experience. With an increased level of confidence, it could be argued that students would be less likely to turn to coping strategies, such as depersonalisation. This might help to prevent students from viewing donors purely as a learning tool by developing the skill of detached concern, which could in turn prevent the display of undesirable behaviours and attitudes by students in the DR.

#### **7.4.2.3 Confrontation with mortality**

A large proportion of students will have made the decision that they wanted to study medicine many years ago, especially as the process of applying for and being accepted is long and competitive. This presentation appeared to cause some Pre-DR students to have the sudden realisation that they were finally studying for the degree they had been working towards and caused students to reflect on the enormity of what lay ahead of them:

*“It reminded me ‘right ok, we are here now, this is serious stuff’. It was kind of like as a medical student we are dealing with real human beings*

*now [...] I think it kind of actually brought it home, and I think that's why it was complete silence. People were like 'this is actually it now'.* - **Pre-DR P7**

The presentation seemed to prompt some Pre-DR students to think about how, during their careers, they will be working with patients at all stages of life. Taking the time to reflect upon this, two students appeared to question whether they were sufficiently emotionally prepared to begin dissection classes:

*"[...] I feel like the talk about obviously cadavers and anatomy, it's finally hitting people that you are going to see people who have passed away, you are going to have to work with obviously dissection and I think some people it hasn't actually hit home with them."* - **Pre-DR P6**

*"[...] some of the stuff it was like 'am I going to be ok doing this [dissection]?' ... 'am I going to feel awful doing this [dissection]?' Obviously, I don't know, and I won't know until I've done it"* - **Pre-DR P3**

It appears that these students had not given much thought to the fact they would be working with the deceased from such an early stage of their careers. Although students may think they are prepared, due to prior work experience, it is unlikely they will have extensive experience of working with the dead, let alone placing a scalpel to skin.

The above reflections on their preparedness prior to the commencement of anatomy classes, highlights how early in students' medical degree the process of PIF can begin.

Feeling emotionally unprepared when commencing dissection could lead to students choosing to utilise coping strategies in order to deal with any potential negative emotions they may be experiencing. As I suggested previously, this mind-set could lead to students becoming detached from donors which could, in turn, lead to the development of undesirable behaviours and attitudes in the DR. If students felt better prepared emotionally, they might be less inclined to implement such coping mechanisms.

One Post-DR student reflected on their initial experiences in the DR and how they had felt unprepared during their introduction to the DR:

*“I thought that first session was going to be like what like that presentation you did for us. I walked in thinking ‘OK this is going to be the prep session. [...]’, and then they were like ‘Oh yeah, we’re going to go in [the DR]!’ And I was like ‘What! You didn’t tell us this’ [...] so I was shocked. I was a bit like ‘Oh my god, I’m just about to go into a room of 23 dead people and they didn’t tell us’” – **Post-DR P10***

It appears this student found the way they were introduced to the DR to be somewhat unexpected and stressful. They had been expecting a preparation session, whereby they would learn more about body donation and what to expect in the DR. Not to enter the DR in a way that left them feeling unable to fully prepare themselves in the way that they had hoped. Furthermore, they seemed to feel that the information regarding their introductory session was unclear.

The same student went on to say the following:

*“It would have been much nicer if they had just eased us into it a bit more, rather than just throwing us in to a room and going ‘Hey, go look, there’s dead bodies’ [...] I don’t know, it just felt really odd that they desensitise us so much from it” – **Post-DR P10***

The student’s recollection of their first experience in the DR is interesting and is certainly not the way that the introductory session is designed to make students feel. They have used particularly emotive language stating they felt like staff were *“throwing us in to a room”*. This seems to imply the student was forced into the situation; however, they were not, and students are always given the option to leave the DR, should they wish to. Further exploration would be necessary to try and establish why this student was left feeling this way.

#### **7.4.2.4 Student concerns regarding observed behaviours in the DR**

Attendance at the presentation caused some Post-DR students to reflect on experiences in the DR, particularly on some of the less favourable behaviours they had observed from their peers:

*“I see what other people are doing in the DR. I see what my peers do, like from what I’m seeing, it completely puts me off even thinking of donating myself”. – **Post-DR P10***

This comment is particularly interesting as the same sentiment was echoed by Stage 4 students (those with the greatest amount of dissection experience) interviewed during Phase 1. I find it a little surprising that Post-DR students with just one term of dissection experience were already of this opinion, especially as concern regarding students donating their own bodies had not previously been described by participants at a similar stage of dissection (Stage 2) during Phase 1. However, the lack of student willingness to donate, highlighted as part of this study, typically seems to stem from observing the way their peers have behaved in the DR and not feeling comfortable with what they have seen. This finding could be accounted for by the Post-DR students in Phase 3 having attended the presentation, therefore having not only an increased awareness of donor motivations and messages, but also how donors are treated by other medical students worldwide.

The same student suggested how such undesirable behaviours could be prevented, showing clear frustration at the way in which their peers are viewing the donor:

*“I feel like people would not do things that they are doing if there was a constant reminder to say ‘Look, this person was a human ... this person was a human being that had a life that donated his body for us’ kind of thing” – Post-DR P10*

Students often report how quickly they ‘forget’ that the donor is a person. This viewpoint was also evidenced in the earlier Phase 1 study and could explain the way in which some students act in the DR. The above student makes an interesting suggestion that if students were provided with reminders of the donor as a person throughout the dissection course, then they might alter their behaviour in a positive way, as they might find it more difficult to achieve the high level of detachment from, and depersonalisation of, donors that students are able to at present. However, it is also equally important to consider any potential detrimental impacts that the provision of donor information might have on students.

Another Post-DR student also shared their concerns regarding observations of peer attitudes in terms of the care of donors in the DR. They commented on how these feelings had been amplified following their attendance at the presentation:

*“[...] after your presentation, I would go in there and I started to be more aware you know, of people leaving sometimes the body uncovered and I started to actually cover the cadavers” – Post-DR P11*

It seems that the presentation has caused this student to become more protective towards the donors and more invested in their care and preservation, with a notable change in their own behaviour during dissection classes. A possible explanation for this could be that the student now feels more invested in the donor as a person upon receiving a reminder that donors are not purely learning tools, but people.

## **7.5 Student feedback on the presentation**

In response to questions 2-4 asked during the Phase 3 interviews (Figure 8), students provided feedback on the presentation. Students commented on the following: the timing of the presentation, the content (what they enjoyed, what additional content they felt could have been included), who was the most suitable to present the information, as well as feedback on the way in which the information was presented. Quotes from the interviews to support these findings are presented in Table 8.

### **7.5.1 Timing of the presentation**

All of the student feedback on the timing of the presentation provided support that this information should be provided to students *prior* to them entering the DR. Students suggested that moving the presentation closer to dissection commencing might be more beneficial. It is interesting to note that both Pre- and Post-DR students held this viewpoint. The feedback from Post-DR students is especially insightful as they have had the experience of the DR and can confirm that this information would have been useful in terms of helping them to prepare for the dissection experience.

### **7.5.2 Content of the presentation**

Students provided feedback regarding the content they felt was particularly important, as well as providing suggestions concerning what additional information they felt could be included in the future.

#### **7.5.2.1 Information students enjoyed**

The history of anatomy and the importance of the laws and legislations governing body donation and anatomical education were of particular interest to students. Aside from this, students enjoyed learning about how anatomy is taught, and how students interact with donors in the USA and Asia. Whilst it should be highlighted that this information was not directly requested by students during Phase 1, it was content that I had decided to include as a result of the apparent lack of knowledge on these subjects. Interestingly, all the comments relating to this feedback was provided by Pre-DR students, confirming that these students deemed this information to be relevant.

#### **7.5.2.2 Information students felt was lacking in the presentation**

Pre-DR students were keen to receive more information regarding the logistics of how their anatomy classes will run, as well as learning more about how, and by whom, dissections are prepared. There was also interest from Post-DR students in receiving details about how anatomy is studied at other medical schools in the UK. Finally, a Post-DR student reflected on how they would like to hear more from donor family members, specifically how donor families feel about their loved one's decision to donate.

#### **7.5.3 Who presents the information and how it is presented**

As well as commenting on the content of the presentation, Pre-DR students gave feedback on the way in which the information was presented. This included suggestions about who might be the most suitable person/people to deliver it. Students particularly enjoyed being given the opportunity to read the donor messages I had included in the presentation in silence. They felt it had allowed them to interpret the messages in their own way and reflect on what they had read. One proposed area for improvement was inclusion of other presenters to talk about the different topics in the presentation, rather than the same presenter throughout. Only Pre-DR students commented on this theme.

Student Feedback	Quotes to evidence student feedback
Timing of presentation	<p><i>"Maybe a little bit later on perhaps, so it's more inclusive, rather than more fragmented. As in 'here's the talk, and then after Christmas we are going to be starting anatomy'." - <b>Pre-DR P9</b></i></p> <p><i>"[...] maybe closer to the day would have been more helpful because it would be more relevant, I think." - <b>Pre-DR P4</b></i></p> <p><i>"[...] it's definitely something that you need to say before you get into the anatomy lab." - <b>Pre-DR P2</b></i></p> <p><i>"[...] I think it might make sense actually to have it, or at least aspects of it in January" - <b>Pre-DR P7</b></i></p> <p><i>"So that's how I was like 'oh, I have a rough idea', but I feel like if that presentation as like before I go to the DR, I feel like a) It will take off the fear in the beginning and it will help you to actually appreciate them" - <b>Post-DR P11</b></i></p> <p><i>"Like before the first anatomy session or during introduction week." - <b>Post-DR P12</b></i></p>
Content students enjoyed	<p><i>"It's important to know about history and how we've come a long way [...] It's important to understand why we do have such rules and regulations for medical students I think." - <b>Pre-DR P4</b></i></p> <p><i>"But I liked learning about that, because I felt it was quite interesting to see how it's evolved, and like the different laws and things have come in to concept and how they're going to affect us in the long run." - <b>Pre-DR P6</b></i></p> <p><i>"[...] I liked looking at that and seeing how we've kind of moved on from those sort of barbaric times." - <b>Pre-DR P1</b></i></p> <p><i>"That was important, because we need to understand why this framework exists. That we can no longer put skeletons with cigars and be like 'yeah, that's fine!'. We get to understand how things are in the present and not perform the same mistakes as in the past." - <b>Pre-DR P5</b></i></p> <p><i>"Taiwan! Where the medical students are so involved with the family, and kind of taking it out of a clinical aspect and kind of more a kind of cultural, social side to it. I thought that was very interesting." - <b>Pre-DR P7</b></i></p> <p><i>"I liked learning about, you know, the Taiwan, their sort of culture of doing it, because I thought that was really interesting and it's like a really personal experience." - <b>Pre-DR P6</b></i></p> <p><i>"So, I enjoyed hearing about how it's done in Taiwan, because I never knew that this is how it's done over there erm and in the US. So, I enjoyed the comparison between the different countries and how the UK differs." - <b>Pre-DR P4</b></i></p> <p><i>"Erm, I found it really interesting looking at like how anatomy differed in different countries, because I was, I sort of just assumed that everyone did it like England. Like very much anonymous." - <b>Pre-DR P3</b></i></p>

<p>Content students asked to be included in the future</p>	<p><i>“Just maybe some information about what exactly anatomy sessions will entail although that’s not fully the point of the talk” - <b>Pre-DR P3</b></i></p> <p><i>“So maybe a bit more information about how you get from the body and all the process that you talked about, and then who does the prosecting and how does it work” - <b>Pre-DR P8</b></i></p> <p><i>“I thought maybe looking at other practices around the UK. I know we looked at, was it Dundee? I thought maybe we could look at different practices” <b>Post-DR P13</b></i></p> <p><i>“If we can get an understanding of what the family members feel, that would be great because yeah, sometimes there can be conflict between the donor and the family and that’s a part of their story any way as well” – <b>Post-DR P12</b></i></p>
<p>Delivery of the presentation</p>	<p><i>“Yeah, I think that was probably best. I think it gives people time to think about it and read rather than just listen [...] If you’re reading it yourself you can do it in much shorter time, and you’ve got a bit of reflection time.” - <b>Pre-DR P9</b></i></p> <p><i>“It’s a bit of a meaningful message that you don’t want to be shouting out to everybody, well in my opinion it’s not something you’d want to say, and I think just putting them up gave us a chance to read them and take them in as we wanted to. You know, we weren’t affected by the way you said it. We could read it in our own heads and make sense of it in our own way.” - <b>Pre-DR P1</b></i></p> <p><i>“It was nice. And you could take it in a lot more, and I think it also made it a lot more impactful because often you can sometimes sort of zone in and out of someone talking, whereas if you’re reading it, you’ve got your full attention on it, and you fully absorb the information.” - <b>Pre-DR P3</b></i></p> <p><i>“Yeah, because a lot of lecturers now, they talk over the top and I can’t focus. [...] If you just let everyone read them because everyone reads at different paces as well.” - <b>Pre-DR P6</b></i></p> <p><i>“But maybe to make it more interesting, if we had another speaker to talk for a few minutes. Maybe another person who works in the anatomy department or maybe a member of the family of the people who did decide to donate their bodies. Maybe if they were to deliver some part of that lecture or talk. [...] Maybe having one of them talk to us, I would have appreciated that.” - <b>Pre-DR P4</b></i></p>

**Table 8 Examples of student feedback regarding the presentation delivered as part of Phase 3 study.**

## 7.6 Phase 3 Discussion

This Phase 3 study was and, to my knowledge, still is the first of its kind to take place in the UK, regarding the exploration of how body donor information might impact medical students. The literature does provide some examples of studies reporting on the actual responses of students upon receiving donor information, although these were largely conducted in the USA (Crow et al., 2012; Talarico, 2013; Dosani and Neuberger, 2016). Aside from this, there are numerous reports worldwide exploring how students or anatomists perceive donor information *might* impact students. Again, these studies appear to have taken place within North America, specifically the USA (Bohl et al., 2011; Bohl et al., 2013; Williams et al., 2014) but there are also examples of this type of research occurring in Asia (Winkelmann and Güldner, 2004; Lin et al., 2009; Tseng and Lin, 2016) and more recently in Europe (Hasselblatt et al., 2018).

The literature reporting on the impact of this type of information, suggests that students who learn more about body donors are likely to display increased levels of empathy, compassion, dignity and respect not only in the DR, but also throughout their future careers (Crow et al., 2012; Bohl et al., 2013; Talarico, 2013; Dosani and Neuberger, 2016). Such findings suggest a potential opportunity for PIF to take place during the anatomy course simply by incorporating donor information into the anatomy experience. If this were to be true, then questions could be raised as to why this practice is not already commonplace.

One of the findings from Phase 2, suggested that some donors to the University of Leeds appear to support the notion of surrendering their current status of anonymity. Consequently, the aim of this Phase 3 study was to disseminate donor information to medical students and determine how, if at all, receiving this information might have impacted them.

Using guidance from Phase 1, first year students prior to, and after one term of, DR experience (Pre- and Post-DR) were invited to attend a presentation I had developed on body donors and donation. Following the presentation, students participated in one-to-one qualitative interviews, the findings of which were analysed using thematic analysis with the main themes and subthemes reported.

Interestingly, both Pre- and Post- DR students appeared to feel that donor information had prompted them to reflect on the fact that donors are real people. This seemed to encourage students to think about what donors might have been like during life; a frequently suggested impact of donor information (Winkelmann and Gldner, 2004; Lin et al., 2009; Bohl et al., 2013; Talarico, 2013). As a result, students appear less capable of implementing the practice of complete detachment as a coping strategy, an approach that some students had reported they might adopt during Phase 1. Instead, the sharing of donor information might present an opportunity in which the skill of detached concern could be developed. This would allow students to practice their ability to emotionally detach from donors, thus allowing them to dissect, whilst concurrently maintaining their ability to show concern towards the donors, hence treating them in an appropriate manner.

Some students commented that prior to the presentation they had believed that once a person is dead, they no longer represent a person, but are simply a body. A thought that could be influenced by students' personal religious and cultural beliefs. Despite this, upon receiving information in the presentation, this attitude appeared to change with some students reporting that although no longer alive, the donor is still a person; a mindset reflected on by one Pre-DR student who commented "*it was weird to think about the person before the body on the table*".

Despite this apparent change in mindset, it seemed that one Post-DR student still appeared conflicted over their choice of language in how to refer to donors, alternating between "*cadaver*" and "*donor*". This could be explained by the broad range of terms used by anatomists when referring to donors, and to which they have been exposed. Alternatively, this could be as a result of learning more about body donors and donation, a finding that has also been reported by Iaconisi et al. (2019). Furthermore, Lempp, (2005) previously suggested that a student's choice of language could be indicative of whether a student has detached from donors. With this in mind, it could be suggested that as a Post-DR student it is possible that after learning more about donors and the process they have gone through, they are starting to learn the skill of detached concern as part of their own PIF.

Interestingly, in Phase 1, students seemed more at ease with calling donors “*cadavers*”, or “*bodies*”, but in Phase 3 it seemed that Post-DR students specifically, felt that the choice of language used in the DR could be indicative of the levels of respect being shown towards donors. This became particularly evident when one Post-DR student becoming frustrated at the choice of language used by some of their peers when discussing donors, commenting “*I really hated actually that sometimes people call them cadavers [...] yes, they are cadavers, but they are human first*”. This could be interpreted as this student determining the term “*cadaver*” to be dehumanising, leading to their frustration. However, what this student does not appear to consider is how the choice of language adopted by some students might have represented a coping mechanism in order for these students to deal with any emotional burden they felt regarding the dissection course.

Similar observations of the range of choice of language in the DR have also been noted by Stephens et al. (2019), who reported that students will frequently use terms such as “*person*”, “*patient*”, “*specimen*” and “*cadaver*” to describe donors. Such confusion amongst students could be explained by the choice of language used by anatomists. In my own experience, I have frequently experienced different members of staff referring to donors using different terminology. It is therefore unsurprising that a lack of consistency amongst those who medical students may look to as role models in the DR leads to students using such a wide range of terminology to refer to donors.

In attempts to establish uniformity among staff, it has previously been suggested that all anatomists should adopt the term “*donor*” as opposed to “*cadaver*”. This is proposed to have the added impact of also personalising donors, preventing students from detaching to extreme extents that may result in displayed of disrespectful behaviour (Weeks et al., 1995).

