The University Of Sheffield.

Adolescent Sleep: Exploring Experiences of, and Acceptability of, Whole School Early Intervention

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Declaration Page

I, the author, declare that this thesis is my own work. It is submitted for the Doctorate in Clinical Psychology at the University of Sheffield and has not been submitted to any other University or for any other award.

Structure and Word Counts

Abstracts

Lay Summary: 481

Literature Review: 245

Empirical Study: 246

Literature Review

Main Body Excluding References and Tables: 7992

Including References and Tables: 14,138

Empirical Study

Main Body Excluding References and Tables: 7999

Including References and Tables: 12,468

Total

Excluding References and Tables: 15,991

Including References and Tables: 26,606

Lay Summary

This summary is aimed towards adolescents. It has a Flesch-Kincaid score of 64.9. This means it is readable from ages 12 and upwards.

Research has shown sleep problems impact adolescents across the world. Because sleep problems are common, we need to understand how to help adolescents with sleep. The first aim of this thesis was to understand adolescent sleep experiences. The second aim was to look at the acceptability of a school sleep program given by healthcare staff. This is part of the UK governments aim to improve adolescent health and wellbeing.

The first chapter is a review of adolescent sleep experiences. This included 22 studies looking at views of sleep and what adolescents wanted help with. The review used 'thematic synthesis', a process which looks for themes across different people's opinions. Six main themes were found. How important adolescents view sleep was mixed; some said sleep was important, others said it wasn't important. Adolescents also talked about things that helped their sleep and things that made it worse. Because the studies were mostly good quality, the review findings are more likely to be helpful. The review suggests adolescents should be helped to relax their body and manage their thinking at night to help their sleep. It also suggests adults should value sleep more and set a good example of healthy sleep to adolescents.

The second chapter looked at how helpful a school-based sleep program is for adolescents. This program was put together by Educational Mental Health Practitioners (EMHPs). Their job is to work with schools to help with young people's health and wellbeing. The study went to five schools where adolescents took part in a sleep program run by the practitioners. These adolescents filled out a survey which asked questions about their sleep and wellbeing, and program feedback. In the survey, two thirds of adolescents said they had some trouble with sleep. They also said the program

improved their understanding and made them want to improve their sleep. Some of the adolescents surveyed then took part in an interview to ask them more about the program. They said the program was good because it was interactive and because they could trust the EMHP. Overall, the EMHP sleep program was acceptable to adolescents, and they said it should be continued.

Together these chapters give an overview of adolescent sleep experiences and how they feel about early intervention. Both chapters show many adolescents experience poor sleep. They also show how important adults are in helping them with sleep. Parents and professionals need to talk to adolescents more actively about sleep and offer support. School sleep programs appear to be helpful in doing this and are something adolescents find acceptable. More studies are now needed to understand if the program has longer-term effects as well. They are also needed to understand if adolescents who are older or from different backgrounds also find it helpful.

Acknowledgements

I would firstly like to thank every participant who gave their time to this project. You are all the reason I came into this profession in the first place; young people deserve to be heard and supported, and I hope this project goes some way towards this. A special thank you must also go out to Elizabeth Mukherjee. Elizabeth, your immediate yes to being involved in the project at a time when it had barely begun, through a tumultuous year of ethical approvals, and doing data entry in a Premier Inn at 10pm (!), is a true testament to the passion you have for our young people. You are the definition of a role model, and I feel privileged to have worked with you.

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Section One: Literature Review

Exploring adolescent attitudes towards sleep and their perspective of the facilitators and barriers to obtaining good quality sleep: A qualitative evidence synthesis

Abstract

Objectives: Current literature has identified sleep as a pervasive issue during adolescence, with implications for functioning and mental health. This review aimed to synthesise qualitative evidence to understand and reflect on adolescent sleep attitudes and their perceptions of the barriers and facilitators to obtaining good quality sleep.

Methods: A systematic review and three-step thematic synthesis was conducted. Four electronic databases (Scopus, PsycINFO, CINAHL, Web of Science) and three grey literature databases (opengrey.eu, proquest.com, ethos.bl.uk) were searched with full texts screened according to pre-existing criteria developed using the SPIDER strategy tool. Research rigour was assessed using the Critical Appraisal Skills Program review checklist.

Results: Twenty-two studies were included, encompassing 793 adolescent participants from across six countries. Six analytical themes were developed: 1) The Day is Only as Good as the Night Before; Sleep is Valued, 2) The Day is More Important Than the Night; Sleep is Devalued, 3) Sleep Promotors, 4) Scaffolded to Change, 5) Sleep Disruptors, and 6) Overlooked and Out of Control; I Can't Change.

Conclusion: Threat to rigour was predominantly low across studies, thus, based on review findings a multipronged approach to supporting adolescent sleep is recommended. Direct interventions should seek to target arousal and rumination at night, and beliefs around lack of perceived control and social expectations. Adolescents reflected despite an awareness of sleep proponents and disruptors, wider cultural and systemic attitudes and demands inhibit behaviour change. Thus, targeting sleep attitudes and beliefs within wider systems is necessary to support adolescents.

Practitioner Points

- This review is the first to capture the broad experience of adolescent sleep from across 22 studies, representing 793 adolescents.
- Evidence suggests adolescents require support to manage increased arousal and rumination at night alongside increasing their sense of control over sleep behaviours. These were evidenced to be the most disruptive individual factors, with recommendations healthcare professionals assess the impact of these with young people seeking sleep support.
- There is also support for providing intervention to wider systems; adolescents increasingly value peer norms, thus healthcare professionals should seek to provide accessible group sleep programs targeting negative social norms and beliefs. Furthermore, healthcare, and educational professionals need to engage in a more proactive approach to educating adolescents on sleep and embedding this more consistently across school and healthcare systems.
- Whilst studies posed a low threat to rigour, there needs to be greater exploration into the impact of cultural and sociodemographic factors on sleep experiences, and researcher-participant relationships need to more explicitly reported.

Key words:

Adolescent; Sleep; Experiences; Attitudes; Behaviour Change; Thematic Synthesis.

Introduction

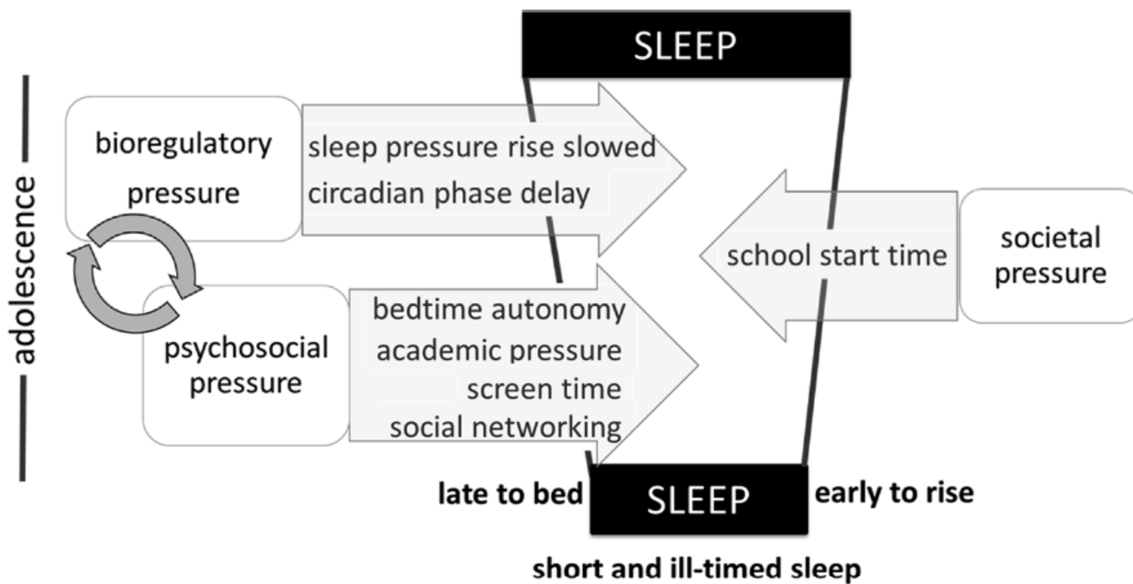
Sleep is a complex behavioural and physiological process required for adequate physical and psychological development and functioning (Zielinski et al., 2016). Sleep is regulated via two biological systems; homeostasis drives the propensity to sleep, whilst circadian processes determine the internal rhythm of sleep and alertness (Borbely & Achermann, 1999). These biological systems significantly adjust during adolescent development, with emerging evidence defining this as between ages 10-24 due to shifting psychosocial norms interacting with biological changes (Sawyer et al., 2018). These adjustments lead to adolescents experiencing lengthier wakefulness and a delay in sleep-onset, although still requiring nine hours of sleep for satisfactory cognitive functioning and emotional regulation (Short et al., 2018).