Alternatively, some medical schools around the world, particularly within Asia, actively discourage students from using terms such as “*cadaver*” and “*body*”, and instead encourage the use of terms such as “*great teacher*” (Lin et al., 2009; Winkelmann, A. and Gldner, 2004; Tseng and Lin, 2016). Interestingly, although not informed of the use of the term “*great teacher*”, students interviewed during Phase 3 reflected on how their relationship with donors was akin to that between a teacher and their students. This is not the first study to

note that students might be more comfortable viewing donors as teachers (Bohl et al., 2011) rather than the traditionally encouraged mind-set of the “*donor as patient*” (Sukol, 1995; Marks et al., 1997; Rizzolo, 2002; Böckers, A. et al., 2012).

However, it is important to highlight that during the presentation students had been informed that the most frequently reported occupation by the donors I had interviewed during Phase 2, was “*teacher*”. Knowing this may have influenced students’ way of thinking about the relationship between themselves and donors, rather than this being the way students felt prior to attending the presentation. Students seemed unsurprised that many donors had been involved in education during their lifetime and saw it as a logical step (almost an expectation, even) for a teacher, to continue giving to this profession following their death.

Students in Phase 3 also appeared to enjoy learning about how students interact with donors at other medical schools. Specifically, those in Taiwan, whereby donor information is freely available and serves as a constant reminder of donors’ humanity throughout the dissection course. The students interviewed in my study appeared to be developing an appreciation of how such reminders could influence behaviours in the DR, paying particular attention to the potential benefits of such practice. This was highlighted by one Post-DR student who commented that they felt because they were not constantly being reminded that donors are people, students can begin to feel as though they are “*cutting meat rather than cutting people*” when in dissection class. Students often comment how they feel that donors in the DR resemble “*meat*” (Lempp, 2005; Bataineh et al., 2006) and such observations were also mentioned by students in Phase 1, who felt this way of viewing donors was leading to undesirable behaviour being displayed by some of their peers in the DR.

An interesting comment was made by one Post-DR student, who referred to caring for the donor as if they were a “*pet*”. To my knowledge, there are no accounts in the literature of students referring to donors in this way. Perhaps this student compared the donor to a pet as they see pets as being unable to look after themselves, relying on their owners to do this for them; much like a donor who has passed away. It could be argued that this student’s perception could result in greater levels of caring and responsibility shown towards donors

from students, a mindset that appears to have been prompted as a result of their attendance at the presentation. However, this sentiment also raises questions regarding whether some students might be beginning to feel ownership over the donor's bodies, as if they are an item that now belongs to them. Alternatively, perhaps some students might believe that a donor's body is the property of the university, and as such, view it as a replaceable learning tool, like all other resources provided to them, such as textbooks and plastic models. If this suggestion were true, then it might provide some level of reasoning as to why students interviewed in both Phase 1 and Phase 3 reported observing less than desirable behaviour in the DR.

Also, regarding the ownership of a donor's body, when reflecting on their experience of working with a donor's body in the DR, a Pre-DR student used the phrase; "*who the body used to belong to*". This comment could suggest that the student holds the religious or cultural belief that once a person is dead, their body no longer belongs to them. Comments of this nature are not an isolated occurrence and students interviewed during Phases 1 and 3 would frequently use phrases such as "*my donor*" or "*our body*". This could be interpreted as possessive language to describe the student relationships with donors.

With the above in mind, it could be suggested that the language used in the DR when referring to donors can hold a great deal of influence over the development of student behaviours and attitudes towards donors. This is not something that is widely explored in the literature, aside from the suggestions of the different terms that students should be encouraged to use when discussing donors, along with speculation as to how this might impact levels of detachment and any associated behaviours (Weeks et al., 1995; Lin et al., 2009; Tseng and Lin, 2016). In addition, implementing a consistent way of referring to donors across medical school could also help to alleviate some of the struggles that were displayed by students in both Phases 1 and 3, whereby students were conflicted as to how they should refer to donors.

Aside from the choice of language that students used to refer to donors, another common theme discussed by students following their attendance at the presentation was that of respect. Pre-DR students consistently reiterated that they planned on being respectful in the DR and some Post-DR students also

considered how they could encourage their peers to adopt what they described as a 'more respectful' persona towards donors in the DR.

With students highlighting the notion of respect, I feel it is appropriate to revisit a concept that I have discussed at several stages in this thesis; the challenges of determining what constitutes *respect* towards donors. Some students may deem the choice of language of their peers to be disrespectful (for example, referring to donors as “*bodies*” or “*cadavers*”), whereas other students may not take issue with this. Therefore studies, including my own, that simply report students having witnessed “disrespectful” behaviour are leaving it up to the reader to imagine what this behaviour may have been. Despite the lack of a specific definition of respect in the context of the DR when working with donors, prior to my study, the literature typically suggested that students may become more respectful following the provision of donor information, due to a reduction in detachment from donors. However, little to no evidence was generally presented to support such claims, with them generally based on student suggestions (Lempp, 2005; Bohl et al., 2013), or as a result of observations made by anatomists having spent time in the DR with students (Weeks et al., 1995; Lin et al., 2009).

Furthermore, the presentation also appeared to prompt Post-DR students to reflect upon not only their own behaviour in the DR, but also that of their peers', with some admitting that they felt there may have been occasions whereby they had not acted as respectfully as they ought to. A sense of a lack of respect towards donors could help to explain some of the feelings discussed by students regarding the donation of their own bodies in the future for anatomical examination purposes, despite not being specifically asked to provide their views on this matter. However, Post-DR students during Phase 3, as well as those with the most dissection experience (Stage 4) in the Phase 1 study, stated on more than one occasion that they would be dissuaded from donating their own bodies for future medical students after observing their peers' actions in the DR.

The literature on medical students donating their own bodies is limited. However, quantitative questionnaire studies conducted by Cahill and Ettarh (2008) and Bansal et al. (2013) also discovered that students who had been exposed to the DR and dissection seem to be less inclined to donate their own

bodies. In contrast, Perry and Ettarh (2009) reported that students who had been exposed to the DR were in fact more inclined to donate their bodies than they had been prior to entering the DR for the first time.

The findings reported by Cahill and Ettarh (2008) and Perry and Ettarh (2009) are particularly intriguing as both studies were conducted on medical students studying at University of College Dublin Medical School but in separate cohorts. Perry and Ettarh (2009) investigated what factors might impact student views on self-donation in this way and revealed that students who were older were more inclined to be open to donating their bodies. Unfortunately, no further investigation was completed to explore why students in either of these studies conducted in Ireland held the viewpoint that they did regarding donation.

Reasons for student unwillingness to donate was, however, explored by Bansal et al. (2013), who explored the perceptions of students studying at Shree Guru Gobind Singh Tricentenary Medical College in Gurgaon, India. Bansal et al. (2013) also compared the responses of students who had been exposed to the DR against those who had not yet experienced this environment and found that those with DR exposure seemed less inclined to donate their own bodies. The main reasons why the students with dissection experience were cautious about donating their bodies were: having observed discourteous behaviour of their peers towards donors, objections from family members, conflicts between religious beliefs and traditions, as well as more 'emotional' reasons. Unfortunately, further detail regarding these factors and the ways in which they influenced student views was not provided. However, in line with this, the students in my study also specifically mentioned having witnessed unfavourable behaviour as being the main cause that would deter them from body donation themselves.

Emotions were, however discussed by students in this Phase 3 study, with Pre-DR students, reflecting on their emotions about beginning to work with people at all stages of life. Pre-DR students in this Phase 3 study reported that they felt sufficiently prepared to enter the DR. However, some Post-DR students seemed to be frustrated at their perceived lack of preparation in the build-up to dissection commencing. Student perceptions regarding a lack of adequate preparation prior to their initial exposure to the DR are also discussed in the literature. This ranges from students being asked to reflect on their experience

immediately following their first class in the DR (Horne et al., 1990), as well as asking students to reflect on their experience at the end of the dissection course (Penney, 1985). In both cases, students reported feeling inadequately prepared. However due to the quantitative nature of these studies, further explanation as to why students felt this way and how they felt this could be improved upon is lacking.

In addition to Post-DR students, I previously reported in Phase 1 that students with experience in the DR also felt that there was a lack of thorough preparation prior to their initial classes taking place. Taking all of the comments regarding student preparation in the build-up to dissection into account, alongside the student feedback on the presentation and accounts of student experiences in the initial weeks of dissection, provides some evidence that students might benefit from this kind of presentation being implemented prior to the first dissection classes.

One particularly interesting example of an attempt to help emotionally prepare students to begin dissection classes was reported by Dosani and Neuberger (2016) at the University of Central Florida College of Medicine. This involved provision of donor information to students via the screening of a film showing a donor interview. This was not the only account in the literature of the screening of such a film, as Kostas et al. (2007) had also previously reported on this approach. However, the report from Dosani and Neuberger (2016) was the first to conduct a follow-up study to assess the impact of the content on students who had viewed it. The film was shown to students immediately prior to them first entering the DR. However, instead of having the desired effect of reducing student anxieties, the film appeared to raise the level of anxiety felt amongst students. One possible explanation for this could be that students were not allowed any time between watching the film and first being confronted with a donor in the DR, hence not allowing any time for students to reflect upon and come to terms with their emotions. Students who were provided with donor information in my study did not report heightened levels of anxiety upon receiving such information at any stage.

Since completion of my study, Iaconisi et al. (2019) has also reported that medical students studying at Ulm University in Germany do not describe having increased stress levels following the provision of donor information via a film.

However, the film was not screened on the same day that the students then entered the DR for the first time. Two timepoints were selected for the screening of this film: one day prior to students entering the DR, leaving time for reflection on the content of the film, and halfway through the dissection course (60 days after starting). Iaconisi et al. (2019) did not note any significant difference in the student reactions to the film based on whether they had dissection experience or not.

The findings of both my study and the one conducted by Iaconisi et al. (2019) appear to contradict the results reported by Dosani and Neuberger (2016), who reported that students had increased levels of anxiety following a film about donors. In addition to this, the findings refute suggestions made by students studying at the University of Michigan that viewing a film about body donors could lead to increased levels of anxiety experienced by students, as reported by Bohl et al. (2013).

It was particularly interesting to hear that Post-DR students felt reassured and more confident after learning more about the donation process. Therefore, if this kind of information were to be provided prior to students entering the DR, then they might feel better informed and supported in the build-up to what might be an emotionally challenging time for them (Bernhardt et al., 2012). Considering the available literature alongside student responses collected during Phases 1 and 3 of this study, I would suggest that if a presentation of a similar nature to the one utilised in my study were to be used in the future, then it would need to be given at least a few days prior to the students' introduction to the DR. This could allow students any necessary time to reflect upon what they had heard and seek clarification or reassurance from the appropriate individuals or resources.

Regarding the provision of donor information, there appeared to be frustration from students that they were not already being provided with this type of information. The reason this information is not routinely provided at the University of Leeds is simply because the university does not routinely collect it from registering donors. Interestingly, students rarely seem to actively seek out this information so perhaps their attendance at this presentation is what has led to this frustration, and they may not have felt like this had they not attended the talk and were still unaware of the information which it provided. One possible

explanation for students holding back from approaching staff to ask for the answers to their questions surrounding body donors and donation has been suggested by Gerwer and Gest (2017). Their report proposed that there are potential communication barriers between staff and students which could leave students feeling unable to ask for this information in the first place.

Unlike the majority of reports in the literature, which speculate or superficially explore how students feel regarding the provision of donor information (Kostas et al., 2007; Lin et al., 2009; Talarico, 2013; Williams et al., 2014; Gerwer and Gest, 2017; Kaye et al., 2019), the study I carried out extends this work by providing insights into medical student attitudes and behaviours and how they have been affected by receiving donor information. Therefore, it would not be unreasonable to suggest that this type of presentation could be included as standard, prior to students entering the DR for the first time. If the presentation were to have a similar impact on the majority of students as suggested by the individuals interviewed during Phase 3, then this presentation could potentially curtail any unwanted behaviour surfacing in the DR in the first instance. Further to this, students would hopefully feel more informed, and hence better prepared to enter the DR, as highlighted by the reports of increased confidence in the DR following the presentation. If students feel better mentally prepared to enter the DR, it could be suggested they would be less likely to feel the need to employ coping strategies in order to deal with the emotional demands of being in a new and unknown situation. This could, in turn, prevent students from completely detaching from donors and may improve student behaviours and attitudes shown towards donors, as proposed by students throughout this study.

This is not the first study reporting that donor information reminds students how donors are people, as well as increasing levels of respect towards donors, with two studies conducted in the USA (Crow et al., 2012; Dosani and Neuberger, 2016) and one in Germany (Iaconisi et al., 2019) also exploring this phenomenon. However, this is the first study to explore *how* and *why* the provision of donor information may have had this effect. Furthermore, to my knowledge, this is the first study of its kind to be conducted with medical students studying at a British Medical School and was, at the time of completion, the first purely qualitative study to explore this phenomenon worldwide.

### **7.6.1 Phase 3 limitations**

As with Phase 1 of this study, Phase 3 also comes with its own set of limitations. Only one cohort of students from a singular British medical school attended the presentation and were interviewed at the Pre- and Post-DR time points. This means I am unable to determine whether the findings presented in this chapter are representative of the wider student population and further investigation, including multiple institutions and numerous cohorts of students, is therefore necessary.

Although students attending the body donor presentation in the Post-DR cohort made the conscious decision to attend, students in the Pre-DR cohort had no control over this as the presentation was timetabled into their introductory week activities. This resulted in considerably more Pre-DR students viewing the presentation and consequently volunteering to take part in the follow-up interviews than Post-DR students. Furthermore, as with all other Phases of this study, selection bias must be accounted for, thereby limiting the transferability of these findings throughout the wider student population.

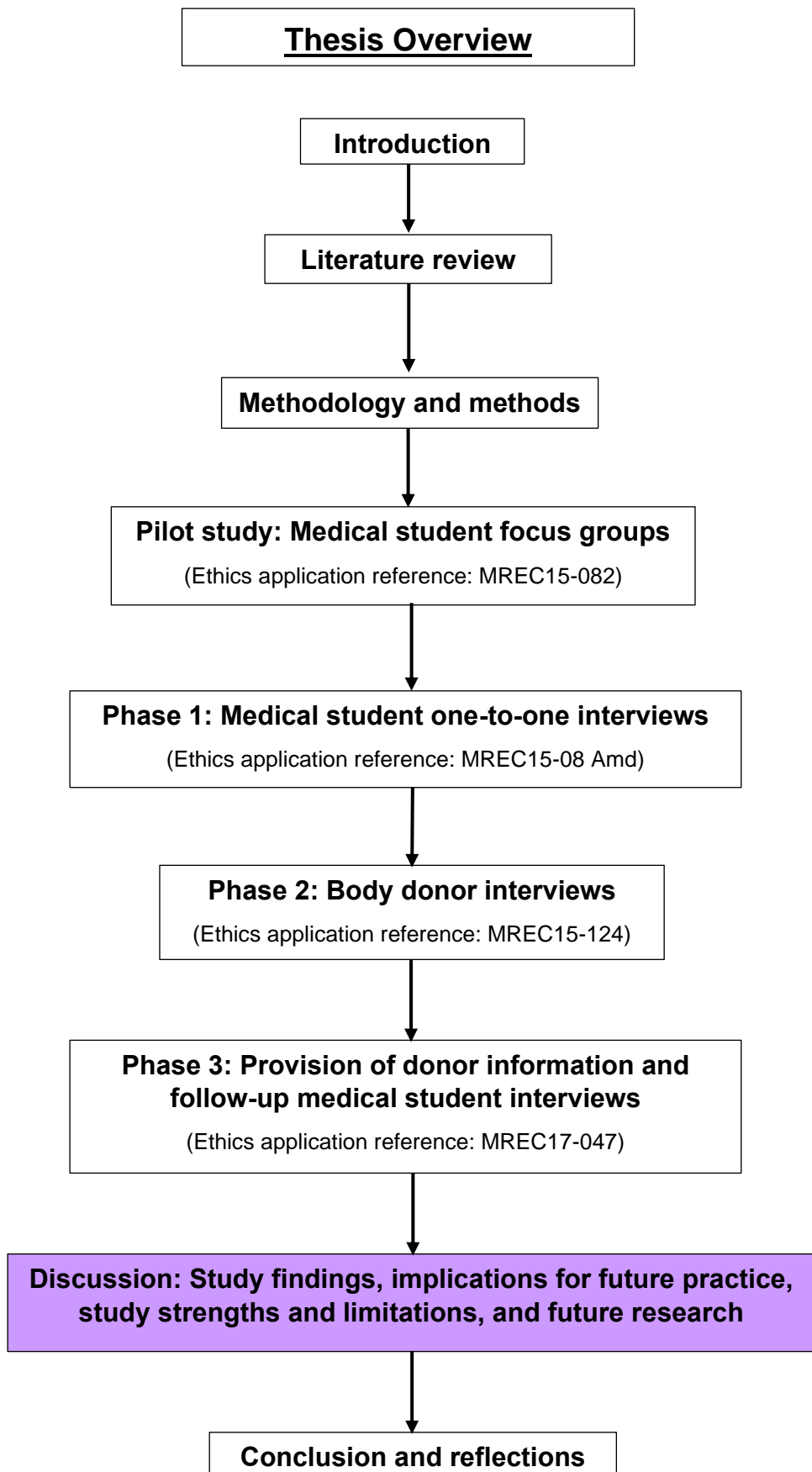
Another limitation that must be recognised is that the presentation students attended did not only contain information about donors that I had interviewed during Phase 2. Instead, it covered a wide range of topics including the history of anatomy and how donors are handled by students studying at medical schools around the world. It is possible that some of the findings presented in this chapter may not have emerged if the students had only been given access to information about the donors in Phase 2. That said, I felt it was important to provide students with context as to why they were being provided with donor information in this way.

Despite the limitations, this study does provide some foundations to build upon in future research and anatomy education regarding the provision of donor information to students in the UK.

## **7.7 Chapter Summary**

This chapter reported the findings gathered during interviews with students following the provision of donor information. The main effect of donor information seems to be the promotion of higher levels of respect in the DR as a result of encouraging students to view donors as people. These findings can

contribute to a very limited pool of existing knowledge on the actual effects of donor information on students and help shape both future research in this field and the design of anatomy education.



## Chapter 8 Discussion: Study findings, implications for future practice, study strengths and limitations, and future research

This chapter will focus on the main findings of this study, taking into consideration what impact my study findings might have on anatomical education for not only medical students but also other healthcare professions. Following this, I will reflect on the main strengths and limitations of this study, before making suggestions about future research that could be conducted in this field.

The findings of this study have already been discussed within the relevant preceding chapters. Therefore, I will use this chapter to further discuss what I perceive to be the two common themes that have surfaced throughout this research. Within this, I will reflect on how my findings confirm, dispute, or build upon, the current literature on these phenomena.

### 8.1 What are the main findings of this study?

I believe there to be two main points of discussion that have persisted throughout my studies: “respect” and “detachment”. These were the themes that students repeatedly highlighted when questioned about the prospect of learning donor information during Phase 1. Whilst donors also referred to the need for students to be respectful during Phase 2, these themes emerged as being particularly dominant during Phase 3, following the provision of donor information to students.

#### 8.1.1 Respect

Respect has long been a point of discussion in relation to the role it may play as a professional trait that medical professionals are expected to possess and actively display. Searching the literature, I discovered that students (and anatomists) frequently discuss the need to *show respect* in the DR, however, rarely are the ways in which respect presents in the DR environment acknowledged.

Perhaps as a result of this notable gap in the literature, a recent publication, Sathvika et al. (2022) explained how students studying at The Saveetha Institute of Medical and Technical Sciences, India, should sign a “Donor oath”

prior to commencement of anatomy classes, whereby students agree to treat donors respectfully. However, like other literature in this field, Sathvika et al. (2022) neglects to provide examples of what respect in the DR might look like in practice. The omission of this detail further highlights the point that anatomists often leave students to act on their own interpretations of the term “respect”.

Despite efforts to promote respect, it appears that there is very little understanding as to what respect *actually* means and how it should be embodied in the DR environment. Anatomy educators routinely ask students to be respectful in the DR, however there is often an assumption that students (and even anatomy educators) all have the same understanding of the term “respect” itself. I feel that my study has highlighted this area of ambiguity and emphasised the need for anatomy educators to explore and promote some shared understandings of respect in anatomy education.

Cultural beliefs and traditions can shape a student’s mindset regarding the term ‘respect’. For example, in Taiwan there is a culture of donors being referred to as “*great teachers*” (Lin et al., 2009) and there is a common mindset that donating one’s own body for anatomical education is one of the greatest things an individual can do following their death. Cultural and religious interpretations of respect are important to note. What might be deemed as culturally respectful in one culture may be seen as disrespectful in another, with the UK being multicultural it is valuable to highlight that those students studying may not go on to practice in the UK, or vice versa, and must adapt their own understandings of respect depending on their location of work or study.

Although it is unclear how respect in the DR might be embodied, some medical schools – typically those based in Taiwan, have implemented certain practices in a bid to help promote high levels of respect towards donors. These include, but are not limited to, students bowing to donors at the beginning of each dissection class, students learning more about donors from their living family members, or even acting as coffin bearers for donors in the memorial service at the end of the course (Lin et al., 2009; Santibañez et al., 2016).

As discussed during Chapters 5 & 7 (Phases 1 and 3, respectively), students had varied interpretations of how respect was best demonstrated. Some believed that respect was shown in the language used about the donors, and others by maximising the learning opportunities offered from the dissection of a

donor's body. Additionally, some students felt that respect was displayed through taking care of donors, with one student even commenting that donors were almost like a "pet". Whilst some individuals might deem this type of language to be disrespectful, I suggest that the underlying intentions of this student were respectful, they just chose to communicate it in an unusual way. The variety in the way respect was described in these examples emphasises the subjectivity of the term "*respect*". This led me to reflect on how the actions of a student may be deemed respectful by some individuals but might be perceived to be disrespectful by others, thus proving the complexity of this topic and the continuing challenge to educators.

My findings suggest that students are often confused about the appropriate terminology to use to refer to donors, with one student using several different terms while answering one question during an interview, struggling to find one they felt comfortable using. In a bid to combat such confusion, Weeks et al. (1995) was one of the first to suggest that students should be encouraged to refer to these individuals as "donors", in a bid to emphasise donor humanity and promote a respectful working environment in the DR.

One of the more surprising ways in which students referred to donors was use of the term "*meat*" to describe them, although impersonal terms such as "*cadavers*" or "*bodies*" were also used. These findings confirm what has previously been presented by other authors who have reported that students studying in South Africa (Nnodim, 1996) and Jordan (Bataineh et al., 2006), as well as those in the UK (Lempp, 2005) have also used similar language to refer to donors. The study by Lempp, (2005) is most comparable to my own, as it was conducted within the UK (Kings College, London) and so students will have experienced very similar cultural norms to students studying at the University of Leeds. My study confirms the findings of Lempp who reported that this type of language might only be associated with students at the later stages of the dissection course. However, my own findings also refute this assertion, as I encountered a first-year student with no prior experience in the DR, who opted to refer to donors as "*meat*".

My own experiences in the DR at the University of Leeds have shown me that inconsistency with how individuals refer to donors is not limited to students. Anatomy demonstrators also use differing terms to refer to donors, with some

using the word “*cadavers*”, others using the phrase “*bodies*”, and less commonly the term “*donor*”. Perhaps the inconsistency with how staff refer to donors impacts students’ own choices, making them uncertain of the most appropriate term to use and highlighting a potential aspect of the hidden curriculum that is influenced by the actions of anatomical educators. If anatomical educators adopt the use of the singular term “donor”, it might be possible to establish whether student anxieties might be eased, as well as allow investigation into the relevance of the comments made by Weeks et al. (1995) on this matter. This type of research relies on an open conversation amongst anatomy educators as to how and why they might refer to donors in the ways in which they choose to.

Despite the differing interpretations of respect, “respect” was still one of the most frequently suggested outcomes, in my study, of the impact of the provision of donor information might have on students. This finding confirms that of other researchers (notably those in the US), who reported similar results (Bohl et al., 2013; Williams et al., 2014). However, these studies were typically conducted using self-administered questionnaires, and students were not given the option to provide reasoning as to why they felt it may have been a potential outcome.

Students in my Phase 3 study provided with donor information still generated a notable amount of discussion regarding the concept of respect. Students attributed this to their attendance at my presentation, believing they felt less detached from donors and were therefore more inclined to consider them as real people, who should be treated with respect. This finding, despite offering a differing mechanism to those presently described in the literature of providing donor information, corroborates with the existing literature exploring student responses to donor interviews which used donor video interviews (Kostas et al., 2007) and meeting with donors’ families (Crow et al., 2012).

Although further exploration would be required, it might be possible that a simple presentation like the one I have designed could be sufficient to encourage a more respectful attitude amongst medical students working with donors. This could be of particular benefit in institutions which lack the capacity for students to meet with donor families or where producing a video interview is not a viable option. Furthermore, students in Phase 1 of my study indicated that they believed the presentation of generic donor information might be the best

way to communicate with students. This was because they believed that donors becoming too personalised may negatively affect them, as previously reported by Williams et al. (2014), when students stated an overall preference not to learn a donor's first name due to concerns of adverse emotional impacts.

Interestingly, donors interviewed during Phase 2 of my study gave insight into how they not only wished for their physical bodies to be respected by students, but their wishes too. This perspective raises even more questions on the interpretation of respect. Is respect for the donor's motivations and respect for the physical donor two separate entities? Should respect for the donor's wishes and their physical bodies be given equal weighting? These questions further complicate our ability to determine the best way to show respect towards donors and highlights the complex nature of what may initially seem a simple, straightforward concept

Taking this all into account, I feel that my study has not only emphasised the importance of the concept and practice of respect, but also highlighted the lack of a working definition of what respect means in the DR. As anatomical educators, we promote the notion of 'respect' in the DR and perceive ourselves as disapproving of any 'disrespectful' behaviour. However, it has become increasingly evident throughout this study that the term 'respect' is open to interpretation, and consequently, students are often confused as to what is expected of them. This highlights the need for anatomy educators to adapt their pedagogic practice to engage further with this.

### **8.1.2 Detachment**

'Detachment' itself is believed to be linked to students learning the skill of "detached concern" (Lief and Fox, 1963). Detached concern allows medical professionals to have control over their emotions in order to care for patients effectively, but are still able to display a caring, empathetic attitude (Coulehan et al., 1995; Hildebrandt, 2016; Tseng and Lin, 2016). Students are often perceived to utilise detachment as a coping strategy in order to help them process the new emotions that they will encounter in response to the dissection course, and their initial interactions with a dead body (Evans and Fitzgibbon, 1992; Tseng and Lin, 2016). As such it could be argued that students use detachment as an aspect of identity formation to develop "detached concern"

and therefore establish themselves as competent medical professionals (Cruess et al., 2015).

With this in mind, I was interested to learn that students interviewed during Phase 1 of my study generally anticipated that they would feel uncomfortable receiving specific donor information. They perceived that specific information would make them feel too emotionally attached to donors and would therefore interfere with their ability to learn and dissect. Despite these concerns, the students I interviewed could appreciate that receiving donor information might encourage them to view donors as people, rather than opting to completely detach from them.

Bohl et al. (2013), had previously reported on students' apprehension to receiving detailed donor information regarding the emotional impact it may have upon them, leading to students being more open to receiving generic donor information. Similar findings were also reported by Williams et al. (2014), who speculated that students would be more open to receiving generic information over more detailed donor information in a bid to humanise donors whilst concurrently maintaining emotional distance from the donors. My findings indicated that students at all stages of Phase 1 appeared to be more willing to receive generic information over more detailed donor information, in keeping with the available literature on this topic. Based on the findings from Phase 3 of my study, providing generic donor information is likely to be helpful rather than cause distress to students. Furthermore, students in all Phases of my study were able to appreciate how learning donor information could prevent emotional detachment, as well as increase respect shown towards donors in the DR.

These findings fuelled my speculation that detachment and respect are intrinsically interlinked to one another regarding student behaviours in the DR.

However, despite my findings initially appearing positive in terms of students being willing to receive more detailed donor information, the desire to receive only generic donor information rather than personal, could suggest that students have begun to implement some form of detachment to deal with the potential emotional burden of dissection; something that is consistently confirmed throughout existing literature exploring student reactions to the DR (Evans and Fitzgibbon, 1992; Lempp, 2005; Plaisant et al., 2011). Interestingly I also noted that as students reported experiencing a reduction in negative emotions, they

also seemed to experience increased detachment, and this was something I discussed in more detail within Chapter 5. My findings, therefore, could imply that although no negative emotions were felt as a result of receiving generic donor information, this was due to students already having become detached, either in preparation for or during the act of dissection.

It is likely that cultural factors play a part in the relationships that UK medical students form with donors. For example, students studying in Asian universities, particularly those in Taiwan and Thailand, students are routinely provided with extensive personal information regarding donors, as well as meeting their families (Lin et al., 2009; Santibañez et al., 2016; Tseng and Lin, 2016). Within Taiwanese and Thai culture, students are actively encouraged to view donors as people, and there is a strong emphasis on the ability to remain attached whilst continuing the task at hand. As a result, detachment is less frequently reported, and students are encouraged to embrace donor's humanity, showing high levels of attachment and responsibility toward donors, as well as being proposed to display a more respectful attitude and greater appreciation for donors. Such experience could help prepare students professionally for their interactions with patients once they are in practice. Interestingly there is also a high level of student involvement with donors and their families in the US (Crow et al., 2012), however, the potential impact this student-donor relationship may have on students professional and personal development is unclear from the literature.

In contrast to the personal relationship that some medical students are encouraged to form with body donors, revisiting my findings, I noticed that students had a high tendency to use a range of terms, particularly "*detached*", "*desensitised*" and "*depersonalisation*", seemingly interchangeably, to describe how they felt whilst working with donors in the DR. This makes it difficult for me to distinguish whether students are describing their attempts at learning the skill of detached concern, emotionally detaching, or are simply confused by the differing meanings of these terms. Perhaps future research might usefully pursue what students really mean when they use these terms, in an attempt to construct a truer picture of their experiences, and how we, as educators, can help students to develop their professional identity.

Rather than seeing these terms as interchangeable, Tseng and Lin (2016) suggest that as students become emotionally detached they become more desensitised. Although I agree that these terms should not be used interchangeably, and have their own definitions, I disagree that detachment leads to desensitisation. I would instead argue that in the DR environment, it is desensitisation that can lead to detachment. I propose that as a student becomes more comfortable working with donors and is less emotionally impacted by the act of dissection, detachment can occur. For example, as the lead for a module where medical students undergo dissection of the head and neck, I have witnessed first-hand how emotional this experience can be for students at the outset. However, I have also observed that as students become more comfortable with the task in hand, they are less inclined to feel as emotional which I propose indicates that they are becoming desensitised. As a result of such desensitisation, students then appear to be more inclined to detach from the donors and instead view them as a learning tool rather than a human. Ultimately, this detachment then results in students displaying a variety of different behaviours and attitudes in the DR.

Taking the potential for PIF during the dissection course into account, as well as reflecting on the findings I have presented and discussed throughout my thesis, I have found myself questioning whether the way in which we, as educators, refer to donors might influence the level of detachment that students feel. Referring to donors as “*cadavers*” or “*bodies*”, I personally feel removes an element of humanity from the dissection experience and could ultimately encourage students to objectify donors and regard them purely as learning tools.

Consequently, I find myself agreeing with Weeks et al. (1995), who suggested that anatomy educators would be best advised to adopt the term “donor” within the DR with the long term hopes of promoting a more respectful environment, alongside encouraging students to continue to see the donor as a person, reducing complete detachment. With this in mind, I propose that adopting this simple term could potentially eliminate the need for the provision of more personalised donor information, keeping with student suggestions, not only in my own study, but also those particularly in the USA, that they do not feel comfortable receiving such specific information (Bohl et al., 2013; Williams et

al., 2014). Encouraging anatomists to consistently use the term “donor” could allow us (anatomists) to hold some degree of influence over the relationship that forms between students and donors in the DR. However, more research is necessary in order to explore this concept further.

## **8.2 Implications of research in this field for anatomical education**

Although there is uncertainty regarding exactly when during the medical degree professional behaviours are learned (Aka et al., 2018), it is believed that the dissection course can provide students with their first insight into what it means to be a medical professional (Shiozawa et al., 2016). Furthermore, it is frequently suggested that the behaviours and attitudes students develop throughout medical school, inclusive of the dissection course (Dickinson et al., 1997; Rizzolo, 2002; Hildebrandt, 2014; Tseng and Lin, 2016), will persist throughout a medical student’s professional career.

The findings of my study support the existing literature regarding student development throughout the dissection course. What my findings add to this literature is to highlight respect and detachment as key aspects of PIF that arise from the student experience of dissection. Consequently, these aspects should receive proper acknowledgment as part of the anatomy curriculum and how PIF can occur during the anatomy course. This is especially relevant when considering the importance of medical professionals possessing these traits and the impact they can have on patient experience and satisfaction.

Respect and detachment have long been considered as skills that students typically develop by observing more experienced medical professionals (Coulehan, 2005; Pawlina, 2006). As such, student PIF is traditionally understood to develop without the need for explicit teaching, and thus forms part of a hidden curriculum (Wilson et al., 2013; Cruess et al., 2014). In light of this, there has been a growing interest in how awareness of the hidden curriculum can be utilised to promote PIF throughout the practical anatomy course (Finn et al., 2010; Hafferty and Finn, 2015; Mullikin et al., 2019).

Whilst some medical schools choose to nurture professional development through dedicated professionalism courses (Evans et al., 2018; Goss et al., 2019), this is not always the case. Mount et al. (2022) recently conducted a

critical review of the literature, exploring the different ways in which PIF might be developed throughout the medical degree. This review suggested that one of the most common ways in which medical student PIF might be encouraged, is through self-led reflection (Berzonsky, 2011). A less common way in which PIF is thought to be influenced is through socialisation (Monrouxe and Rees, 2015), that is, the social interactions that take place within a learning environment (Evans and Pawlina, 2020),

Although students might have structured opportunities to reflect on their time studying anatomy, particularly their time in the DR, this rarely takes place in the DR setting. Instead, socialisation is an aspect of PIF that could actually take place within anatomical education. In line with this, Aka et al. (2018), discussed how the activity of body painting can form an opportunity for socialisation. However, instead of the need to design additional courses to help students develop skills in professionalism, only to be shoehorned into an increasingly overcrowded course, I would argue that some tools that help assist with PIF already exist within the current curriculum. For example, simply interacting with fellow medical students, as well as being influenced by their educators, in the DR as well as throughout the rest of their studies, could all be perceived to help form part of the socialisation aspect of PIF. A form of socialisation that occurs in the UK is a memorial service in which medical students have the opportunity to meet with donor families. However, other countries such as Taiwan (Lin et al., 2009) and the USA (Crow et al., 2012) provide a more involved form of socialisation where students meet with the families of the actual donor who they will dissect, although the link between this experience and PIF, whilst acknowledged, has not been researched meaning the impact of this form of socialisation is not widely understood. A further contribution of my research study is to begin to explore the evidence for links between the experience of receiving donor information and PIF.

Research exploring the link between personalising donors via the provision of donor information and its impact on PIF, appears to be gaining momentum, although such studies are largely confined to medical schools in the USA (Crow et al., 2012; Talarico, 2013; Dosani and Neuberger, 2016). Whilst my study begins to build upon the existing literature, it also highlights another possible opportunity for anatomical educators to influence the hidden curriculum. I am

aware that educators cannot implement a hidden curriculum. However, being aware of its presence and impact provides opportunities for small and influential changes to be made. Suggestions, such as those by Weeks et al. (1995) of adopting the term “donors” instead of cadavers, give a prime example of how our actions as educators have the potential to influence the hidden curriculum. I propose that providing students with donor information could work in a similar manner. At present there is not, to my knowledge, an established link between this practice and the hidden curriculum in the literature, thus my study potentially provides a new and interesting avenue to be explored.

Although some authors suggest that anatomy educators rely too heavily on the hidden curriculum to achieve certain objectives, for example, professionalism (Jackson, 1968; Finn and Hafferty, 2020), I would argue that if provision of such basic donor information, or even a simple and easy change to the vocabulary adopted in the DR, could create such a widespread positive impact to student PIF, then this warrants further exploration. Aside from the potential impact on PIF, engaging with the hidden curriculum in this way could also reduce the need for additional, stand-alone professionalism courses, in an already overcrowded curriculum. However, I would not claim that this small change would be sufficient to remove the need for any further training in professionalism, more so that it might be a useful starting point to begin fostering PIF in medical students. Respect and detachment (specifically detached concern) are deemed essential skills that all medical students need to, and will hopefully, develop throughout their education and training. This will enable them to foster positive and effective doctor-patient relationships throughout their careers (Swick, 2000).