Insufficient Sleep in Adolescents

Despite the biological understanding of adolescent sleep needs, research has identified sleep problems affect up to 45% of adolescents globally, with 11% meeting the diagnostic criteria for insomnia (Dohnt et al., 2012). The perfect storm model (Figure 1, Carskadon, 2011; Crowley et al., 2018) attributes this phenomenon to the convergence of shifting biopsychosocial factors, such as a reduction in parental control over bedtimes (Short et al., 2011), and an increase in academic, social, and technological demands (Bartel et al., 2015; Maume, 2013). These changes are evidenced to have a deleterious impact on sleep attainment and efficiency, interacting with bioregulatory changes to further propagate and reinforce late sleep onset (Carskadon, 2011; Crowley et al., 2018).

Figure 1.

The 'Perfect Storm' Model as Presented in Crowley et al. (2018)



Note. The Perfect Storm model illustrates the convergence of biological, psychosocial, and societal changes occurring in adolescence contributing to shifts in sleep behaviour. Biological changes elongate wakefulness in the evening leading to later sleep-onset. Psychosocial and societal pressures increase engagement in stimulating activity at night and earlier wake times, leading to short and ill-timed sleep.

Further to a primary difficulty with sleep, the literature identifies recurring sleep difficulties are a transdiagnostic process to a myriad of adolescent mental health issues (Blake et al., 2017). Research has established delayed sleep-onset and night-time wakefulness are consistent indicators of, and more often precede, internalising problems and reductions in wellbeing (Coloume et al., 2011; McMakin & Alfano 2015). Lovato and Gradisar (2014) proposed a conceptual model to explain this directionality, concluding the biopsychosocial changes explored in Carskadon's (2011) model reinforce ruminative thinking styles over time. A recent longitudinal cohort study (*n* = 5033) supports this, finding anxiety and depressive symptoms at 21 were significantly

predicted by sleep onset latency, night-time wakefulness, and daytime sleepiness, at age 15 (Orchard et al., 2020).

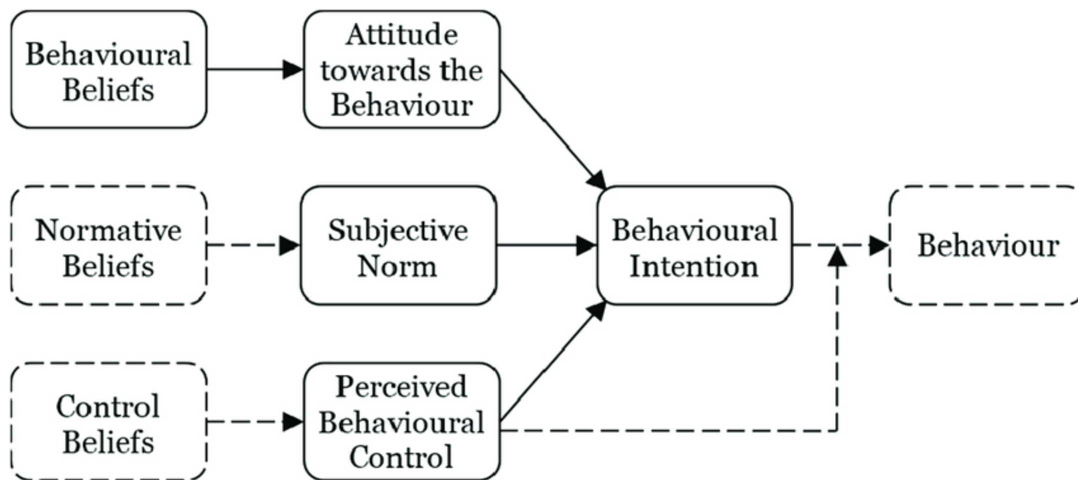
Improving Adolescent Sleep

Relative to increasing mental health difficulties in adolescence, interventions targeting transdiagnostic processes, such as problematic sleep, have a potentially vital role in their prevention (Orchard et al., 2020). However, intervention guidelines specifically tailored to adolescents are lacking, with evaluations of low-intensity behavioural and cognitive sleep interventions only recently emerging (Griggs et al., 2020). Reviews of these programs however have found thus far, they have had limited success in improving adolescent sleep through supporting behaviour change; often they have only served to enhance sleep knowledge (Blunden & Rigney, 2015; Gruber et al., 2017).

Despite attempts to improve the evidence-base, often omitted is an understanding from adolescents of the determinants of their sleep behaviour (Gruber, 2017). According to the Theory of Planned Behaviour (ToPB, Figure 2), volitional behaviour depends on behavioural intention, which is influenced by attitudes (beliefs concerning personal consequences of behaviour), subjective norms (the influence of specific groups relative to the behaviour), and perceived behavioral control (the ease/difficulty in performing the behaviour) (Ajzen, 1991).

Figure 2

The Theory of Planned Behaviour (Ajzen, 1991)



Relative to sleep, the ToPB seeks to explain how engaging in healthy sleep practises in adolescence is dependent on the young person's intention to engage in these practises. This intention is predicted by beliefs they hold about sleep (subjective attitudes), sleep practises and beliefs modelled by caregivers, peers, and the wider culture in which they exist (subjective norms), and their perceived ability, and facilitators and barriers to controlling sleep behaviours (perceived behavioural control). In young adults, the ToPB has already been identified to be an effective predictive tool of good quality sleep (Mead & Irish, 2019). Thus, exploring adolescent attitudes, norms, and perceived control, could contribute to an improved understanding of the psychosocial and societal contributors to poor sleep practises (Crowley et al., 2018).

Despite the ToPB (Ajzen, 1991) promoting the need to explore adolescent experiences and attitudes, a recent review identified as much as 98% of the research into the phenomenon of sleep has utilised a positivist, quantitative approach (Bjørnnes et al., 2021). This suggests researchers believe they have enough understanding of the adolescent experience to utilise a deductive approach (Coyne et al., 2016) despite recent literature identifying a devaluation of adolescent views has contributed to the lack of effective sleep health programs (Bjørnnes et al., 2021; Illingworth et al., 2020).

Studies emphasising the importance of the adolescent voice in understanding their experience has existed for years; when adolescent voices are listened to and acted upon, adolescents are far more invested in the resulting outcome (Lind, 2003). Thus, more qualitative studies are required to effectively explore adolescent experiences and capture the modern-day challenges they are facing (MacKenzie et al., 2022), to ensure future interventions and healthcare policies are relevant and successful (Blake et al., 2017; Gruber, 2017).

Aim and Review Questions

Whilst qualitative studies of adolescent sleep have been emerging, much of the research and subsequent reviews have focused on the relationship with social media and technology due to its noted impact on wellbeing and sleep (Kokka et al., 2021; MacKenzie et al., 2022). As far as the lead author can conclude, there are no qualitative evidence syntheses collating and evaluating adolescents' broader attitudes and perspectives of sleep. Therefore, this review aims to explore adolescent attitudes towards sleep, and their perceptions of the barriers and facilitators to obtaining good quality sleep and/or changing sleep behaviours. This review will also seek to evaluate the quality of the current evidence to reflect on clinical implications and develop recommendations for adolescent sleep interventions.

Method

The Enhancing Transparency in Reporting the Synthesis of Qualitative Research (ENTREQ) checklist (Tong et al., 2012, Appendix A) guided the development of the review protocol and the subsequent synthesis. The synthesis started after the protocol was registered on PROSPERO in December 2022 (CRD42022383634, Appendix B).

Search Strategy

Four electronic databases (Scopus, PsycINFO, CINAHL, Web of Science) and three grey literature databases (opengrey.eu, proquest.com, ethos.bl.uk) were

searched from inception to January 2023. Grey literature was included to capture emerging evidence and reduce publication bias, as presently research is more likely to be selectively published based on producing positive results (Mahood et al., 2014).

Search terms were developed using the "SPIDER" framework (Sample, Phenomenon of Interest, Design, Evaluation, Research type), designed specifically for the identification of qualitative and mixed-methods research (Cooke et al., 2012). Search terms are presented in Table 1. Boolean operators of 'and' and 'or' were utilised to identify studies including any of these terms within the title and/or abstract, with the search string constructed according to the database. This was to achieve the highest specificity possible whilst ensuring the search was comprehensive, as the retrieval of qualitative research faces challenges of poor indexing and being overshadowed by the prevalence of quantitative studies (Booth, 2016).

Table 1

Database Search Terms

SPIDER Criteria	Search Term with Boolean Operator
Sample	Adolescen* ***OR*** Teen* ***OR*** Child* ***OR*** Youth* ***OR*** Juvenile ***OR*** "Young Adult"
AND	
Phenomenon of Interest	Sleep* ***OR*** "Insomnia*" ***OR*** "Sleep Interven*" ***OR*** "Sleep Workshop" ***OR*** "Sleep Health Promot*" ***OR*** "Sleep Behavio*"
AND	
Research Type and Design	Qualitat* ***OR*** Mixed-Method* ***OR*** "Mixed Method*" ***OR*** Interview* ***OR*** "Focus Group*"
AND	
Evaluation	Attitude* ***OR*** Phenomenon* ***OR*** Feeling* ***OR*** Experience* ***OR*** Perspective* ***OR*** Percept* ***OR*** Perceiv* ***OR*** Narrative* ***OR***

	"Lived Experience" ***OR*** Subjectiv* ***OR*** View* ***OR*** Belief ***OR*** Insight ***OR*** Facilitat* ***OR*** Barrier*

Note. Boolean operators are in **bold** and *italic* font.

The author also conducted a manual review of the references and citations of included studies. They did this by reviewing titles of the references to identify potentially relevant papers; if any were identified the full paper was sought for review. The author also found included studies on the electronic databases utilised and reviewed the titles and abstracts of studies citing them, if any appeared relevant full papers were accessed. Lastly, the author contacted authors identified to have contributed to several studies in adolescent sleep.

Study Eligibility

Pre-registered eligibility criteria stated in the review protocol (Appendix B) were followed during the search and selection process, with inclusion and exclusion criteria (Table 2) developed from the SPIDER framework (Cooke et al., 2012). Further to the criteria in Table 2, studies included had to be published from January 1999 onwards to account for accessibility to mobile internet and its evidenced impact on sleep (Kokka et al., 2021), and they must have been originally published in the English language to ensure phrasing and meaning was not lost through translation.

Table 2

SPIDER (Cooke et al., 2012) Study Criteria Developed from the Review Question

	Inclusion Criteria	**Exclusion Criteria**
Sample	Adolescents (10-24 years old; studies with >80% of participants within this age bracket will be	Children/Adults (<10 or >24 years old).

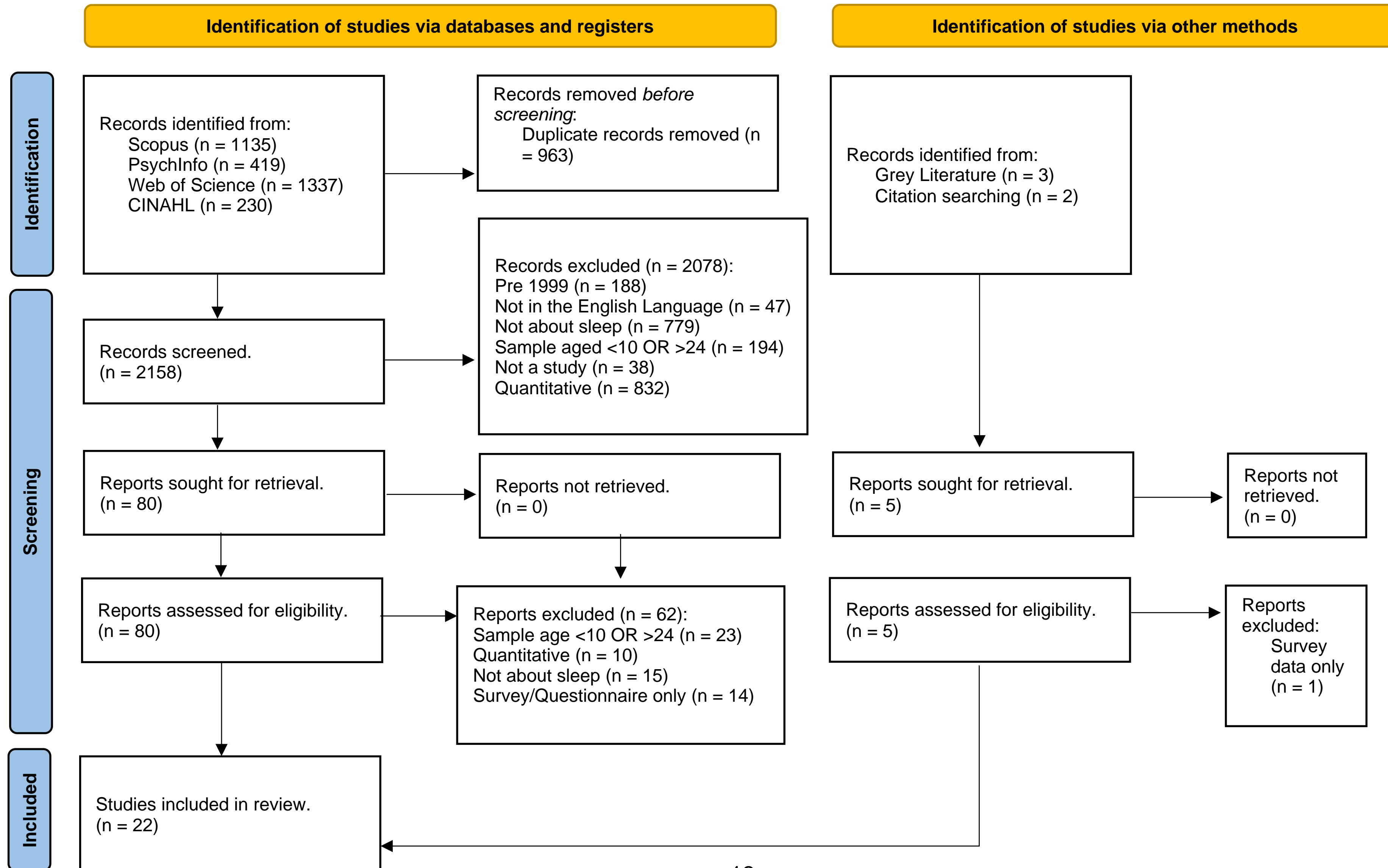
	eligible for inclusion). With or without sleep difficulties and/or comorbidities.	
Phenomenon of Interest	Sleep; Facilitators and Barriers to Sleep; Sleep Behaviour Change.	Studies not exploring sleep/ Studies exploring only one specific factor on sleep e.g., technology, diabetes.
Design	Interviews; Focus Groups; Observational Studies. Must include first-person quotes.	Survey, questionnaire, or diary entries only. Studies which do not include participant quotes.
Evaluation	Experiences; Perspectives; Attitudes.	No focus on participant experience.
Research Type	Qualitative or Mixed-Methods approach (qualitative component extracted). Peer reviewed and grey literature studies. Full text only.	Quantitative only. Opinion pieces, Systematic reviews, Editorials, Comments, Book chapters, and Letters. Abstract only.