Based on the findings of my research, I suggest there would be a value in being explicit that anatomy provides students with an opportunity to develop the skills of respect and detachment. To be successful, this would require faculty development, explicit learning objectives and for anatomy educators to effectively engage in conversations about PIF with their students and colleagues. However, the complexity of this undertaking should not be underestimated. I feel that simply including respect and detachment as explicit learning objectives disregards the complexities of attempting to both define, and therefore teach, respect and detachment, that my research findings highlighted.

In addition to this, anatomical education is ever evolving as discussed by Sathvika et al. (2022) as well as my own experience of the changes in anatomical education as both a student and educator. This is resulting in different approaches to teaching anatomy that might involve moving away from dissection and towards prosection, or potentially away from wet specimens altogether, and towards plastinated models or technology-based materials. Consequently, anatomy educators will need to look for new and alternative ways to support students to develop the trait of respect and the skill of detached concern in this new learning environment.

### **8.3 Study strengths and limitations**

#### **8.3.1 Study strengths**

The qualitative approach I took in this study was particularly beneficial. Specifically, the phased nature of my study along with use of both focus groups and one-to-one interviews, has resulted in my study being particularly comprehensive in comparison to the majority of existing literature on this topic. By actively engaging with students in a face-to-face situation and allowing them the opportunity to expand upon or clarify any responses they had provided has allowed me to go below the surface and gain a deeper understanding as to *how* students feel regarding the provision of donor information, including *why* they feel this way.

Qualitative research also capitalises on the high level of researcher involvement in the study. This meant that I played a major part in data collection, analysis and dissemination of findings. My own personal experiences in the DR, appeared to strengthen this study, specifically my knowledge from working with body donors in close capacity, as well as observations of student behaviours in the DR. These experiences left me in a more informed position when designing the interview guides, as well as guiding me towards the best ways to communicate with students which put them at ease and encouraged frank and thoughtful discussion. It is worth noting that the high levels of researcher involvement are frequently deemed to be a noted strength of qualitative research (Braun and Clarke, 2006; Varpio et al., 2017).

Initially I had planned to utilise focus groups as a means of collecting qualitative data from students. Due to recruitment difficulties these ended up forming a

preliminary pilot study for this work. Although this use of focus groups for the pilot study was not intentional at the outset of this research, it was particularly beneficial for this study. It allowed me to check whether participants understood the questions that I had developed for the interview guide, which was important given that this was, at the time, one of only a few studies exploring student-donor relationships to adopt qualitative methods. Pilot studies can be used in a variety of ways including as a trial run for an upcoming larger scale study (Van Teijlingen and Hundley, 2002), trialling the use of research instruments (Breen, 2006) and allowing insight into certain areas of a study that might be 'destined to fail', hence allowing for research methods and instruments to be modified and refined (Ismail et al., 2018).

This pilot study not only alerted me to recruitment difficulties at an early stage of my doctoral study, but also provided the opportunity to build on and improve my interview guide. I was able to check that students understood what the questions were asking of them, as well as receiving feedback on any questions they felt were missing from the interview guide, a noted strength of conducting pilot studies in general (Breen, 2006). This is not to say that focus groups as pilot studies come without disadvantages (Van Teijlingen and Hundley, 2002). However, in the circumstances under which I implemented them, the advantages significantly overshadowed any potential disadvantages that may have existed. Interestingly, despite their proposed usefulness in ensuring the successful implementation of a study, reports of the use of focus groups as part of a pilot study are frequently omitted in the literature (Gudmundsdottir and Brock-Utne, 2010; Malmqvist et al., 2019). Perhaps there is a need to produce more literature highlighting the usefulness and importance of pilot studies that utilise focus groups and the findings reported in this thesis could contribute to this pool of literature.

### **8.3.2 Study limitations**

Although I have evidenced the strengths of this study, particularly in the methodology chapter (Chapter 3) of this thesis, there are also some limitations that need to be acknowledged.

The recruitment strategy of relying on students to volunteer to participate in this study posed difficulties. I was unable to recruit enough students to conduct

multiple focus groups for each cohort of students invited to participate during what was intended to be Phase 1. Consequently, I changed the method to instead utilise one-to-one interviews with students. Although struggles with recruitment had at first felt to be a limitation, ultimately this process provided me with valuable experience. Not only did it allow me to test the questions in the interview guide I had developed, but it also highlighted some flaws in using focus groups to collect information from students regarding their perceptions of working with donors. For example, it became apparent that students seemed unable to speak freely in front of their peers, which ultimately led to some individuals changing their opinions and responses to the questions as the focus groups progressed. I hoped that by changing to a one-to-one interview setting, these apparent limitations would be negated.

This study was not longitudinal. Therefore, I am unable to state with any level of certainty whether the impact of donor information recorded during this study will remain throughout the rest of the participants' time in medical school, let alone persist into their future professional careers. This means that although I can comment on the immediate impact of donor information, and any positive attitude changes that may have accompanied this, I am unable to report whether these effects might be more long term or not. In order to address this, it seems logical that students who are provided with donor information in the first year of study are again interviewed using the same question set in their second year of studying anatomy. Since completion of this study, and armed with my developing knowledge and experience within the constructivist-interpretivist paradigm, I feel that I would now be better placed to follow-up on this study by implementing a longitudinal study to allow for a more diverse range of stakeholder perspectives to be included.

Furthermore, it is difficult to state whether the response of students in Phase 3 to this presentation were purely down to receiving donor information or whether other aspects of the presentation also influenced the way in which they were thinking and therefore answered the questions during interview. Additionally, students who were further on in the medical degree (i.e., Post-DR) than those who had not yet begun the anatomy course (i.e., Pre-DR), could also have been influenced by other experiences. For example, Post-DR students will have spent time working on placement and interacting with real life patients, whereas

Pre-DR students will not yet have this experience to draw upon. Regarding students in their first year, it also needs to be noted that they may have other anxieties in their life as they are new to university, and this may be their first time living away from home. This could stimulate a whole host of emotions in addition to how they might feel in the build-up to beginning dissection classes and their initial confrontation with mortality (Horne et al., 1990; Marks et al., 1997; Boeckers et al., 2010; Bernhardt et al., 2012).

This study relied on students self-selecting to participate. This could have resulted in students who were already more invested in the donors as people and concerned about their treatment being more likely to come forward and take part. This cannot be helped in this type of study, whereby it is exploratory in nature and students are being asked to discuss a topic which could be potentially quite upsetting for some individuals. It would not have been ethical to force all students into an interview setting to discuss this matter and although an online questionnaire could well have been used instead this would not have allowed for the same depth of data to be collected. Perhaps if more medical schools had been included in this study, then a larger sample of students may have volunteered to participate in an interview. This would also have allowed for comparisons to be made across a variety of different medical schools in the UK that will potentially all deliver practical anatomy classes in differing ways, such as by dissection or prosection only. However, due to the time limitations in place, as well as this being a PhD student project, a larger scale project of this sort was not possible.

#### **8.3.2.1 The process of thematic analysis**

Perhaps one of the greatest limitations of this research was my initial lack of understanding about thematic analysis, including how this may have resulted in the presentation of findings that were underdeveloped and superficial (Connelly and Peltzer, 2016). Consequently, the themes I have presented in this thesis might appear to be linked too closely to the questions asked during the interviews. Unfortunately, at the time I presented these findings in my thesis, I did not possess the knowledge that I now have regarding thematic analysis and I can now appreciate that simply having an awareness of, and implementing, thematic analysis techniques does not necessarily equate to “*good thematic analysis*” (Braun and Clarke, 2021a).

Taking in to account the updated guidance from Braun and Clarke (Braun and Clarke, 2019; Braun and Clarke, 2021b; Braun and Clarke, 2021a), along with the advice of those more experienced in this field with whom I have been in conversation since I completed this study, I have come to realise that I took a highly pragmatic approach to thematic analysis. I think this happened because I lacked a deep understanding of qualitative research within the constructivist-interpretivist paradigm and was reacting to my instinct to reach an “end point”, something I was conditioned to do in previous work as a positivist researcher.

I was initially under the impression that I been searching for latent themes, attempting to uncover underlying ideas, assumptions and conceptualisations through my interpretation of the data (Braun and Clarke, 2006). However, as my understanding of this type of data analysis has expanded, I can see that although there is evidence of instances whereby I have shown glimpses of this approach to generating themes, I am able to acknowledge that for the most part it appears as though I have generated themes more semantically (Boyatzis, 1998). This has meant that I developed themes that were more reflective of what participants said as opposed to undergoing a more in-depth interpretation of their comments. I found comfort in searching for patterns in themes that I could interpret the significance of in relation to each other and the bigger picture of the phenomenon (Patton, 1990). As such, at times, my findings perhaps represent more of a description of the data I collected, rather than my full interpretation of what these findings might mean (Braun and Clarke, 2006).

I can now appreciate that themes, whilst being patterns of shared meaning, need to be linked to one another by a common idea (Braun and Clarke, 2013; Braun and Clarke, 2014). This means themes might draw together data that initially seem entirely separate entities (Braun and Clarke, 2021a). Without meaning to, I created themes that tried to be too diverse (Braun and Clarke, 2006), which resulted in themes that appeared to be underdeveloped and lacking specificity (Connelly and Peltzer, 2016; Braun and Clarke, 2021a).

If we are to report meaningful data in the literature to help inform future practice, then it is essential that any individuals who plan to conduct qualitative research in this field, with a view to using thematic analysis, understand the importance of ensuring a detailed analysis is conducted. This is learning that will inform my

future career when conducting my own research projects and in supporting other researchers.

## **8.4 Future research**

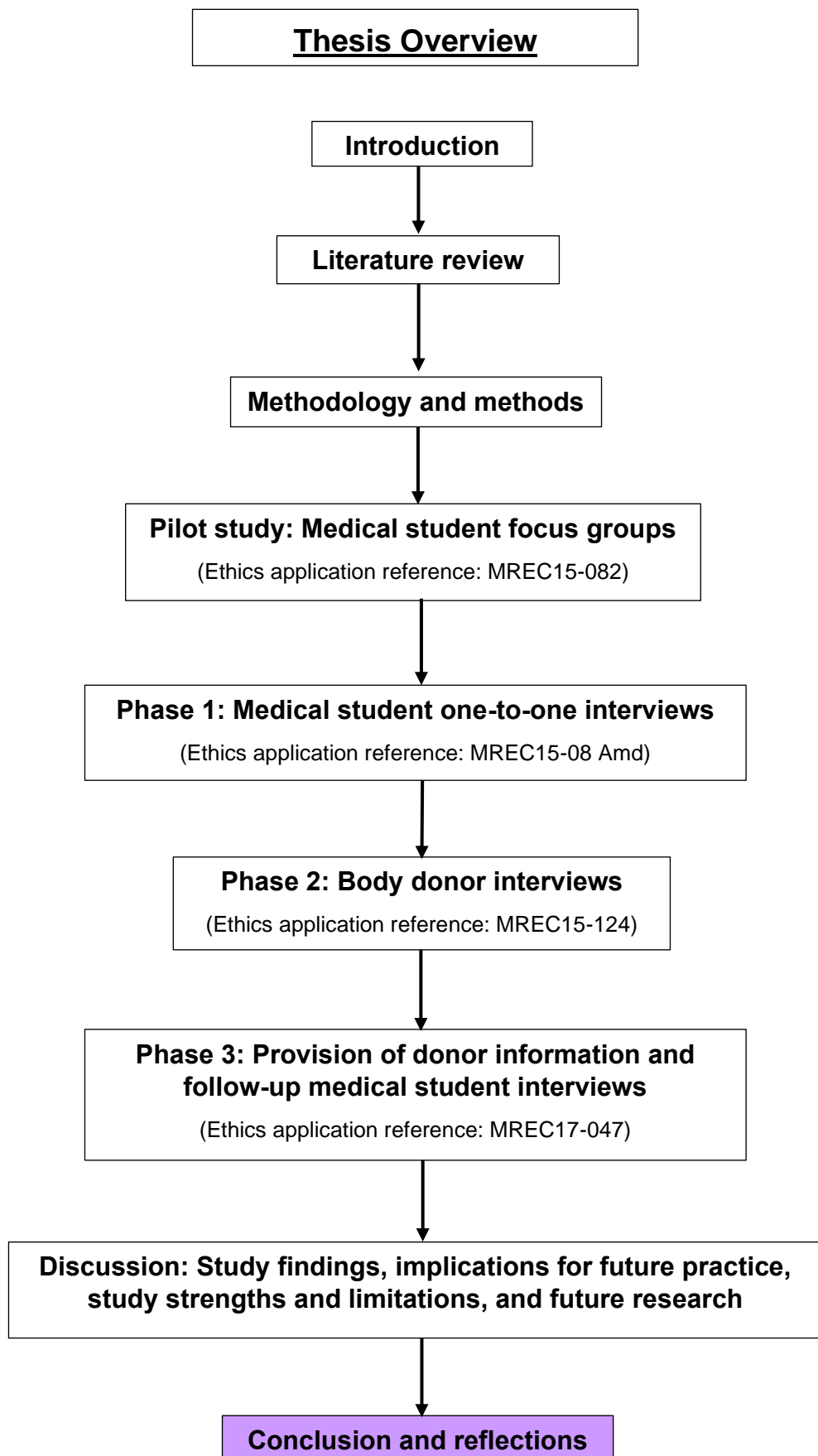
Provision of donor information appears to prompt students to reflect on the level of detachment they may, or may not, have employed, whilst simultaneously helping to build a respectful, and caring relationship between students and donors. Some authors have suggested that these attributes can then be fostered as part of the anatomy curriculum, potentially persisting into a student's future career (Santibañez et al., 2016; Souza et al., 2020). If this were true, then it seems logical that students should routinely be encouraged to form such relationships with donors. However, there is no evidence, as of yet, to show how long the impacts of donor information spoken about in this study, such as high levels of respect, caring and responsibility, will persist.

To explore this in more depth, longitudinal studies are required to assess whether students in both the later stages of dissection, as well as those nearing the end of the medical degree, still hold the same mind-set as the students who had just recently received the donor information, thus assessing the potential long-term impacts. Furthermore, it would be interesting to speak with both newly qualified and well-established medical professionals to try and determine what factors (if any) throughout medical school and their training since they feel have been key in shaping the way in which they form relationships with patients.

With respect so frequently referred to in this field of research, it seems important that we try to achieve a more nuanced understanding of what is meant when this term is used in order to reach a consensus about how best to ensure respectful behaviours and attitudes can be developed. Everyone will have different understandings of the concept of respect; however, these are not typically explored in the literature. It would be interesting to investigate this in more depth not only taking into account student views on this concept, but also the views of anatomists and donors. Being able to provide students with clearer guidelines regarding what is being asked of them when they are asked to be "respectful" in the DR would hopefully leave students more likely to develop desirable traits which they can continue into their future careers, as well as leave students more confident that they are behaving appropriately in the DR.

With medical schools moving towards the inclusion of prosected specimen teaching, as opposed to full body dissection, research exploring the impact of donor information on students could become increasingly important. If students are learning anatomy from a lone arm, leg, or isolated organ, the chances of them becoming even more detached from the donor, might be greater. Such perceptions could lead to less desirable attitude and behavioural changes, which could potentially remain with students into their professional careers, hence impacting on future doctor-patient relationships.

Finally, with limited research investigating the perceptions of anatomists on the provision of donor information (Hasselblatt et al., 2018), it would be interesting to learn more about how anatomists based in the UK, as well as worldwide, feel about this practice. This would involve considering any potential emotional impact that such information might have on anatomists which admittedly has not been considered as part of the research presented in this thesis.



## Chapter 9 Conclusion and reflections

### 9.1 Concluding remarks

For centuries it has been common practice for body donors to remain anonymous to medical students in the UK. However, due to legislation that requires individuals to give consent in order to donate their bodies for anatomical examination, information about body donors is more accessible than ever before. This has led to some medical schools worldwide providing donor information to their students, with a proposed benefit of students beginning to develop an important set of desirable attributes. These include increased levels of respect, caring, compassion and empathy, indicating the potential for PIF as part of the anatomy course. There is hope that these skills might persist into and throughout a student's professional career, leading to suggestions that students may forge improved doctor-patient relationships throughout their time in practice.

In spite of such claims, there is no literature to suggest that this phenomenon has been explored within the setting of a UK medical school. Therefore, the aim of this three-phase study, which utilised qualitative semi-structured interviews, was to determine the impact of personalising body donors on medical students studying at the University of Leeds.

Phase 1 consisted of interviews with medical students in order to determine whether students would even be open to the concept of receiving donor information, and if so, to elicit what type of information they felt would be of interest and why. Upon completion of thematic analysis of the transcripts generated following the interviews, I determined that students studying at the University of Leeds School of Medicine would like to learn more about those who donate their bodies for anatomical examination. Students with little to no dissection experience focussed mainly on information that could be perceived to be 'personal' in nature such as: the donors' motivations for donating, donor occupations and hobbies, as well as learning more about donor families. Conversely, students with the most dissection experience were more focussed on obtaining what could be considered to be information of a 'clinical' nature, mainly the medical history of donors.

Following on from this, Phase 2 allowed me to establish that there are a number of body donors who are willing to reveal information about themselves to medical students. Personal information provided by donors included: occupation, motivations for donating their bodies, and messages that could be relayed to students. Furthermore, all donors interviewed agreed that relevant medical history should be provided to all students as standard as it could be useful in helping students to develop better understandings of certain medical conditions.

Finally, Phase 3 provided medical students with donor information via a presentation that I had designed taking in to account the student responses in Phase 1 and including the donor information collected during Phase 2. Thematic analysis of interview transcripts collated from one-to-one interviews with students following the disclosure of donor information via a presentation, revealed that medical students enjoyed having the opportunity to learn more about donors and felt that such experience was useful in the promotion of desirable behaviours and attitudes within the DR. The more commonly suggested outcomes were increased levels of respect, a greater sense of responsibility of care towards donors, and appreciation for the act which donors have undergone. The reasoning behind these findings appeared to stem from students being prompted to think about the donor as a person, rather than simply as a learning tool.

Another notable finding in this study was highlighted by students during both Phase 1 and Phase 3 interviews. It became apparent that students use an array of terms when referring to donors ranging from “*cadaver*” and “*body*” to “*specimen*” and even “*meat*” as they are uncertain about what the most appropriate language is in this scenario. This resulted in some students becoming frustrated about the way in which donors have been described by some of their peers, which, in turn, led to discussion surrounding what constitutes respectful behaviour in the DR. It became evident through these discussions that students have varying understandings as to what it means to be respectful. This highlighted the need for further guidance to be provided by academic members of staff, who could provide a standardised set of guidelines regarding what constitutes appropriate student behaviour in the DR, that could be communicated to all students at the beginning of the dissection course.