Study Selection

A total of 3124 publications were identified through the electronic database and grey literature search (3121 and three respectively). Publications identified through the electronic database were first exported to EndNote20 (Clarivate Analytics, 2013) with the duplicate detection function removing 963 papers. The remaining 2158 titles and abstracts were evaluated against prespecified criteria (Table 2). The 80 publications meeting criteria were accessed as full texts for further screening, alongside the three grey literature reports identified which were exported to EndNote20 (Clarivate Analytics, 2013). This resulted in 20 publications meeting review criteria, of which a further two were sourced and included via reference and citation review (none were identified through author contact). The selection and review processes were completed by the author and recorded in a PRISMA flow diagram (Figure 3, Page et al., 2021).

Figure 3

PRISMA Flow Diagram (Page et al., 2021)



Data Extraction

Using Cochrane Collaboration guidance (Noyes & Lewin, 2011) a data extraction form was developed (Appendix C) to extract study characteristics, participant demographics, study design and methodology, and qualitative findings (specifically participant quotes).

Data Synthesis

Using a thematic synthesis framework (Thomas & Harden, 2008), a three-step procedure was adopted, with the author conducting all steps. For step 1, using NVivo 12 Software (Jackson & Bazeley, 2019), participant quotes contained anywhere from the abstract to discussion within each study were line-by-line coded. Each line was summarised in a few descriptive words without relating it to other lines or the research question, however if a subsequent line aligned with a pre-existing code it was placed within it. Once completed, each code was re-examined to check the consistency of the interpretation relative to the text that was coded, and axial coding was conducted to capture study context (Thomas & Harden, 2008).

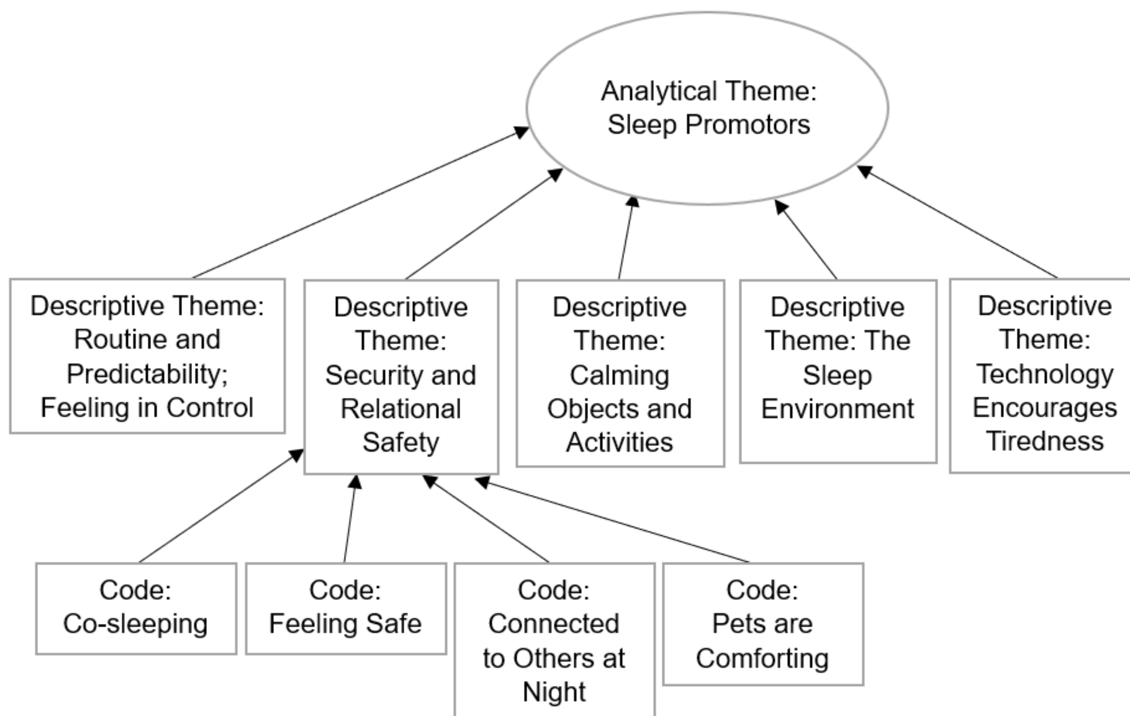
The author chose to only code direct participant quotes, as adolescent needs have often been identified through the lens of adult views (Coyne et al., 2016), and this review aims to explore adolescent experiences and attitudes. Whilst participant quotes are not truly independent of the original researcher's interpretation, it is important to separate (albeit imperfectly) the adolescent voice and researcher perspective (Coyne et al., 2016; Sandelowski & Barroso, 2002).

Descriptive themes were then developed in step 2 whereby codes were compared relative to similarities and differences and grouped into a hierarchical tree structure (Thomas & Harden, 2008). Descriptive themes were then reviewed and the author 'went beyond' their content in step 3, to interpret analytical themes relative to the review question (Thomas & Harden, 2008). A minimum number of quotes required to develop a descriptive or analytical theme was not set to ensure inclusivity of unique

adolescent experiences. This 3-step systematic process has been illustrated in Figure 4.

Figure 4

An Example of the Thematic Synthesis Process



Reflexivity

This review was developed from a social constructionist position, positing sleep and its value are influenced and shaped by historical and cultural contexts. Relative to sleep in the UK, reviews highlight the influence a culture of productivity has on sleeps value in adulthood, with sleep often neglected and sacrificed for work and social needs (Boden et al., 2008). The author acknowledges their beliefs are influenced by this view, identifying sleep as a valued activity in the context of its contribution to productivity, and personal experience of sacrificing sleep to develop a work-life balance. To manage the influence of these views, the author produced a reflexive statement (Appendix D) and maintained a reflective log relative to their own subjectivity and preconceptions during the review design and synthesis (Appendix E).

In adopting this epistemology, data synthesis utilised an inductive approach, as the author sought to allow meaning and themes emerge from the data organically befitting the reviews aim to explore adolescent experience. Whilst a synthesis arguably undermines the integrity of the individual studies and challenges the authors philosophical position, qualitative research will continue to be underutilised in clinical practice if there is a lack of integration of knowledge within specific areas.

Quality Assessment

Included studies were quality appraised using Long et al.'s (2020) modified version of the Critical Appraisal Skills Programme (CASP, 2018, Appendix F). Alongside evaluating a study's design (e.g., recruitment strategy, ethical issues, rigour of analysis) relative to the overall validity and reliability of the research, this version additionally evaluates a study's theoretical underpinning. This is in line with recent guidance recommending appraisals evaluate the coherence and congruence of epistemology and ontology (Levitt et al., 2018; Research Excellence Framework, 2018).

The modified CASP tool (Long et al., 2020) has 11 questions to which appraisers must answer yes, somewhat, can't tell, or no, relative to whether a study has adhered to each point. Using supervision from an experienced qualitative researcher, and reflecting on the current evidence-base, a classification system was applied as to whether a study was rated as a high (<7/11 questions answered yes), medium (7-8/11 questions answered yes), or low threat (9/11 questions answered yes) to rigour. Although this system was used to enable comparison with other appraisals in health promotion research, the areas in which biases existed were directly reported on as the literature indicates scoring systems alone can be misleading as to research quality (Garside, 2014).

All studies were appraised by the author, with five selected at random by a research peer to independently appraise to enhance reliability. Disagreements were discussed

until consensus was reached, with the author re-reviewing appraisal of all studies based on this consensus. Studies were not excluded based on quality as this review will reflect on this when providing clinical recommendations.

Relative to the review, the author utilised the GRADE-CERQual framework (Lewin et al., 2018) to assess confidence in the cumulative findings of interest to the phenomenon. This was used to assess four domains: methodological limitation, relevance, adequacy of the data, and coherence.

Results

Study Characteristics

Study characteristics extracted included: authors, year, country, sample demographics, data collection and analysis, and research question and context (Table 3). Eighteen studies were identified through electronic databases, two via reference and citation searching (Levenson et al., 2021; Maier et al., 2023), and two via grey literature (Pavlopoulou, 2020; Tougas, 2021).

Setting and Context

Studies were conducted in westernised countries, across the USA (*n* = 9), UK (*n* = 6), Sweden (*n* = 3), Canada (*n* = 2), Belgium (*n* = 1), and Australia (*n* = 1). The majority were conducted from 2017 onwards, with only three reporting on adolescent sleep between 2006-2013, reflecting the recent increased interest in understanding this phenomenon (MacKenzie et al., 2022).

Whilst all studies aimed to understand adolescent sleep experiences, many differentiated their exploration by focusing on a specific group. Studies varied in their inclusion criteria around mental health (Conroy et al., 2017; Waite et al., 2018), neurodiversity (Pavlopoulou, 2020), school exclusion (Bainton & Hayes, 2022), socioeconomic status (Gaarde et al., 2020; Gruber et al., 2017), cultural identity (Orzech, 2013; Palimeru et al., 2020), and academic experience (Barone, 2017; Foulkes

et al., 2019). Two studies included views of caregivers and professionals (Levenson et al., 2021; Tougas, 2021), however these were not utilised in the synthesis.

Participants

Seven hundred and ninety-three participants partook across the 22 studies, with sample sizes ranging from 8–142. Participants were primarily recruited from educational establishments (schools, *n* = 10; universities, *n* = 2; pupil referral unit, *n* = 1), with the remaining studies varying their recruitment across clinical settings (*n* = 3), online (*n* = 3), and community groups/services (*n* = 2); one study did not declare recruitment methods (Moran-Ellis & Venn, 2007).

Participant ages ranged from 10-24 years of age, with two studies including 25-year-olds (Levenson et al., 2021; Paterson et al., 2019); both met the threshold of >80% of the sample being 10-24 years of age. Of the 19 studies reporting gender, 305 identified as female, 251 as male, and two as gender fluid; gender of the remaining 235 participants is unknown. Only 10 studies reported on ethnicity, with the majority identifying as White (*n* = 114), followed by Hispanic (*n* = 38), Asian (*n* = 25), American Indian (*n* = 24) Black (*n* = 20), Other (*n* = 16), African American (*n* = 3), and Mixed Race (*n* = 2), leaving 551 participants ethnicity/culture unknown.

Data Collection and Analysis

Interviews and focus groups were the two methods of data collection with participants recruited primarily via convenience and voluntary response sampling (*n* = 15), with others purposively sampled (*n* = 5) or recruited via snowball sampling (*n* = 1). To analyse the data, 13 studies opted for thematic analysis, five adopted content analysis, two grounded theory, one a phenomenological hermeneutic method, and one stated use of a multistage qualitative analysis approach.

Table 3

Characteristics of Included Studies

Study (Year)	Country	Sample	Data Collection	Design and Analytical Method	Research Question and Context
Bainton & Hayes (2022)	UK	*n* = 9, 11-15 years of age, 1 Female	Convenience sampling from a pupil referral unit, semi-structured interviews	Mixed-methods, Thematic Analysis	Understanding perspectives and experiences of sleep in adolescents excluded from mainstream education to inform how others can support adolescent sleep.
Barone (2017)	USA	*n* = 19, 19-24 years of age (M = 21), 9 Females, 84% White	Snowball and then quota sampling from large university, open ended interviews	Qualitative, Content Analysis	Exploring beliefs and perceptions of working university students about managing sleep alongside academia and work using a health capital framework. Anyone with diagnosed sleep disorder excluded.
Conroy et al. (2017)	USA	*n* = 14, 14-19 years of age, (M = 17, SD ± 1.7), 10 Females, 57% White, 22% African American, 7% Asian, 14% mixed race.	Convenience sampling from clinics, Focus Groups	Mixed-methods, Grounded Theory	Understanding experience of insomnia and preferences for insomnia intervention to inform treatment programs. Adolescents included had to meet clinical threshold for insomnia and depression.
Foulkes et al. (2019)	UK	*n* = 15, 18-20 years of age, 12 Females, 87% White.	Voluntary response sampling, local university, Semi-structured Interviews	Qualitative, Thematic Analysis	Understanding contributing factors to poor sleep in university students. Students were in their first year and must self-describe as having issues with sleep.
Gaarde et al. (2020)	USA	*n* = 142, 14-19 years of age (M = 15.6, SD ± 1.33)	Convenience sampling, school setting, Semi-	Mixed-methods, Multistage Qualitative Analysis	Exploring urban adolescent views on factors affecting their sleep using a social-ecological framework.

			structured Interviews		
Godsell & White (2019)	UK	*n* = 33, 13-14 years of age, 16 Females.	Purposive (schools) then convenience (participants) sampling, Focus Groups	Qualitative, Thematic Analysis	Exploring adolescent perceptions of sleep and sleep behaviour. Age group chosen based on biological shift in melatonin.
Gruber et al. (2017)	Canada	*n* = 18, Age; M = 14.9 SD ± 1.5 years, 9 Females	Purposive sampling, Schools, Semi-structured Interviews	Qualitative, Thematic Analysis	Seeking to identify determinants of sleep behaviour in adolescents of middle to high socioeconomic status. Any physical or mental health comorbidities excluded.
Hedin et al. (2020)	Sweden	*n* = 45, 16-18 years of age, 28 Females	Voluntary response sampling, Schools, Focus Groups	Qualitative, Content Analysis	To investigate adolescent experiences regarding perceived facilitators and barriers for a good night's sleep.
Jakobsson et al. (2022a)	Sweden	*n* = 16, 14-15 years of age, 6 Females	Voluntary response sampling, Schools, Narrative Interviews	Qualitative, Phenomenological Hermeneutic Method	To illuminate the meanings of adolescents' lived experiences of sleeping difficulties.
Jakobsson et al. (2022b)	Sweden	*n* = 43, 15-16 years of age, 25 Females	Voluntary response sampling, Schools, Focus Groups	Qualitative, Content Analysis	To explore adolescent suggestions on how their sleep could be supported by health interventions.
Levenson et al. (2021)	USA	*n* = 8, 21-25 years of age, 3 Females, 3 White	Convenience sampling, Healthcare Setting, Focus Groups	Qualitative, Thematic Analysis	To understand contributors to good and poor adolescent sleep through exploring stakeholder perspectives of a proposed sleep promotion program.
Maier et al. (2023)	USA	*n* = 25, 14-17 years of age, 16 Females, 15 Hispanic, 10 Black	Voluntary response and snowball sampling, Schools, Focus Groups	Qualitative, Thematic Analysis	To explore adolescents' sleep experiences and perceptions of mind-body interventions to inform the development of a sleep health program.