In addition to exploring this phenomenon beyond the University of Leeds, an interesting question that has arisen as a result of this research is related to respect. In particular the wide range of interpretations and understanding that individuals might have concerning what constitutes respectful behaviour and attitudes. This requires further exploration on a larger scale, potentially with the inclusion of a wider variety of participants. Only then could suggestions be put forward as to how we might define what it means to be “respectful” in the situation of medical school and the study of anatomy. Several questions flow from this, including: Are there different definitions of respect in medical school and later in the medical profession? What might influence individuals’ perceptions of what it means to be respectful? Would it be possible – and desirable – to implement a universal viewpoint of respect and expect all individuals to adopt this stance?

Moving forward, it would be interesting to conduct more longitudinal research, whereby the impact of donor information on medical students is investigated throughout the duration of the medical degree. Not only this, but exploring this concept with newly qualified, as well as more experienced, medical professionals to determine whether they felt receiving donor information during their time at medical school would have been of benefit to them, and if so, how.

To conclude, the research presented in this thesis suggests that some medical students studying at one university in the UK expressed an interest in learning more about body donors in order to better prepare for dissection teaching and their future careers as medical professionals. Moreover, I have established that some donors appear to be willing to relinquish their anonymity. Not only this, but both students and donors have suggested multiple potential benefits that could accompany the personalisation of donors, thus providing support for the potential to provide such information to medical students.

## **9.2 Reflections**

Whilst studying for this PhD, I have developed my skill set and over the course of the past 7 years have become more confident in my abilities as a qualitative researcher. I have sought support from more experienced academics within the qualitative research field and allowed myself to fully embrace what it means to conduct qualitative research. I can now appreciate the subjective value of

studying participants in their natural setting and how this can uncover interesting and previously unexplored concepts within a phenomenon.

Although I could see the benefits of conducting this research using qualitative methods, I will admit that adjusting to coping with such large volumes of data felt overwhelming for a considerable amount of time. I was initially unsure how I was going to be able to report on such a broad range of findings from so many different participants. However, once I began to analyse my findings, I soon sensed common themes and patterns emerging, which made the data feel much more manageable.

One of the greatest struggles I have encountered throughout this whole process is understanding how to write as a qualitative researcher and determining the most effective and appropriate ways of disseminating my findings. When reporting quantitative work, I have been able to rely on tables, graphs and statistics to do a lot of the groundwork for me, however, the concept of interpreting the spoken words of others and exploring the meaning behind this left me feeling uneasy. This is not something that felt natural, and I began to question everything I was doing, whether the project was even viable anymore and doubting whether I was capable of producing this thesis. However, as the study progressed, I found myself becoming more comfortable with interpreting my findings and it soon became somewhat instinctive. I wanted to explore the meaning behind what participants had said during interview and as the study progressed this interest became deeper. With a combination of consistently engaging with the qualitative literature, receiving feedback from my writing from my supervisors and pure determination I do feel that I have achieved what I had initially believed to be the impossible.

Although this is a limitation in the findings I have presented in this thesis, the journey I have been through has seen me evolve from a fully positivist researcher into one who has become more familiar with and put to use, techniques and practices that are associated with constructivist-interpretivist research.

I have learnt the value of conducting research within this paradigm, and with my improved knowledge and further continued work within this field following completion of my doctoral studies, I hope to revisit the data presented in this thesis and conduct a more detailed thematic analysis of the findings suitable for

publication. I feel it is important to share these findings with other academics in the anatomy education field due to the lack of qualitative research available exploring the phenomenon of students receiving donor information.

This is not to say that this transition has been straight forward and without its challenges and I should acknowledge how, at times, I found this project frustrating. I entered into this research with a fairly strong opinion as to what it meant and should look like for students to show donors respect. This attitude became amplified, specifically during the early stages of donor interviews, whereby I felt as though I was becoming even more protective over donors than I had been before I started my research. Learning the donors' stories and reasons for donating made me feel as though I understood these individuals more than anyone else and this translated into protection over donors who were, at the time, in the DR. I was frustrated that not everyone viewed donors in the same light as me and found it difficult to hear students referring to donors as learning tools rather than as human beings.

However, after completing all my interviews with both students and donors and hearing their stories and reasoning behind certain decisions, I came to understand that what it means to be respectful towards donors does not have one singular definition. What one person deems to be respectful and appropriate behaviour could well be determined to be inappropriate by another individual. I considered whether perhaps I was being unfair on students and needed to have more flexibility in my approach to what it means to be respectful. As such, after interviewing all of the students, I began to accept that not every undesirable act a student makes in the DR is because of disrespectful behaviour towards donors. Sometimes mistakes are made, and it is not always down to a lack of caring or respect for the donors; they are simply just a mistake and I have come to accept that that is OK. It is part of what makes us human; and you cannot judge an individual's entire character on a singular, potentially isolated, incident. Instead, I felt even more grateful that students felt they could trust me enough to open up fully and share their honest experiences of working with donors.

There were occasions whereby I realised that my closeness to the research and the participants of this study (particularly the students) presented challenges which I needed to overcome. I found it especially difficult to prevent specific

experiences with students in the DR from affecting my interpretations of the data. Additionally, it is important to acknowledge that I approached this study with a strong investment in donors and, as such, it was important to ensure I did not dismiss or misinterpret findings that did not align with my own personal stance. To overcome this challenge, I consistently analysed and re-analysed the data gathered. This has helped to ensure that I have reported what the students *actually* said, rather than what I *think* they have said based on my own experiences in the DR. I have documented evidence of my attempts to do this throughout this thesis, by providing multiple suggestions as to what students may have meant when considering quotations from interviews in isolation.

Adopting new methodologies and incorporating the practice of reflexivity, although difficult at first, has ultimately provided me with a new appreciation for the true value of information that can be gathered using a qualitative approach. Furthermore, as I have learnt to become a more reflexive researcher, I have noticed a change in my approach to research of this nature, particularly by becoming more inclined to hesitate before jumping to conclusions, as well as questioning the meaning behind my findings.

In light of this, I feel that the experience I have undertaken by talking to both students and donors during this research has left me well placed to understand and attempt to foster the relationship between students and donors. The research I have presented in this thesis provides a previously unexplored perspective regarding student-donor relationships. I have provided students and donors with a platform to talk about an aspect of anatomical education that is often overlooked yet considered to play a central role in students' professional development. Furthermore, I have explored the possibility, along with potential impacts, of personalising the well-recognised student-donor relationship. As a result of this knowledge, I feel I am well placed to continue research in this field, which could ultimately prove beneficial in the professional setting for students' future careers.

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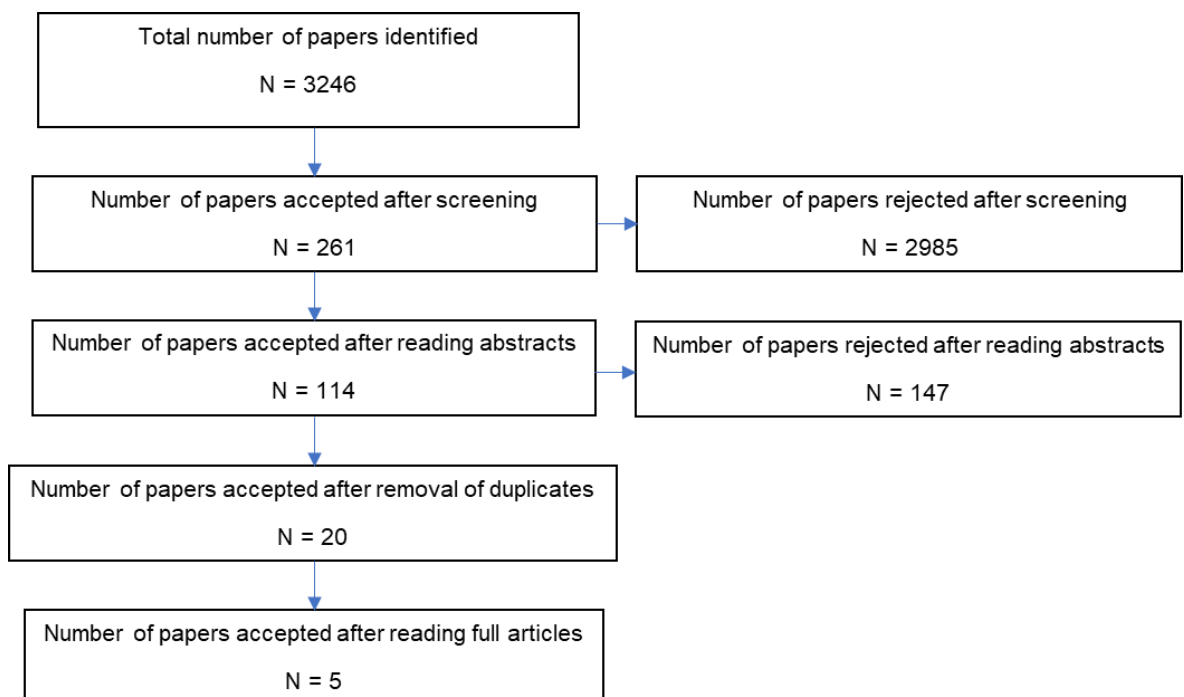
## Appendices

### Appendix 1 Example of literature search to determine articles investigating student reactions to learning more about donors

The following databases were searched: Wiley Online Library, Cinhal, ERIC, Scopus, Web of terms science, ScienceDirect, Pubmed, Embase, Psychinfo and Medline. Search terms were used in combination with each other, as well as in a truncated format: "Dissection", "Student", "Humanism", "Professionalism", "Donor", "Respect", "Empathy". Search were also truncated using the '\$' symbol, for example "Dissection" was truncated to "Dissect\$". When using the term "Cadaver", there was no difference in results obtained. I used the term "Dissection" instead of "Anatomy" as I was specifically interested in articles relating to dissection.

The diagram shows the total number of articles returned from these searches. Initially all articles were screened from each search and those that indicated to be relevant (by the terms used in the articles title) were accepted. After reading all abstracts, only those that referred to donors and medical students in dissection specifically, were accepted. Duplicates were removed and the resulting 20 articles were read in full. In terms of studies that had investigated how medical students felt regarding learning more about body donors, or studies that had actively explored how donor information had affected medicals students, only 5 were identified, highlighting the lack of research into this topic. I also went through all 5 articles reference lists to ensure I had not missed any papers, as well as checking for what papers had referenced these 5.

Further studies have since been published. I have typically identified these by searching for papers that have referenced these 5 core papers.



## Appendix 2 The annual memorial service at the University of Leeds

Annually, second year medical students studying at the University of Leeds are given the opportunity to organise, as well as attend, a memorial service. The service is held in the Great Hall and all family members of the donors whom students have had the benefit from learning from during that academic year, are also invited to attend. This is the first time that medical students will come in to contact with those closest to the donors they have been dissecting during the anatomy course.

The service consists of readings, poems, music, singing and reflections which are all chosen, and delivered, by students. Also during the service, the names of the donors from the relevant academic year are read aloud.

Family members attending the service are invited to bring photographs of their loved one to show them during life and during the service, both family members as well as any students and academic staff present are given the option to light a candle in remembrance of the donors.

As not all students are able to participate in the service directly, they are given the opportunity to write messages of thanks, which are then hung on wooden trees that sit either side of the photographs brought by donor family members which are on display at the front of the hall, for everyone to see during the service. Donor families are welcome to take a message from the trees home with them after the service.

Following the service, students and donor families are invited for refreshments whereby the students have the opportunity to speak with the donor families directly, and learn more about the donors in general.



Wooden trees with messages of thanks to donors and their families, handwritten by medical students at the University of Leeds. This concept was introduced following a suggestion from the students who took part in a pilot study focus group as part of this PhD research.

### **Appendix 3 Recruitment announcement: Pilot study - Medical student focus groups**

Subject of notification: Seeking participants for body donor study.

Dear student,

My name is Faye and I am a PhD student. I work as a demonstrator in the dissection room during anatomy practical classes here at the University of Leeds. I am also undertaking a PhD looking at the effects of introducing body donor information to medical students.

Reports from this type of study at the University of Michigan, United States, have suggested that medical students are curious to know more about the life of body donors and their reasons for donating their bodies to medical education (Bohl et al., 2013). However, there are no known studies for this type of research from a University within the United Kingdom.

I would like to invite you to be a part of this study. The study will involve learning more about student-cadaver relationships in the dissection room by talking to you to ask for your thoughts and experiences. The aim is to establish whether medical students would like to receive information about body donors by asking for your opinions and thoughts on this subject. The long term aim is to improve the student educational experience with regard to the dissection component of your degree.

The study will gather information from first and second year medical students, as well as students who are intercalating in anatomy, through focus group discussions.

I would be grateful if you would participate in my study and ask that you contact me using the information below to inform me of your interest. Following this, you will receive more detailed information about the study, allowing you to decide whether you would like to participate or not. There is no pressure to take part, this is completely voluntary.

Thank you for taking the time to read this email and I look forward to hearing from you.

Project title: "The Silent Teacher Unveiled – Does knowing about the lives of body donors affect student attitude, behaviour and performance in practical anatomy classes?"

Kind regards,

Miss Faye Bennett

PhD Student and Anatomy Demonstrator

Leeds Institute of Medical Education

University of Leeds

LS2 9JT

Email: [umfslb@leeds.ac.uk](mailto:umfslb@leeds.ac.uk)

Tel: 0113 343 8769

## **Appendix 4 Recruitment announcement: Phase 1 study - Medical student one-to-one interviews**

Subject of email: Seeking participants for body donor study.

Dear student,

My name is Faye and I am a PhD student. I work as a demonstrator in the dissection room during anatomy practical classes here at the University of Leeds. I am also undertaking a PhD looking at the effects of introducing body donor information to medical students.

Reports from this type of study at the University of Michigan, United States, have suggested that medical students are curious to know more about the life of body donors and their reasons for donating their bodies to medical education (Bohl et al, 2013). However, there are no known studies for this type of research from a University within the United Kingdom.

I would like to invite you to be a part of this study. The study will involve learning more about student-cadaver relationships in the dissection room by talking to you to ask for your thoughts and experiences. The aim is to establish whether medical students would like to receive information about body donors by asking for your opinions and thoughts on this subject. The long term aim is to improve the student educational experience with regard to the dissection component of your degree.

The study will gather information from first and second year medical students, as well as students who are intercalating in anatomy, through one-to-one interviews. The interview can be completed either by telephone or by meeting face-to-face at a convenient time for yourself.

I would be grateful if you would participate in my study and ask that you contact me using the information below to inform me of your interest. Following this, you will receive more detailed information about the study, allowing you to decide whether you would like to participate or not. There is no pressure to take part, this is completely voluntary.

Thank you for taking the time to read this email and I look forward to hearing from you.

Project title: "The Silent Teacher Unveiled – Does knowing about the lives of body donors affect student attitude, behaviour and performance in practical anatomy classes?"

Kind regards,

Miss Faye Bennett

PhD Student and Anatomy Demonstrator

Leeds Institute of Medical Education

University of Leeds

LS2 9JT

Email: [umfslb@leeds.ac.uk](mailto:umfslb@leeds.ac.uk)

Tel: 0113 343 8769

## Appendix 5 Participant information sheet: Pilot study - Medical student focus groups



UNIVERSITY OF LEEDS

### RESEARCH PARTICIPANT INFORMATION SHEET

#### STUDY TITLE:

The Silent Teacher Unveiled – Does knowing about the lives of body donors affect student attitude, behaviour and performance in practical anatomy classes?

#### WHAT IS THE PURPOSE OF THIS STUDY?

This study aims to learn more about the relationship that medical students form with their cadaver whilst they are dissecting. Students will be encouraged to think about the process of body donation and why people choose to donate their bodies to medical science. This study has been approved by the University Of Leeds School Of Medicine Research Ethics Committee. Reference: MREC15-082.

#### WHY HAVE I BEEN INVITED TO TAKE PART?

The best way to learn about the student-cadaver relationships is to ask medical students to give their experiences and views, therefore, first and second year medical students as well as medical students intercalating in anatomy have been invited to take part. With experience in the dissection room, you are well equipped to answer our questions and your opinions are highly valued.

#### WHAT WILL THE STUDY INVOLVE?

This study will involve you taking part in a focus group along with 4-5 of your peers to discuss topics surrounding the dissection experience, body donation and working with cadavers. Each focus group will take place on campus at the University of Leeds and will last 45-60 minutes. The focus groups will be audiotaped to allow for analysis following the session. This recording will not be used for any other reason without further written consent.

Before the focus groups begin, you will be asked to read and sign a consent form to show you agree to take part in the study.

#### WILL I REMAIN ANONYMOUS AND WILL THE INFORMATION BE KEPT CONFIDENTIAL?

Your name will be changed to a code following the focus group and no identifying features will be disclosed in any written work. The only people with access to the data will be those on the research team, and this will be after the data has been anonymised.

You will always remain anonymous, but direct quotes or information collected may be used in work to be published. Also, the nature of a focus group will mean others in the discussion will hear what is being said, however, they will be asked to respect the confidentiality of what is being discussed.

#### WHY IS THIS STUDY IMPORTANT?

This is an opportunity for you to tell us exactly how you feel about dissection and working with cadavers and to potentially have a say in how dissection is approached in the future.

#### WHAT DISADVANTAGES ARE THERE TO TAKING PART?

Some of the topics to be discussed in the focus groups will be of a sensitive nature and may be upsetting for some people. If you are affected by the issues discussed within the focus group then support is available from the University of Leeds Student Counselling Centre.

#### HOW WILL THE DATA BE USED?

The focus groups will give data that will contribute to further study in to the effects of presenting medical students with donor information.

#### DO I HAVE TO TAKE PART?

No! This is a completely voluntary exercise. It is up to you to decide if you would like to participate after reading this information sheet. You will then be asked to sign a consent form, but if you wish to withdraw you may do so. It is important for you understand that once the data has been collected in the focus group, you will be unable to withdraw as this will affect the quality of the data collected. If you choose not to take part, this will not affect any future curriculum assessments.