Morris-Ellis & Venn (2007)	UK	*n* = 20, 13-18 years of age	Focus Groups and Diaries	Qualitative, Grounded Theory	To explore and theorise the meaning and experience of sleep from the perspective of adolescents, and how these constructions arise in the UK context
Orzech (2013)	USA	N = 51, Mean age 14.5 years, 27 Females, 23 Hispanic, 23 White, 5 Other	Voluntary response sampling, Schools, Semi-structured interviews	Mixed-methods, Grounded theory	To identify common sources of sleep information for adolescents and examine cultural influences on sleep, and perceptions of sleep behaviours.
Owens et al. (2006)	USA	*n* = 64, 10-14 years of age	Voluntary response sampling, Schools, Semi-structured interviews	Mixed-methods, Thematic Analysis	To examine the sociodemographic, social environmental, and behavioural context of sleep practice in adolescents
Palimeru et al. (2020)	USA	*n* = 26, 12-16 years of age (M = 14.3), 12 Female, 24 American Indian, 2 Other	Voluntary response sampling, Community setting, Semi-structured interviews	Qualitative, Multistage Qualitative Analysis	To broaden understanding of sleep and its role in health among urban American Indians through exploring their sleep environment and behaviours
Paterson et al. (2019)	Australia	*n* = 57, 16-25 years of age, 33 Females	Voluntary response and snowball sampling, Social media, Focus Group	Qualitative, Thematic Analysis	To determine changes young adults are willing to make to their sleep behaviour, and to identify facilitators and barriers to these changes.
Pavlopoulou (2020)	UK	*n* = 54, 12-17 years of age (M = 14.6, SD = 1.7), 20 Females, 32 Males, 2 Gender Fluid, 36 White, 6 Asian, 7 Black, 5 other ethnicity	Purposive sampling, Social Media/Online, Photo-elicitation Interviews	Mixed-methods, Inductive Thematic Analysis	To explore autistic adolescents sleep-related practices before bedtime and during the day which contribute to a good night’s sleep.

Quante et al. (2019)	USA	*n* = 27, 14-18 years of age (M = 15.7, SD ± 1.4), 12 Females, 18 Asian, 3 Black, 2 White, 4 Other	Purposive sampling, Youth Services, Focus Groups	Mixed-methods, Thematic Analysis	To explore levers for promoting healthy sleep among sleep-deprived vulnerable adolescents
Tougas (2021)	Canada	*n* = 24, 14-18 years of age, 14 Female, 13 White	Voluntary response sampling, Online, Focus Groups	Qualitative, Content Analysis	To inform development of an adolescent eHealth sleep intervention by exploring adolescent opinions about healthy sleep practices and using an eHealth intervention.
Vandendriessche et al. (2022)	Belgium	*n* = 72, 13-16 years of age (M = 14.6, SD ± 1.0), 46 Females	Convenience sampling, Schools, Focus Groups	Mixed-methods, Content Analysis	To examine psychosocial factors related to sleep in adolescents and their willingness to participate in the development of sleep interventions.
Waite et al. (2018)	UK	*n* = 11, 15-22 years of age (M = 18.27, SD ± 1.95), 6 Females	Purposeful sampling, Clinical Setting, Semi-structured Interviews	Qualitative, Thematic Analysis	To gain the perspective of young people at ultra-high risk of psychosis on their sleep problems and associated psychological treatment

Note. M = Mean, SD = Standard Deviation

Study Quality

Inter-rater reliability was 76.36% with items 4 (theoretical underpinnings), 7 (researcher/participant relationship), and 9 (rigour of data analysis) requiring further discussion until a consensus was reached.

Most studies posed a low threat to rigour, performing well across the 11 criteria evaluated by the CASP appraisal tool (Long et al., 2020, Appendix F). However, item 7 was a notable outlier with 14/22 studies not reporting on the researcher and participant relationship. Five studies somewhat considered the relationship, acknowledging researcher bias in the analysis and reporting stages, but they lacked exploration of their position and impact of their preconceptions. Orzech (2013), Palimeru et al. (2020), and Pavlopoulou (2020) were the three exceptions, each exploring their position and attempting to centre adolescent views throughout. For example, Palimeru et al. (2020) collaborated with American Indian elders to support them in leading some of the research, and Pavlopoulou (2020) collaborated with autistic adolescents to shape the research.

Several studies also failed to adhere fully to item 9 (rigour of data analysis), with one study (Moran-Ellis & Venn, 2007) not adhering at all, only acknowledging use of a grounded theory approach, and a further six only somewhat adhering. Critically some of the shortfall was relative to the lack of participant quotes used to support the outcome, leading to a lack of clarity as to how themes were derived. For example, whilst Levenson et al. (2021) included a table of quotes, only 11 were from the young person's perspective.

Overall, 17 studies were rated as a low threat to rigour, typically only falling short on one or two items, whilst three studies posed a moderate threat, and two posed high threat (Table 4). Specifically, Bainton and Hayes (2022) and Moran-Ellis and Venn (2007) were unable to demonstrate multiple criteria, both not meeting recruitment

strategy, data collection, researcher/participant relationship, and data analysis criteria. Positively, two papers (Orzech, 2013; Palimeru et al., 2020) met all CASP criteria; with their research centring on cultural influences, it enabled a clear exploration of the role of the researcher and a more rigorous approach to study design and delivery.

Table 4

Summary of Study Performance on the CASP Quality Appraisal Tool (Long et al., 2020)

	Was there a clear statement of the aims of the research?	Is a qualitative methodology appropriate?	Was the research design appropriate to address the aims of the research?	Are the study' s theoretical underpinnings clear, consistent, and conceptually coherent?	Was the recruitment strategy appropriate to the aims of the research?	Was the data collected in a way that addressed the research issue?	Has the relationship between researcher and participants been adequately considered?	Have ethical issues been taken into consideration?	Was the data analysis sufficiently rigorous?	Is there a clear statement of findings?	How valuable is the research?	Overall Verdict
Bainton & Hayes (2022)												H
Barone (2017)												L
Conroy et al. (2017)												L
Foulkes et al. (2019)												M
Gaarde et al. (2020)												M
Godsell & White (2019)												L
Gruber et al. (2017)												L
Hedin et al. (2020)												L
Jakobsson et al. (2022a)												L
Jakobsson et al. (2022b)												L
Levenson et al. (2021)												M

Maier et al. (2023)											L
Moran-Ellis & Venn (2007)											H
Orzech (2013)											L
Owens et al. (2006)											L
Palimeru et al. (2020)											L
Paterson et al. (2019)											L
Pavlopoulou (2020)											L
Quante et al. (2019)											L
Tougas (2021)											L
Vandendriessche et al. (2022)											L
Waite et al. (2018)											L

**Note:* H - High threat to rigour, M - Moderate threat to rigour, L - Low threat to rigour. Green shading – criteria was adhered to, yellow shading – criteria was somewhat adhered to, orange shading – criteria was not/could not tell if it was adhered to. Each of the 11 areas explored via the CASP are necessary for systematically evaluating the different parts of a study's design in which biases may exist e.g., certain recruitment strategies may increase sample bias. Biases are important to determine relative to the overall validity and reliability of the research, and thus its applicability to clinical practices.