#### ANY QUESTIONS?

If there is anything you would like to discuss further or if you have any questions then please do not hesitate to contact me:

Miss Faye Bennett

PhD Student and Anatomy Demonstrator

Email: [umfslb@leeds.ac.uk](mailto:umfslb@leeds.ac.uk)

Phone: 0113 343 869

#### **Supervisor details:**

Dr David Roberts

Division of Anatomy

School of Medicine

Email: [d.j.h.roberts@leeds.ac.uk](mailto:d.j.h.roberts@leeds.ac.uk)

Phone: 0113 343 4294

Prof. Trudie Roberts

Leeds Institute of Medical

Education

School of Medicine

Email: [t.e.roberts@leeds.ac.uk](mailto:t.e.roberts@leeds.ac.uk)

Phone: 0113 343 1657

#### **Contact for support:**

University of Leeds

Student Counselling

Centre

19 Clarendon Place

Leeds

LS2 9JY

[scc@leeds.ac.uk](mailto:scc@leeds.ac.uk)

01133434107

## Appendix 6 Informed consent form: Pilot study – Medical student focus groups

### Informed consent form



**UNIVERSITY OF LEEDS**

<b>Study title:</b> The Silent Teacher Unveiled – Does knowing about the lives of body donors affect student attitude, behaviour and performance in practical anatomy classes?		<i>Please initial next to the statement if you agree</i>
	I agree that I have read and understood the information sheet provided for the above study.	
	I have had the opportunity to ask questions about the study.	
	I agree that I am participating in this study voluntarily.	
	I understand my right to withdraw from the study up until the point where data has been collected, as I appreciate this will affect the quality of the data. I also understand my right not to answer any particular question(s).	
	I understand my name will not be linked with the research materials and I will remain anonymous. I give permission for members of the research team to have access to my anonymised responses, only if they preserve the confidentiality of the data.	
	I understand how the data will be stored in a secure location and destroyed at the end of the study.	
	I agree to the focus group being audio recorded.	
	I agree for anonymised quotes to be used in publications.	
	I agree to respect the confidentiality of the information discussed within the focus group and will not talk to others about what I have heard.	
	I understand that as part of a focus group, confidentiality cannot be promised on behalf of other participants, although it will be requested.	

**Participant:**

\_\_\_\_\_  
Name of participant

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date (dd/mm/yy)

**Researcher**

\_\_\_\_\_  
Name of researcher

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date (dd/mm/yy)

## Appendix 7 Participant information sheet: Phase 1 study - Medical student one-to-one interviews



UNIVERSITY OF LEEDS

### RESEARCH PARTICIPANT INFORMATION SHEET

#### STUDY TITLE:

The Silent Teacher Unveiled – Does knowing about the lives of body donors affect student attitude, behaviour and performance in practical anatomy classes?

#### WHAT IS THE PURPOSE OF THIS STUDY?

This study aims to learn more about the relationship that medical students form with their cadaver whilst they are dissecting. Students will be encouraged to think about the process of body donation and why people choose to donate their bodies to medical science. This study has been approved by the University Of Leeds School Of Medicine Research Ethics Committee. Reference: MREC15-082.

#### WHY HAVE I BEEN INVITED TO TAKE PART?

The best way to learn about how students feel about working with cadavers, is to ask medical students to give their experiences and views. Therefore, first and second year medical students as well as students intercalating the BSc Clinical Anatomy into their medical studies have been invited to take part. With experience in the dissection room, you are well equipped to answer our questions and your opinions are highly valued.

#### WHAT WILL THE STUDY INVOLVE?

This study will involve you taking part in a one-to-one interview with the lead researcher (Miss Faye Bennett) to discuss topics surrounding dissection, body donation and working with cadavers. The interview will last 20-30 minutes and it will be your choice whether you prefer to carry out the interview over the phone or face-to-face. The interview will be audio recorded to allow for analysis following the session. This recording will not be used for any other reason without further written consent.

Before the interview begins, you will be asked to read and sign a consent form to show you agree to take part in the study. If you chose to be interviewed over the phone, you will be emailed a copy of the consent form which will need to be signed and returned to Faye Bennett on [umfs1b@leeds.ac.uk](mailto:umfs1b@leeds.ac.uk) before the interview begins.

#### WILL I REMAIN ANONYMOUS AND WILL THE INFORMATION BE KEPT CONFIDENTIAL?

Your name will be changed to a code following the interview and no identifying features will be disclosed in any written work. The only people with access to the data will be those on the research team, and this will be after the data has been anonymised.

You will always remain anonymous, but direct quotes or information collected may be used in work to be published.

#### WHY IS THIS STUDY IMPORTANT?

This is an opportunity for you to tell us exactly how you feel about dissection and working with cadavers and to potentially have a say in how dissection is approached in the future. The outcomes of this study may benefit future generations of medical students.

#### WHAT DISADVANTAGES ARE THERE TO TAKING PART?

Some of the topics to be discussed in the interview will be of a sensitive nature and may be upsetting for some people. If you are affected by the issues discussed within the interview then support is available from the University of Leeds Student Counselling Centre (details below).

#### HOW WILL THE DATA BE USED?

The interviews will gather data that will contribute to further study in to the effects of presenting medical students with donor information.

#### DO I HAVE TO TAKE PART?

No! This is a completely voluntary exercise. It is up to you to decide if you would like to participate after reading this information sheet. You will then be asked to sign a consent form, but if you wish to withdraw you may do so. You will have 7 days following the interview to contact Miss Faye Bennett using the contact details listed below, to inform her of your decision to withdraw. The responses you have provided will be withdrawn from the data set and destroyed. If you choose not to take part, this will not affect any future curriculum assessments.

#### ANY QUESTIONS?

If there is anything you would like to discuss further or if you have any questions then please do not hesitate to contact me:

Miss Faye Bennett

PhD Student and Anatomy Demonstrator

Email: [umfslb@leeds.ac.uk](mailto:umfslb@leeds.ac.uk)

Phone: 0113 343 8769

#### **Supervisor details:**

Dr David Roberts

Division of Anatomy

School of Medicine

Email: [d.j.h.roberts@leeds.ac.uk](mailto:d.j.h.roberts@leeds.ac.uk)

Phone: 0113 343 4294

Prof. Trudie Roberts

Leeds Institute of Medical

Education

School of Medicine

Email: [t.e.roberts@leeds.ac.uk](mailto:t.e.roberts@leeds.ac.uk)

Phone: 0113 343 1657

#### **Contact for support:**

University of Leeds

Student Counselling Centre

19 Clarendon Place

Leeds

LS2 9JY

Email: [scc@leeds.ac.uk](mailto:scc@leeds.ac.uk)

Phone: 01133434107

## Appendix 8 Informed consent form: Phase 1 study – Medical student one-to-one interviews



**UNIVERSITY OF LEEDS**

### Informed consent form

<b>Study title:</b> The Silent Teacher Unveiled – Does knowing about the lives of body donors affect student attitude, behaviour and performance in practical anatomy classes?		<i>Please tick next to the statement if you agree</i>
1.	I agree that I have read and understood the information sheet provided for the above study.	
2.	I have had the opportunity to ask questions about the study.	
3.	I agree that I am participating in this study voluntarily.	
4.	I understand my right to withdraw from the study for up to 7 days following completion of the interview.	
5.	I also understand my right not to answer any particular question(s).	
6.	I understand my name will not be linked with the research materials and I will remain anonymous. I give permission for members of the research team to have access to my anonymised responses, only if they preserve the confidentiality of the data.	
7.	I understand how the data will be stored in a secure location and destroyed at the end of the study.	
8.	I agree to the interview being audio recorded.	
9.	I agree for anonymised quotes to be used in publications.	

**Participant:**

\_\_\_\_\_  
Name of participant

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date (dd/mm/yy)

**Researcher**

\_\_\_\_\_  
Name of researcher

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date (dd/mm/yy)

## **Appendix 9 Recruitment email: Phase 3 - sent to Post-DR students inviting them to attend the presentation developed on body donors and donation**

Subject of email: Presentation on body donors and donation.

Dear student,

My name is Faye and I am a PhD student. I work as a demonstrator in the dissection room during anatomy practical classes here at the University of Leeds. I am also undertaking a PhD looking at the effects of introducing body donor information to medical students.

Have you ever wondered:

- How do people donate their bodies?
- What happens when a person arrives at the University of Leeds after passing away?
- How has the history of anatomy influenced modern day practice?
- Who donates their body to Leeds University and why do they do it?

As a result of my studies, I have developed a presentation which will answer these questions. You are invited to attend this presentation with the option to taking part in an interview in the weeks following the talk.

The presentation will take place on Wednesday 2nd May 2018 in the Medical Lecture Theatre on Level 7 in Worsley building from 12:30-13:30pm. All first year students are welcome to attend.

If you would like to be involved in this study, then please contact me using the information below. Following this, you will receive more detailed information, allowing you to decide whether you would like to participate or not.

Thank you for taking the time to read this email and I look forward to hearing from you.

Kind regards,

Miss Faye Bennett

Email: [umfslb@leeds.ac.uk](mailto:umfslb@leeds.ac.uk)

Tel: 0113 343 8769

**Appendix 10 Slip of paper students during Phase 3 returned to express their interest in being interviewed, following the body donors presentation**



**UNIVERSITY OF LEEDS**

If you are happy to participate in an interview following this presentation (convenient date and time to be agreed between yourself and Faye), please provide your University of Leeds email address below:

Name:

Email Address:

Version 1.1

27/11/2017

## Appendix 11 Participant information sheet: Phase 3 study - Medical student one-to-one interviews



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### RESEARCH PARTICIPANT INFORMATION SHEET

#### STUDY TITLE:

The Silent Teacher Unveiled – Does knowing about the lives of body donors affect student attitude, behaviour and performance in practical anatomy classes?

#### WHAT IS THE PURPOSE OF THIS STUDY?

This study began in October 2015. The initial aims were to find out how medical students would feel about receiving more personal information about the people who had donated their bodies for anatomy teaching, and to gather such information from potential body donors themselves. Following collection of this donor information, a presentation has been developed to inform students about the donors and the body donation process. All first year medical students will be invited to attend this presentation.

The purpose of the current phase of the study is to gather student thoughts and opinions about the information provided during the presentation. This will be achieved by interviewing students who wish to participate in the study.

This study has been approved by the University Of Leeds School Of Medicine Research Ethics Committee. Reference: MREC17-047.

#### WHY HAVE I BEEN INVITED TO TAKE PART?

The initial phases of this study found that the majority of medical students thought that information about body donation and donors would be best made available during the first year of medical school. This is why you have been invited to participate in this research at this time. Your opinions are a key part of this work and are highly valued.

#### WHAT WILL THE STUDY INVOLVE?

This study has two stages. The first stage will involve attending a presentation about body donors and the donation process at the University of Leeds. Personal information about potential donors will be considered in this presentation. The second stage will involve a one-to-one interview with the lead researcher (Miss Faye

Bennett) to discuss your feelings and attitudes about the information provided during the presentation. If more than 10 students volunteer for interview, then participants will be selected at random. There is no limit on the number of students able to attend the presentation. There is no requirement to take part in an interview following the presentation if you prefer not to.

The presentation will last less than 60 minutes. The interview, which will be held on a later date, will take 20-30 minutes. The interview will be audio recorded to allow for analysis. This recording will not be used for any other reason without further written consent.

Before the interview begins, you will be asked to read and sign a consent form to show you agree to take part in the study.

**Please turn over**

#### WILL I REMAIN ANONYMOUS AND WILL THE INFORMATION BE KEPT CONFIDENTIAL?

Interviews will be recorded using a hand-held audio recording device. Your name will be removed from any audio recordings and related documents and replaced by a code. Nothing which might identify you will be disclosed. The research team will only have access to the anonymised data. No-one else will have access to the data.

You will always remain anonymous, but direct quotes or information collected during the interviews may be used in work to be published.

#### WHY IS THIS STUDY IMPORTANT?

Depending on the comments collected in the interviews, the presentation about donors and the donation process could be included for all medical students at the University of Leeds, meaning you could influence how the anatomy component of the medical degree is approached in future. You may find the presentation useful in expanding your own knowledge regarding the practice of body donation for the

purposes of anatomy learning. The outcomes of this study may benefit future generations of medical students.

#### WHAT DISADVANTAGES ARE THERE TO TAKING PART?

Some of the topics to be discussed in the presentation and interview will be of a sensitive nature and may be upsetting for some people. If you are affected by the issues discussed within the interview then support is available from the University of Leeds Student Counselling Centre (details below).

#### HOW WILL THE DATA BE USED?

The data will be used to inform further study into the effects of presenting medical students with donor information.

#### DO I HAVE TO TAKE PART?

No! This is a completely voluntary exercise. It is up to you to decide if you would like to participate after reading this information sheet. If you plan to attend the presentation, you will need to let Miss Faye Bennett know. Following your attendance at the presentation, if you are willing to participate in an interview, you will be asked to sign a consent form.

You can withdraw from the study any time up to 7 days following the interview (to do so, please contact Miss Faye Bennett using the contact details listed below and inform her of your decision). The responses you have provided will be withdrawn from the data set and destroyed.

If you choose not to take part, this will not affect any future assessments that you will take as part of your MBChB studies.

#### ANY QUESTIONS?

If there is anything you would like to discuss further or if you have any questions then please do not hesitate to contact me:

**Please turn over**

Miss Faye Bennett  
PhD Student and Anatomy Teaching Fellow  
Email: [umfslb@leeds.ac.uk](mailto:umfslb@leeds.ac.uk)  
Phone: 0113 343 8769

**Supervisor details:**

Dr David Roberts  
Division of Anatomy  
School of Medicine  
Email: [d.j.h.roberts@leeds.ac.uk](mailto:d.j.h.roberts@leeds.ac.uk)  
Phone: 0113 343 4294

Professor Trudie Roberts  
Leeds Institute of Medical Education  
School of Medicine  
Email: [t.e.roberts@leeds.ac.uk](mailto:t.e.roberts@leeds.ac.uk)  
Phone: 0113 343 1667

**Contact for support:**

University of Leeds  
Student Counselling Centre  
19 Clarendon Place  
Leeds  
LS2 9JY  
Email: [scc@leeds.ac.uk](mailto:scc@leeds.ac.uk)  
Phone: 01133434107

**Appendix 12 Informed consent form: Phase 3 study – Medical student  
one-to-one interviews**



**UNIVERSITY OF LEEDS**

**Interview consent form**

<b>Study title:</b> The Silent Teacher Unveiled – Does knowing about the lives of body donors affect student attitude, behaviour and performance in practical anatomy classes?		<i>Please tick next to the statement if you agree</i>
1.	I agree that I have read and understood the information sheet provided for the above study.	
2.	I have had the opportunity to ask questions about the study.	
3.	I agree that I am participating in this study voluntarily.	
4.	I understand my right to withdraw from the study for up to 7 days following completion of the interview.	
5.	I also understand my right not to answer any particular question(s).	
6.	I understand my name will not be linked with the research materials and I will remain anonymous. I give permission for members of the research team to have access to my anonymised responses, only if they preserve the confidentiality of the data.	
7.	I understand how the data will be stored in a secure location and destroyed at the end of the study.	
8.	I agree to the interview being audio recorded.	
9.	I agree for anonymised quotes to be used in publications.	

**Participant:**

\_\_\_\_\_  
Name of participant

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date (dd/mm/yy)

**Researcher**

\_\_\_\_\_  
Name of researcher

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date (dd/mm/yy)

## **Appendix 13 Letter inviting newly registering donors to participate in the study: Phase 2 – Donor interviews**

Dear .....

My name is Faye Bennett and I am a PhD student at the University of Leeds. I also work in the anatomy laboratory, teaching first and second year medical students. The focus of my PhD studies is to learn more about the relationships that form between medical students and those who have donated their body, whilst the students are learning in the anatomy laboratory.

I would like to find out whether allowing medical students to learn more about the lives of those who have gifted their body to medical education, will aid their professional development and enhance their learning in the anatomy laboratory.

Speaking from personal experience, when I did a Masters in Human Anatomy, I was always curious to learn more about the donor I worked with in the anatomy laboratory. Had I been able to learn more about this person, I feel this would have greatly enhanced my learning.

Alongside learning more about the lives of their donors, I feel it is equally important for medical students to gain an appreciation as to why individuals choose to donate their body to medical education. I suspect that there are many reasons why people decide to donate their body, but it would be beneficial to explore this further with individuals choosing to donate their body to medical education.

I am therefore writing to you, to ask if you would like to take part in my study. This would involve a short, informal telephone interview in which I will ask questions about why you have chosen to donate your body to medical education and to gather some more personal information about yourself.

There is no obligation to take part in this study. Your wish to donate your body will be treated in exactly the same way, whether you choose to take part in the study or not. If you do choose to take part, your contribution would be invaluable.

If you have any questions regarding this study then please do not hesitate to contact me using the contact details below.

I look forward to hearing from you.

Yours Sincerely,

Miss Faye Bennett

PhD student and Anatomy Demonstrator

Email: [umfslb@leeds.ac.uk](mailto:umfslb@leeds.ac.uk)

Phone: 0113 343 8769

## Appendix 14 Participant information sheet: Phase 2 study – Donor interviews



UNIVERSITY OF LEEDS

### RESEARCH PARTICIPANT INFORMATION SHEET

#### STUDY TITLE

The Silent Teacher Unveiled – Does knowing about the lives of body donors affect student attitude, behaviour and performance in practical anatomy classes?

#### WHAT IS THE PURPOSE OF THIS STUDY?

This study forms part of a PhD research project looking at how medical students view the donated bodies that they work with in the anatomy laboratory. It is common practice in the United Kingdom that medical students receive very little information about donors, learning only their age and probable cause of death. This study aims to gather more detailed information from potential donors before passing it on to medical students, to assess whether their attitudes during anatomy practical classes are affected by them knowing more about the donors' lives. You have been contacted about this study due to your interest in registering as a donor at the University of Leeds.

This study has been approved by the University Of Leeds School Of Medicine Research Ethics Committee, Reference: MREC15-124.

#### WHAT WILL THE STUDY INVOLVE?

This study will involve a one-to-one telephone interview with me, Miss Faye Bennett. I am an anatomy teacher and PhD student at the University of Leeds. The interview will involve a series of questions about your decision to donate your body for medical education. I will also ask more general questions about you and your life, including things such as your occupation, interests, relatives etc. Of course, there will be no obligation to answer any question that you're not completely comfortable with. I will be audio recording all the interviews.

#### WHO WILL HAVE ACCESS TO THE INFORMATION I PROVIDE?

I will audio record the interview. I will be the only person who has access to this recording. It will be stored at the University on a secure computer and will be password-protected.

I will listen to the interview and write out your answers. From this point onward, your name will not be linked to the information you have provided. The written answers from all the interviews I conduct will be provided to medical students who would like to know more about people who donate their body for medical education. The students will not know who provided the information.