Thematic Synthesis

Following the thematic synthesis three-step process (Thomas & Harden; 2008), 186 codes were identified and developed into 24 descriptive themes, which were then synthesised into six analytical themes (Table 5). These themes were often interrelated and mutually reinforcing, although views between adolescents varied (Table 5). All themes arising from the thematic synthesis were supported by more than one study (Appendix G). Thus, removing lower quality studies would not have changed the overall synthesis, rather it would have reduced the finer detail relative to understanding

perspectives of UK adolescents (Moran-Ellis & Venn, 2007), and those from a marginalised population (excluded pupils) (Bainton & Hayes, 2022).

Table 5

Summary of Analytical Themes, Descriptive Themes, and Supporting Adolescent Quotes.

Analytical Theme	Descriptive Theme	Quotes
The Day is Only as Good as the Night Before; Sleep is Valued	Good Sleep Improves Health and Functioning	*"If you don't get a good sleep, you're not gonna be able to play good…and [if] you're not playing good, he's not gonna let you play." (Owens et al., 2006).* *"It is kind of a priority, because it's essential, you need sleep to be able to function the next day." (Gruber et al., 2017).*
	Sleep Supports Mood and Mental Health	*"It is important to sleep well, to feel good about yourself." (Vandendriessche et al., 2022).* *"I find it also has helped my anxiety a lot. I'm able to cope with situations a lot better and kind of stay in control, which I think has come from me gaining control of my sleep". (Waite et al., 2018).*
	Learning and Development	*"I don't know, you can stay up until whenever you want. But if you really care about your education and all that, I would go to sleep like around 9:00 or something like that." (Palimeru et al., 2020).* *"If you don't go to bed when you're supposed to, if you come here tired the next day…you get Ds and Fs." (Owens, 2006).*
The Day is More Important Than the Night; Sleep is Devalued	Lack of Sleep and Routine is Normalised	*"All my friends complain about not getting enough sleep." (Orzech, 2013).* *"…I'll watch how teenagers my age fall asleep in class because they were up on the phone all night and I just think, "Oh, that's me, too, some days.". Like, I never see TV shows with adults in them when they fall asleep with that, it's only teenagers" (Barone, 2017).*

	Education, Employment, Extracurricular Activities; They All Come First	*"Because school is so busy and important, you kind of prioritize school over sleeping." (Tougas, 2021).* *"I think that now, with our twenty-four-hour march towards work—it's a global economy so it's gonna—everyone's constantly working, we've got graveyard shifts, we've got third and fourth shifts." (Barone, 2017).*
	Needing to be Accepted, Shifting Social Norms	*"There's peer pressure, like if you went to bed at half seven now you'd probably get teased for it". "I'm like no, I really like him and I can't end the call" (Godsell & White, 2019).* *"I think the ruined sleep is worth like the sort of social thing." (Foulkes et al., 2019)*
Sleep Promotors	Security and Relational Safety at Night	*"When I sleep with my mum I fall asleep in five seconds, I put my head on the pillow, she says good night and then I fall asleep...I have simply slept better with her" (Jakobsson et al., 2022a).* *"When Mum and Dad sit and watch TV, I calm down because I hear that someone else is awake…" (Jakobsson et al., 2022b).*
	Calming Objects and Activities	*"They are all soft [the toy's collection] and bring nice memories, some are presents from people I love. . .some are fidget toys to keep my hands busy and some. . .I have them all in a basket and go for them. . .[They] help me unwind my mind as I stare the ceiling trying to sleep. (Pavlopoulou, 2020).* *"…it's a dreamcatcher—but my dad, when he gives it to us, he blesses them himself, puts his own energy into it. So even though he's not with us, he's there and he's protecting us as we sleep". (Palimeru et al., 2020).*
	Technology Encourages Tiredness	*"I just try to go to sleep and it won't happen, I will have to watch YouTube just to fall asleep…it just helps but I can't explain it" (Bainton & Hayes, 2022).* *"Think like I just go on my phone just to like calm down after like the day like to get*

		ready for bed." (Gruber et al., 2017).
	The Sleep Environment	*"…you need peace and quiet, where it is dark, no sounds" (Jakobsson et al., 2022b).* *"In my dad's house we have got shutters and it makes it really easy to sleep, because it is quite dark" (Moran-Ellis & Venn, 2007).*
	Routine; Feeling in Control	*"Preparing for sleep, I think it's having a set routine. So, like washing your face, brushing your teeth. Because I read somewhere that if you do that every night before you go to bed, it trains your body to start getting tired around when you start doing those things." (Palimeru et al., 2020)* *"I know that routines really, really, do help because it kind of tells my body that it is time to go to sleep and makes me look forward to going to bed at night." (Tougas, 2021).*
Scaffolded to Change	Having Supportive and Boundaried Parents	*"…even though it's hard for the parents to remind and nag us to go to bed and put down the phone…you need someone to tell you to do it…" (Jakobsson et al., 2022b)* *"It would be real helpful. Like [parents] sit with you at a table with a paper and pencil, OK, tomorrow you have to do this, like a schedule." (Owens et al., 2006).*
	Encouraging Personal Responsibility	*"…from the outside, adults can always influence and pay attention to things and try to help, but in the end, it is always up to me because only I can decide when I go to bed" (Jakobsson et al., 2022b)* *"If it's your own internal motivation rather than a competition, it might have longer-lasting effects." (Levenson et al., 2021).*
	Perceived Expertise of the Supporting Adult	*"[Sleep]'s something that's kind of overlooked a lot. So I think if it's coming from a psychologist or a serious medical professional, it could start to change the view on sleep from being like, oh, it's just sleep to being like, oh, this is an actual important thing that I need to focus on." (Maier et al., 2023).*

		"So if the doctor tells…the patients or the kids to get a good sleep or you'll be like very sick or somethin' like that, then the people will really try to get some sleep." (Owens et al., 2006).
	Peer Support	*"I feel like if everyone could go on the same blog and see the progress everyone else is making or not making and compare it to what you're doing. And see what might help with them could possibly help with you." (Conroy et al., 2017)* *"I just feel like if we have other teenagers, we can all agree with each other. Like learn stuff off each other." (Maier et al., 2023).*
	Centering Adolescent Experiences and Needs	*"A lot of us don't have people to, yeah, we have parents and stuff. They be in their own world. And I feel like we don't get the recognition that we should get. We want to get acknowledged." (Maier et al., 2023).* *"I think having that intervention be personalized to each different person would be important, 'cause everybody's gonna care about different bullet points there." (Levenson et al., 2021).*
Sleep Disruptors	A Racing Mind and Body	*"When I have tough time sleeping it's cause mostly there's a lot on my mind or I'm sad about something or I'm overthinking stuff… I feel like our mind could be our biggest challenge" (Maier et al., 2023).* *When I come home I'm super hyper, I don't even know why, I just can't sleep easily because I'm more awake, I guess." (Gruber et al., 2017).* *"Usually it's just that I'm not tired enough, or the body is, but I don't know ... the brain just doesn't switch off" (Jakobsson et al., 2022a).*
	Habitual Technology Use	*"I'm addicted to my phone. Most of the time, the reason I wake up in the middle of the night is to look for my phone because I fell asleep with it." (Paterson et al., 2019).* *"I always use my phone before bed. I know most people my age do, I know it's bad,*