Anonymised direct quotes and information collected may also be included in publications such as journal articles or books. I will ask your permission to use your anonymous information in this way on the consent form that you will complete.

#### WILL INFORMATION ABOUT ME REMAIN CONFIDENTIAL?

Any information I give to the medical students will be anonymised. In addition, the students will be asked to sign an agreement to keep this anonymous information confidential. I cannot guarantee that the students will maintain confidentiality, other than to say that student doctors are expected to behave professionally, just like other members of the medical profession.

Breaking confidentiality will be taken very seriously and may lead to disciplinary action by the Medical School.

I can guarantee that it will not be possible for the students to link your name to the information I give them.

#### IS THERE ANY BENEFIT TO TAKING PART?

There are no direct benefits to you from taking part in the study. However, it is the first of its kind in the UK so if you decide to take part, you will be contributing to knowledge and possibly making a difference to how medical students are taught.

#### WHAT DISADVANTAGES ARE THERE TO TAKING PART?

Discussing the topic of donating your body is of a sensitive nature and may be upsetting for you. I will only start the interview if there is someone available that you can talk to for support during and immediately after it. If you become upset during the interview, then you will be given the opportunity to stop and the interview can be rescheduled at a different time, or not at all if you would prefer. Your answers up until that time will be included in this study unless you tell me that you wish to withdraw them.

Of course, you don't have to answer any particular questions in the interview if you prefer not to.

#### AM I ABLE TO WITHDRAW FROM THE STUDY ONCE I HAVE COMPLETED A TELEPHONE INTERVIEW?

Yes. You may withdraw your answers, without giving reason, up until **01/04/2017**. Following this date, the information will be passed on to medical students. To withdraw your information, please contact Mrs Sarah Wilson or Miss Faye Bennett, using the contact details provided at the end of this information.

#### DO I HAVE TO TAKE PART?

There is no obligation to take part in this study and participation is completely voluntary. If you do decide to take part, please could you complete the attached consent form and return it to Mrs Sarah Wilson. A pre-addressed envelope has been provided for you to do this. Your wish to donate your body will be treated in exactly the same way, whether you choose to take part in the study or not. If you do choose to take part, your contribution would be invaluable.

#### WHAT HAPPENS NEXT?

If you choose to take part in this study, I will aim to contact you by telephone within two working weeks of receiving your response, on a day and at a time convenient for you. During this initial conversation, we will make arrangements for the interview and you will be able to ask any questions you may have about the study. I will then contact you, by telephone, on a day and at a time of your choosing to carry out the interview. The interview may last up to 20 minutes and this will be the only time commitment you will be asked to make.

I will confirm with yourself whether you are able to turn to a loved one or friend immediately following the interview, should you need any support if you find the interview to cause you to become upset. If you do not have anyone you can turn to for this type of support, then I will not be able to carry out the interview at that time and it will be rearranged for another time when support will be available. It is important to me that you are not left feeling distressed following the questions I will be asking you.

## ANY QUESTIONS?

**Miss Faye Bennett (Lead researcher)**  
**Anatomy Teacher and PhD Student**  
**LIME Postgraduate Office**  
**Leeds Institute of Medical Education**  
**School of Medicine**  
**University of Leeds**  
**LS2 9JT**  
**Email: [umfslb@leeds.ac.uk](mailto:umfslb@leeds.ac.uk)**  
**Phone: 0113 343 8769**

Mrs Sarah Wilson  
Anatomy Facilities Manager  
School of Medicine  
Room 9.07  
Worsley Building  
University of Leeds  
LS2 9JT  
Email: [S.J.Moore@leeds.ac.uk](mailto:S.J.Moore@leeds.ac.uk)  
Phone: 0113 343 4297

If there is anything you would like to discuss further or if you have any questions, then please do not hesitate to contact me:

### **Supervisor details:**

Dr David Roberts  
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Division of Anatomy  
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Phone: 0113 343 1657

## Appendix 15 Informed consent form: Phase 2 study – Donor interviews



### Informed consent form

UNIVERSITY OF LEEDS

<b>Study title:</b> The Silent Teacher Unveiled – Does knowing about the lives of body donors affect student attitude, behaviour and performance in practical anatomy classes?		<i>Please tick next to the statement if you agree</i>
10.	I agree that I have read and understood the information sheet provided for the above study.	
11.	I have had the opportunity to ask questions about the study.	
12.	I agree that I am participating in this study voluntarily.	
13.	I understand my right to withdraw from the study, without giving reason, up until <b>01/04/2017</b> as after this, my answers will have been passed on to medical students and so withdrawal will not be possible.	
14.	I understand my right not to answer any particular question(s).	
15.	I understand my name will not be linked with the research materials and I will remain anonymous.	
16.	I give permission for members of the research team to have access to my anonymous answers.	
17.	I understand that my information will be stored securely.	
18.	I agree to the telephone interview being recorded.	
19.	I agree for information I have provided (including quotations) to be used in future work as long as I remain anonymous.	
20.	I agree to be contacted twice:  To organise a time to carry out a phone interview  To participate in a phone interview	

**Please complete:**

_____	_____	_____
Name of participant	Signature	Date
(Please Print)		(dd/mm/yy)
_____	_____	_____
Participant contact number	Preferred time of day to be contacted	Preferred day of week to be contacted

**Appendix 16 Example of coding. Transcript taken from an interview with a first-year medical student prior to exposure to the DR (Phase 1). F denotes the researcher (FB) and 6 refers to the pseudonym provided for the student being interviewed.**

1st year prior to exposure to the DR.

F: How do you feel about starting dissection?  
*mixed emotions*

6: Quite nervous and excited at the same time, if that doesn't sound too weird. Nervous because you're seeing a dead person and you're like going to be forming a sort of relationship(?) with them at the same time. But also excited as I've never done anything like that before, so just being able to see what is actually inside of the body and how complicated it is. So, a bit apprehensive, but looking forward to it I think. I'm not worried about it, because you get like a pre-session don't you, to like go in. So I think once that's done, my nerves will be put at rest. But I think more looking forward to it than nervous really.

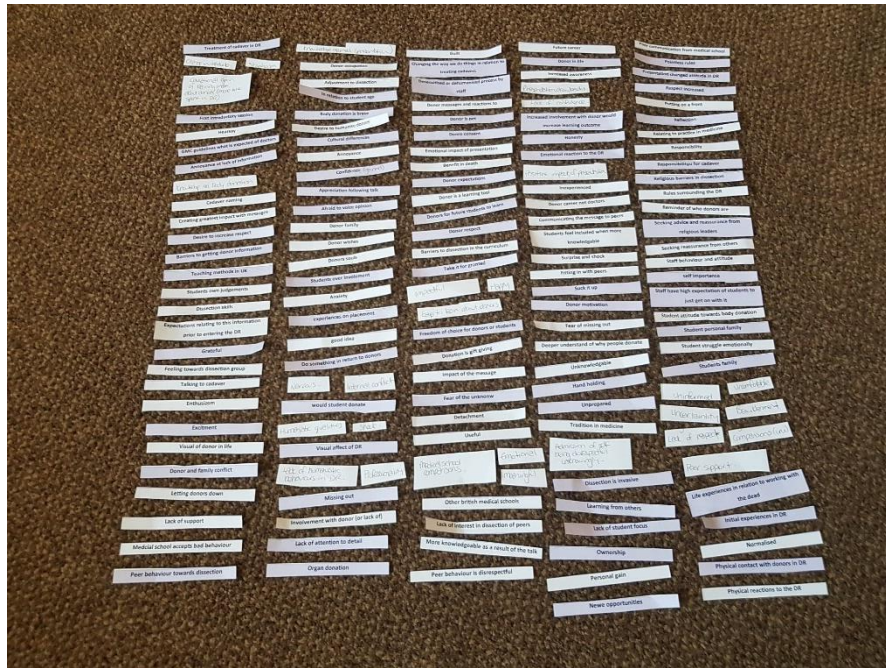
*1st experience*  
*visual expectation of anatomy*  
*uncertainty*  
*emotion (not concerned)*  
*inflict of emotions*  
*preparation - reassurance*  
*self image*  
*personal relationship*

F: So what sort of skills do you think dissection encourages medical students to develop?

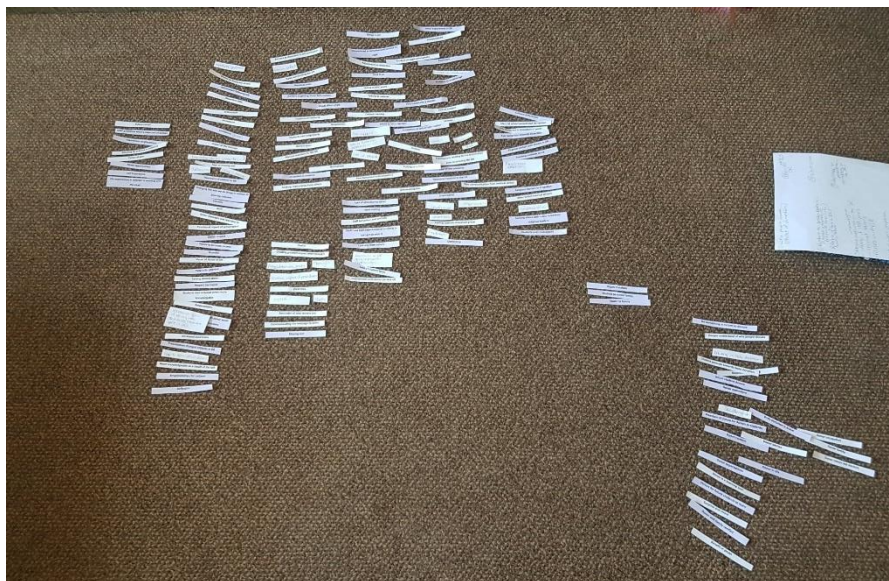
6: Skills like being able to notice small things, all those people are going to have died of a certain disease, so being able to notice that. Sort of respect family and you know, that dead person and their wishes for actually donating their body. Also, like I said, just being able to notice the small things, so the feel of the skin is going to be different, so trying to relate that to real life so yeah.

*link to medicine*  
*professional skills*  
*appreciation*  
*physical interaction with body*  
*is dissection not real*

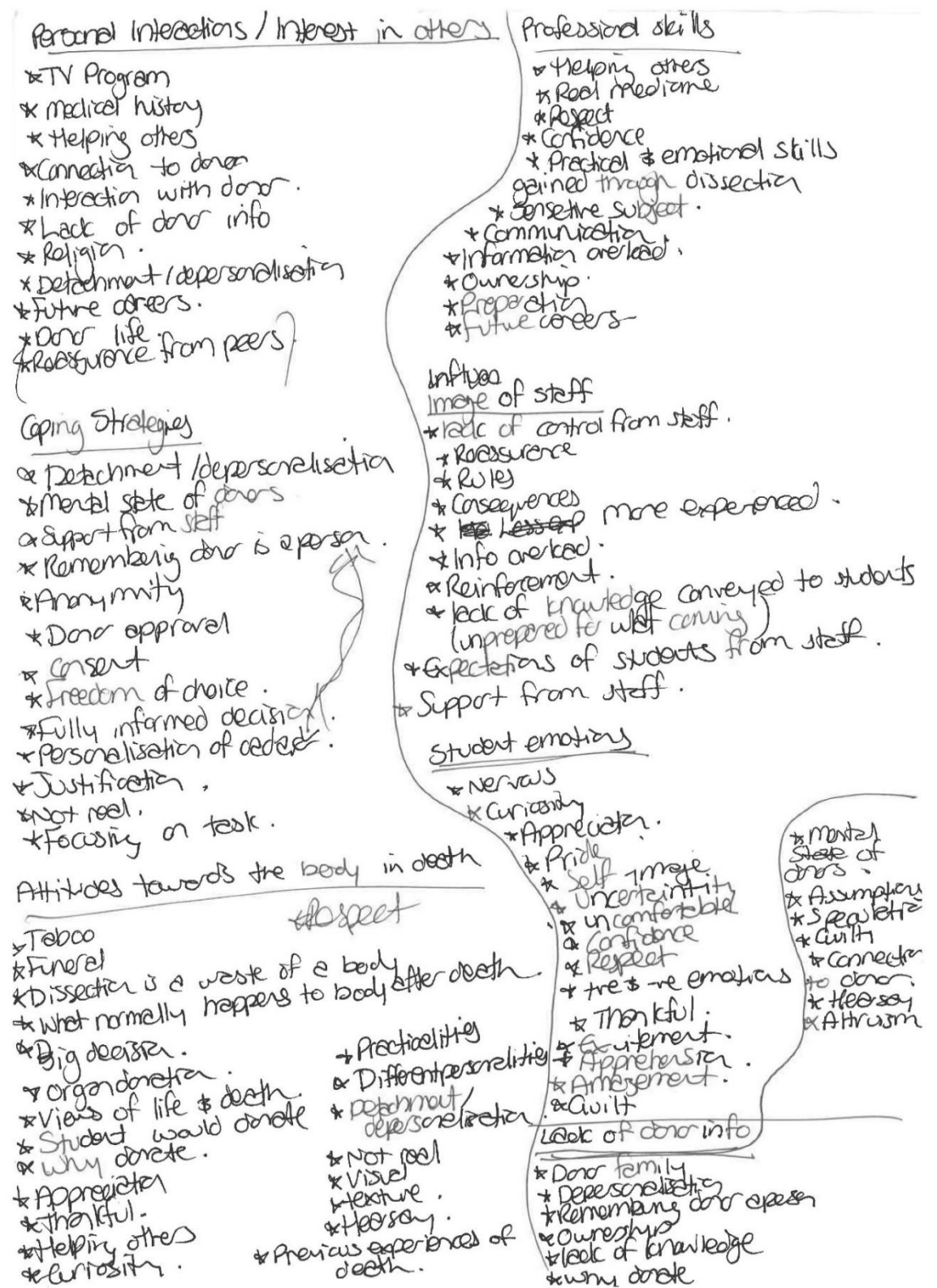
**Appendix 17 Code list printed and cut out to be sorted into different subthemes**



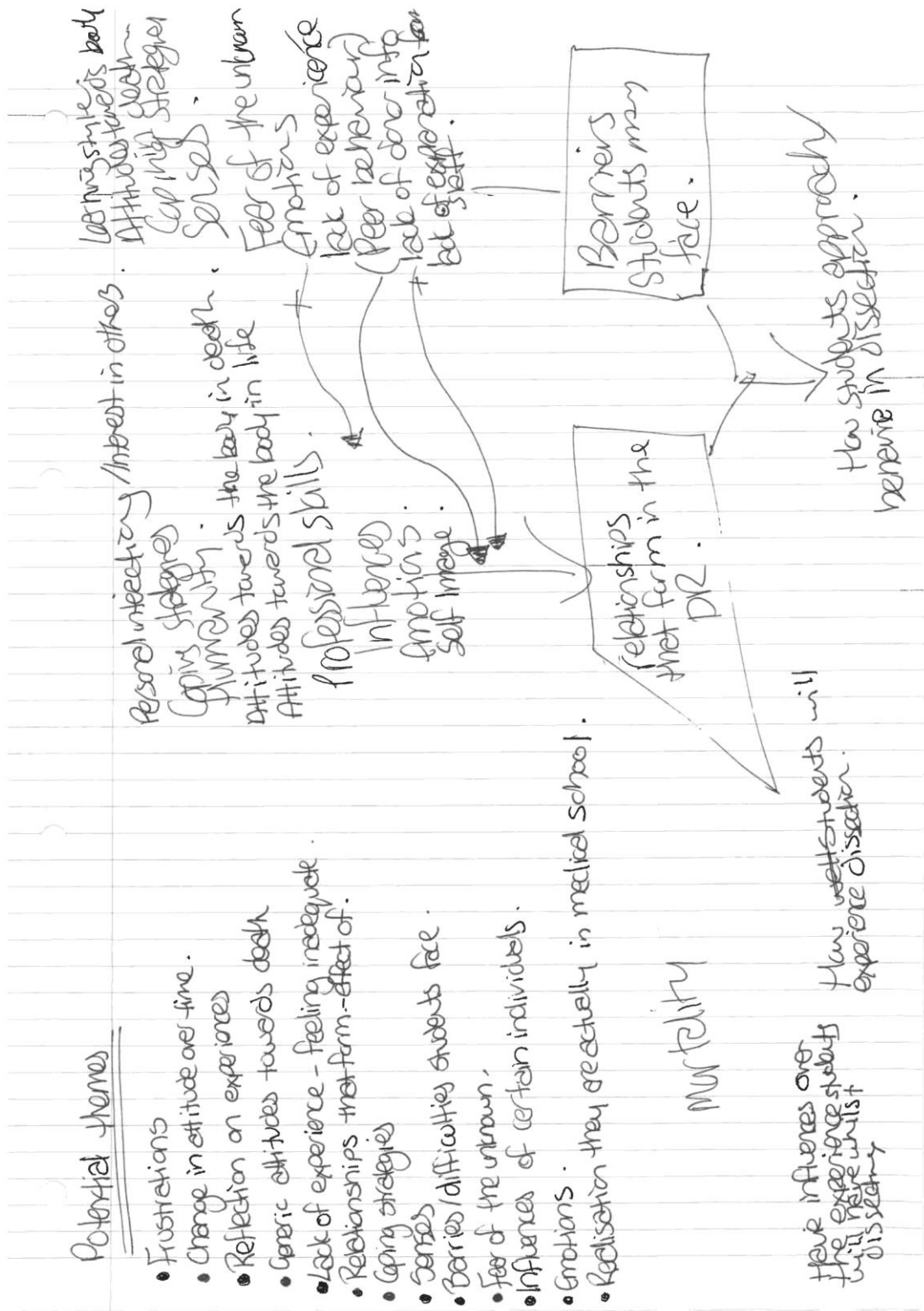
**Appendix 18 Codes sorted into initial subthemes**



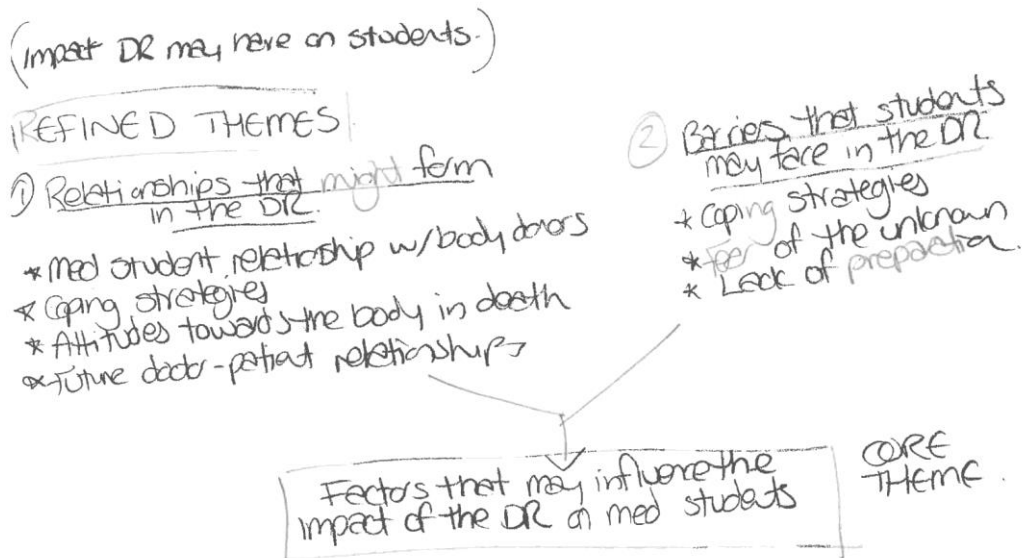
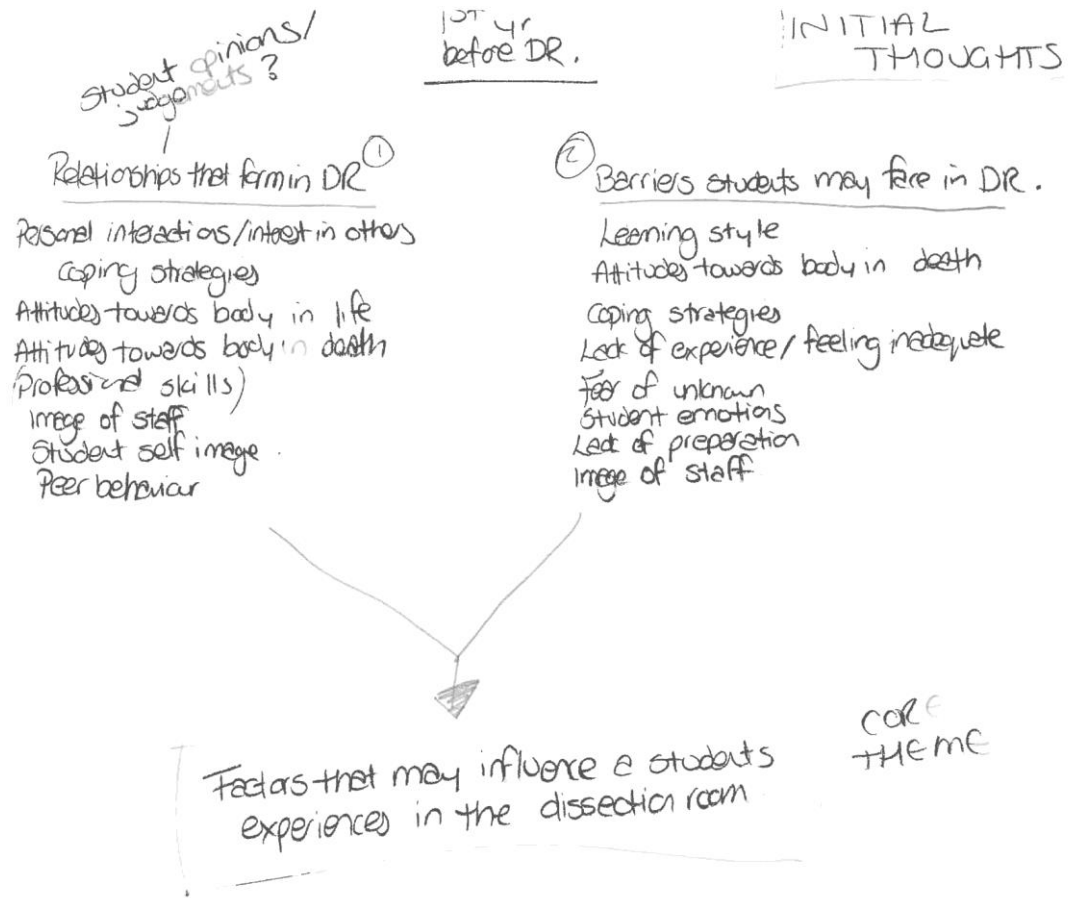
**Appendix 19 Codes (and categories) that have been grouped together to form an initial list of subthemes (underlined). First years prior to exposure to the DR (Phase 1)**



Appendix 20 Initial grouping of subthemes into themes. *First years prior to exposure to the DR (Phase 1)*



**Appendix 21 Refined themes following the iterative process of thematic analysis. First years prior to exposure to the DR (Phase 1)**



## **Appendix 22 Evidence for the development of Tables 4-6 in Phase 2**

### **Development of Table 4 – Source of information about body donation**

Examples of the type of answers that formed the categories:

#### **Knew someone else who had registered:**

- *“My wife suggested it to me”*
- *“My husband has already registered, so I thought I would too”*
- *“My parents were previously registered and donated their bodies”*
- *“I heard about donation when my sister told me she had signed up”*
- *“My mum’s friend is registered to donate and told her all about it”*
- *“I found out that someone in our village had donated their body to Leeds University”*

#### **Media (Television, newspaper, radio, internet):**

- *“I think I read about it in a magazine somewhere”*
- *“I saw an article in a newspaper”*
- *“A few weeks ago I was watching an autopsy programme where an obese patient was dissected”*
- *“I have seen Gunther von Hagen’s programme and think his work is fantastic”*
- *“I am sure I first heard about it years ago on the radio but have since seen more about it on the television”*
- *“I came across the University of Leeds website on body donation”*

#### **Connection to medical school through friend/relative:**

- *“My son went to Birmingham medical school”*
- *“My friends’ daughter went to medical school and told us about the bodies they use to learn”*
- *“My granddaughter is currently in medical school”*

#### **Solicitor when writing their will:**

- *“When I was planning my funeral, my solicitor mentioned this as an option instead of cremation”*
- *“My solicitor told me about it when they suggested that donating my body to medicine might be a cheaper alternative to cremation”*

#### **While having treatment at hospital:**

- *“I heard about it whilst I was staying in hospital after I had had major heart surgery”*
- *“The first time I heard about this [body donation] was when I was in hospital having chemotherapy. Another lady who was there for treatment was telling me of her plans to donate her body”*

#### **Researching what to do with their body after death:**

- *“My GP told me all about it when I asked them for some advice on options following death”*
- *“One of my friends works at an undertaker and said that some people do this [body donation] as an alternative to cremation or burial, so I decided to do some research in to it”*

#### **Other:**

- *“I am already an organ donor and I have always been aware of body donation”*
- *“As a vicar, I have helped to organise memorial services for others who have donated their bodies”*
- *I met a retired doctor as part of a walking group that I joined. He tells me all about his time in medical school – I really like hearing about his anatomy classes”*

### **Development of Table 5 – Reasons for donating**

Examples of the type of answers that formed the categories:

**Help and contribute towards medical education:**

- *"To give students actual bodies to practice on and learn from"*
- *"Medical students always need bodies"*
- *"To help in teaching medical students"*
- *"I have osteoporosis so I thought maybe students could learn what this has done to my body"*
- *"Helping to further human knowledge"*
- *"Having a science degree myself, I am aware of how beneficial my donation could be for students to gain hands on experience"*
- *"Students might as well learn on someone who's dead and can't be hurt"*

**Body is no use after death:**

- *"I don't need it and if it can benefit another person, then I am happy to do this"*
- *"I have no religious beliefs"*
- *"Once you die the body has no relevance"*
- *"Once life is gone, it's gone"*
- *"You're dead, that's it"*
- *"You could put my body in the dirt or use it for someone else's benefit"*
- *"I believe in afterlife as I need to believe I will see my husband again, but I don't think my body is needed for me to enter it"*
- *"Once you have passed away to the other side your spirit goes to God and your body is of no use"*

**Avoidance of burial/cremation as these pollute the environment:**

- *"A waste of digging a hole or burning it"*
- *"I do not want to cause pollution"*
- *"Cremation would not only cause pollution but would also be a waste of a body"*
- *"I care about global warming"*
- *"I like to recycle"*
- *"Burial sites are filling up and I do not wish to add to this problem. No one really visits a grave these days anyway"*
- *"I have always been an organ donor and don't like waste"*

**To achieve something in life:**

- *"To do some good for somebody else"*
- *"Most of us have done nothing with our lives, so maybe we can be useful once we are dead"*
- *"I like to think it would mean I am leaving some sort of legacy behind"*

**Lack of relative to care for their body after death:**

- *"I have no family to deal with my body"*
- *"I have no children to leave anything to and do not want to burden my friends"*

**To further medical research:**

- *"My son died of cancer, and I have had cancer twice. Perhaps my donation can help to prevent others having to go through the same by helping medical research"*
- *"Hopefully it would remove as much guesswork from the pipeline as possible by allowing research to be conducted on my body"*

**As a result of a family member dying unexpectedly:**

- *"My husband died suddenly and I suddenly thought about my children having to deal with my body after I die"*
- *"My husband died of cancer at a young age. It made me question what I had achieved in own life"*

**To relieve family of the financial burden of a funeral:**

- *"It saves my children having to pay out money once I am dead"*
- *"It will protect family from funeral costs"*

**The individual had a personal link to science or medicine:**

- *“My great grandfather was a pharmacist during Victorian times and as I am not clever enough to have studied medicine, I thought this would be a good way that I could also have a link to medicine”*
- *“My grandfather, uncle and cousin were doctors in Leeds and really enjoyed dissection at medical school”*
- *“I have studied for a science degree and know how important hands-on experience can be”*

**Belief that their organs would no longer be of any use for transplant due to their age:**

- *“I have always been an organ donor, but I am probably too old for my organs to be useful now”*

**To show gratitude to the NHS:**

- *“My family have benefitted a lot from the NHS and I think this would be a good way to say thank you”*
- *“As a small way of saying thanks for the treatment I received when I was in hospital”*

**To complete the wishes of a loved one who was unable to donate when they passed away:**

- *“My wife had wanted to donate herself, however, for some reason when she died the university wouldn’t accept her body. It would mean a lot for me to be able to carry out her final wishes on her behalf”*

**After attending the memorial service at the University of Leeds and seeing how their family member had contributed to medical education:**

- *“I enjoyed interacting with medical students and seeing how grateful they were for the donations they had received”*

**Development of Table 6 – How donors hope their donation will help**

Examples of the type of answers that formed the categories:

**To help learning:**

- *“Students will be able to learn more about bodies”*
- *“It will help with learning”*
- *“It might help with the learning process in medicine”*
- *“If they learn, then that’s good”*
- *“A teaching tool”*
- *“I hope to help the new generations of doctors”*
- *“Everyone’s got to learn, haven’t they? You can talk until you’re blue in the face, but it is much better to be able to show the students these things”*

**To enhance knowledge of certain medical conditions:**

- *“Increasing knowledge in medical conditions”*
- *“My pancreas might be of interest with regards to diabetic research”*
- *“Seeing how cancer may have affected my body as I am not having treatment”*
- *“There might be things in my body that will be discovered”*
- *“It might enlighten students about the effects of arthritis and how this can be helped”*
- *“I was born without ovaries, and I am unsure why, maybe the students would learn this when dissecting my body”*

**To provide a hands-on experience for students:**

- *“Students will be able to actually see the body”*
- *“Students need bodies for hands-on experience”*
- *“You can’t learn about the body just from textbooks, I want to give students hands-on experience too”*

- *"It's best to see things and touch them to learn what it is like in real life and what things look like if they go wrong"*

**To provide the opportunity for trainee doctors to carry out medical procedures:**

- *"They need to learn how to do whatever on bodies"*
- *"Got to learn dissection"*
- *"Practicing new surgery techniques"*
- *"Practicing procedures"*
- *"Anything they [students] can do to practice what they have to do, will be helpful"*

**To help students learn how the body works:**

- *"Learn how they [bodies] operate"*
- *"It's not all academic, people have to learn practical things"*
- *"Learning how the body is put together"*

**Unsure how donation may help:**

- *"No idea!"*
- *"I just expect it will"*
- *"I am unsure, but my doctor told me that students need bodies to practice on"*

**To help students learn how to look after people:**

- *"Learn about the body and how to look after people"*

## Appendix 23 Presentation given to medical students during Phase 3

 UNIVERSITY OF LEEDS

# BODY DONORS AND DONATION



MISS FAYEBENNETT  
ANATOMY TEACHING FELLOW AND PHD STUDENT

1

### WHO AM I AND WHAT DO I DO?



I am an Anatomy Teaching Fellow & part-time PhD student

I teach in practical anatomy classes and deliver lectures and tutorials to medical students

My PhD is about medical students and body donors

2

### WHAT IS THE PURPOSE OF THIS TALK?

A brief history of Leeds medical school

The changing source of bodies for teaching anatomy

What is body donation and what laws surround this act?

How does someone donate their body?

What happens when a person donates their body to the University of Leeds?

What type of people donate their body?

3

### UNIVERSITY OF LEEDS ANATOMY - PAST AND PRESENT

1895



4

UNIVERSITY OF LEEDS ANATOMY - PAST AND PRESENT

2018



5

THE HISTORY OF ANATOMY - 19TH CENTURY



6

TREATMENT OF CADAVERS IN THE 19TH CENTURY



7

TREATMENT OF CADAVERS IN THE 19TH CENTURY



8

## BODIES FOR DISSECTION

1. Prisoners who had been hung for their crimes
2. Unclaimed bodies
3. Bodies stolen from graves

9

## MORT SAFE



10

## MORT SAFE



11

## MAKING A PROFIT



12

## WHAT HAPPENED TO CHANGE THE TREATMENT OF CADAVERS?

13

### ANATOMY ACT 1832

Burke and Hare;  
1827-1828 - Murdering innocents

This led to the implementation of the  
Anatomy Act 1832

Meant that the only legal sources of cadavers  
for teaching anatomy were prisoners  
sentenced to death **and** unclaimed bodies

Anatomy Act 1984  
Human Tissue Act (2004)

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### THE HUMAN TISSUE ACT

Licensing body governing practice of;

- Organ donation
- Post-mortem examination
- Tissue used in research
- Public display of a body or material from a deceased person
- Tissue used in treatment
- **Anatomical examination**

15



### THE HUMAN TISSUE ACT

The following acts are illegal;

- Removing, storing or using human tissue without consent
- DNA "theft" – taking and testing DNA without consent
- Organ trafficking
- Storing tissue or organs for a purpose not stated

**Penalties for breaking these laws include imprisonment**

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## WHAT IS EMBALMING?

This happens on Level 3 in Worsley building and donors (up to 70) are kept here

Low levels of chemicals are used in embalming

Embalming will preserve body tissue

Different techniques are used for each type of embalming

- Tissues preserve differently depending on the embalming method chosen



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## FORMALDEHYDE EMBALMING

Takes 2 – 3 days to complete

Catheter inserted in the carotid artery (in the neck) and preserving fluid flows through the persons arteries

After this, there is a timeframe of approximately 2 months until the donor will be used in anatomy practical classes

Formaldehyde can preserve specimens for many years

Donors embalmed in this way are used for teaching

- The tissue is strong and inflexible

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## THIEL EMBALMING

2 stages:

1. Fluid enters the arteries through the carotid artery or femoral artery (in the thigh)
2. The whole body is submerged in a tank of embalming fluid for approximately 3 months

Thiel is a relatively new embalming technique

Donors embalmed in this way are used for surgical courses

- The tissue is lifelike and very soft, mimicking real life situations
- Fragile structures (i.e. arteries and nerves) are very likely to be damaged



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## FORMALDEHYDE VERSUS THIEL

FORMALDEHYDE



THIEL



25

## THE MEMORIAL SERVICE



27

## WHAT HAPPENS TO A CADAVER EVENTUALLY?

Depends on consent given at time of donation:

- No body parts can be kept for more than 3 years
- Parts of the body may be kept for more than 3 years
- Entire body and parts can be kept for as long as they are needed

Donors will ultimately be cremated at Scholemore crematorium

Ashes are returned to family if this wish has been indicated on the consent form

If the donor indicates their ashes will not be returned to family, then they are scattered in the garden of remembrance



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## TREATMENT OF DONORS WORLDWIDE

28

## TZU CHI MEDICAL COLLEGE - TAIWAN



29

## INDIANA UNIVERSITY



30

## WHAT ABOUT THE UK?



31

## DONOR FAMILY'S

4 married couples donating together

Most donors had a relatively big family

- A lot of them spoke of grandchildren
- Most knew of another family member who had donated their body

5 donors had no family at all

Many reported having pets such as dogs and cats to keep them company



32

## OCCUPATION

**Tradesman**      **Unemployed**      **Office work**  
 Hospitality      Postman      Vet      Engineer  
**Teacher**  
 Vicar      Factory work  
**Healthcare work**      Carer for loved one      **Shop assistant**

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## REASONS FOR DONATING

To help and contribute towards medical education

- Hands on experience
- To see the anatomy in real life

To achieve something in life

No relatives to care for their body after death

A personal link to science or medicine

To fulfill the wishes of a loved one who was unable to donate their own body

Attendance at the memorial service

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## MESSAGES FROM BODY DONORS

" Make sure you do  
 To be a good doctor to the  
 patient, not only have you got to  
 be a good doctor, but you've got to  
 be a good person. I would like to  
 see more doctors who are  
 compassionate and who  
 want to be there for the patient  
 to you "

35

### Donor quotes from slide 35:

*"Make sure you do something decent with it. Take it seriously, these things aren't done ad hoc, they're because people want to make it of benefit to you"*

*"Treat it with a bit of respect. It's just a shell of my body, but even so"*

*"To be a good doctor to the patient, not only have you got to be technically aware, but show compassion and understanding of the individual"*

*"Just always remember when you see a patient, look at the patient, see more than the illness"*

## FURTHER INFORMATION

Body donors were willing for students to have full access to relevant medical history

Nearly all donors in this study thought medical students should have the opportunity to meet donors

All donors have the full support of their families

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## WANT TO GET INVOLVED WITH MY RESEARCH?

- Come along to an interview (approx. 30 mins)
- The interviews will take place in Worsley building at a time convenient to you
- You will be asked for your views and opinions about this presentation
- Indicate your interest in being involved in interview on the form you have been given to sign and hand back at the end of this talk – include your University of Leeds email address

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