		and I don't know if it is possible for me to not have in my room." (Tougas, 2021)
	The Sleep Environment	*"My brother has so much homework, and he doesn't sleep until 2:00 AM. And I'm right next door, so whenever his light is on, it bothers me." (Quante et al., 2019).* *"Your room doesn't quite feel like your own for sleeping in and purely leisure, because if you work in that room and it's all, you feel a little bit claustrophobic sometimes." (Foulkes et al., 2019).*
Overlooked and Out of Control; I Can't Change	Negative View of Interventions	*"It might be hard to pay attention to yourself when you're surrounded by other people, especially if they're your peers or your friends." (Maier et al., 2023).* *"Maybe I wouldn't want to think about that stuff, you know? I mean maybe I wouldn't want to write it down because then I'd realize how bad it is to think about. I don't think I'd want to accept the fact that those are the reasons I can't sleep." (Conroy et al., 2017)*
	Lack of Sleep Knowledge	*"It's important [sleep] but we don't understand how to get it always" (Godsell & White, 2019).* *"…at school, they always say that you should sleep and how much, but they do not teach you how, they just say that you should sleep…maybe you need a little bit of help with sleep…" (Jakobsson et al., 2022b).*
	Perceived Lack of Autonomy and Control	*"It is just, like, this vicious cycle." (Foulkes et al., 2019).* *". . . . I could theoretically go to bed earlier, but . . . (loud sigh)" (Gaarde et al., 2020).* *"Even when I clear my mind, I can't fall asleep" (Quante et al., 2019).*
	Adults and Adolescents; Ambivalent Relationships	*"Sometimes my mum she'll tell me, like, "If you go to sleep earlier, you'll be able to get up, like, early in the morning and be good at school." Yeah, but I think it's stupid. I think it's like maybe it does matter but it doesn't. I don't really see a difference." (Orzech, 2013)*

	"My parents don't really care about when or how I sleep," "they don't care or know how important sleep is" (Gaarde et al., 2020).

Theme 1: The Day is Only as Good as the Night Before; Sleep is Valued

Supported by 14/22 studies, adolescents reported valuing and having a positive attitude towards sleep, notably identifying its importance relative to their ability to function and achieve what they want in the day.

1.1 Good Sleep Improves Health and Functioning. Commonly reported was the notion that experiencing a good night's sleep has significant benefits in the acquisition of energy which supports engagement in daytime activities. Critically, adolescents reported the reward obtained from good sleep (and the consequence of poor sleep) on their daytime functioning which helped them to reflect on and prioritise sleep.

1.2 Sleep Supports Mood and Mental Health. Alongside functioning, adolescents keenly noticed the impact poor sleep had on their mood. They identified sleep as an important factor in feeling positive and boosting their self-esteem, as well as being essential in maintaining good relationships with others. Furthermore, sleep contributed to maintaining a sense of control as it improved their ability to problem solve. Self-control also appears relative to a later theme around sleep behaviour (section 6.3).

1.3 Learning and Development. Education was noted as a particularly motivating factor for adolescents to prioritise and value sleep. Adolescents expressed concern if they didn't prioritise sleep, they would lose concentration in class, eliciting frustration. Poignantly, several adolescents spoke about a need to obtain good grades, with a fear of underachievement due to poor sleep. Interestingly, education as a contributor to a positive sleep attitude conflicts with another emerging attitude (section 2.2).

Theme 2: The Day is More Important Than the Night; Sleep is Devalued

Supported by 21/22 studies, adolescents commonly reported a convergence of increasing educational, employment, and social pressures, culminating in the normalisation of poor sleep and its de-prioritisation.

2.1 Lack of Sleep and Routine is Normalised. There was a clear rhetoric of adolescents being tired constantly, with an inability to obtain enough sleep identified as normal. This attitude led adolescents to undervalue sleep, as they felt others (peers, parents, culture) also subscribed to this norm. Critically, adolescents reported the primary rectifier of poor sleep was to catch-up another time, thus never engaging in a sleep routine.

2.2 Education, Employment, Extracurricular Activities; They All Come First. Multiple adolescents reported sleep as secondary to daytime pressures, with the consequences of not meeting these worse than the consequences of poor sleep. Thus, adolescents used time typically dedicated to sleep as a place to retrieve time for education and activities. Whilst adolescents recognised a need to achieve more sleep, with poor sleep a social norm and increasing daytime pressures this knowledge has little impact. Many adolescents reported a wider sense of cultural norms around productivity leading them to overvalue daytime activity and undervalue sleep.

2.3 Needing to be Accepted, Shifting Social Norms. A shift in the social norm relative to increasing late night activity in adolescence, and the need to follow this, was a prevalent attitude across studies. Many participants reported delaying sleep for fear of judgement from peers and to be accepted. Interestingly, many spoke of feeling obligated to engage in social interactions during the night as part of avoiding this judgement or due to a fear of missing out, rather than being motivated by the enjoyment of social interaction.

Theme 3: Sleep Promotors

Supported by 16/22 studies, adolescents identified a variety of supportive factors enabling them to achieve good quality sleep.

3.1 Security and Relational Safety at Night. Participants reported feeling safe at night enabled them to relax in preparation for a good night’s sleep. When participants

spoke of this feeling of safety, it was often relative to others (particularly caregivers) being in proximity; some spoke of co-sleeping promoting sleep, whilst others spoke of needing to feel connected to another in the household.

3.2 Calming Objects and Activities. Multiple adolescents reported engaging in specific activities, such as bathing or reading, or having specific objects with them, to facilitate a sense of calmness to encourage sleep. As with relational safety, adolescents reported being connected to an object helped them feel safe as it reminded them of positive memories, or the objects had cultural connections.

3.3 Technology Encourages Tiredness. In several studies adolescents reported a positive view of technology, using mobile phones or watching media encouraging a feeling of tiredness and enabling sleep. Whilst this theme contrasts other themes (section 5.2), it highlighted the centrality of technology in adolescent lives. Whilst only a few adolescents spoke about using technology actively to fall asleep, most reported using it to wind down and to shut off from daytime pressures.

3.4 The Sleep Environment. Emerging from this theme was the importance of individualising the bedroom environment to suit the specific needs of the person. Thus, multiple conflicts emerged about the 'right' bedroom environment, around light, noise, temperature, and privacy. Whilst the sleep environment was referenced across multiple studies, participants with autism highly emphasised the importance of their environment in promoting sleep.

3.5 Routine; Feeling in Control. Many participants spoke of being in a regular bedtime routine, relaying how this cued their bodies to initiate a sense of tiredness and promoted sleep. In line with this, some participants spoke about how dedicating time in their routine to prepare for future events provided them with a feeling of control. Interestingly this contradicts a later theme describing thinking as disruptive (5.1).

Theme 4: Scaffolded to Change

Supported by 16/22 studies, adolescents reported proponents of changing sleep behaviour and quality. Primarily, participants reported needing boundaries and direction from adults to support change, but interestingly, there was a balance between adults taking control versus encouraging personal autonomy and peer support.

4.1 Supportive and Boundaried Parents. Parents were identified as a particularly helpful source of support in improving sleep. Many adolescents reported feeling unable to change their sleep without parental boundaries to support them to make 'good' choices around sleep hygiene. Some adolescents spoke of needing explicit parental boundaries around technology use or needing to codevelop appropriate bedtime rules.

4.2 Encouraging Personal Responsibility. Adolescents spoke positively of being encouraged to reflect and learn from their own experience as a way of improving sleep. Whilst they required adult support to do this, many adolescents felt the primary need for others to be involved was around helping them recognise their responsibility in the process of change. Whilst most adolescents aligned with needing adult support and boundaries (4.1), some reported this would never be enough to change their behaviour, needing themselves to be the primary instigators of change.

4.3 Perceived Expertise of the Supporting Adult. Adolescents referenced the importance of where sleep messages came from. They spoke about being ambivalent towards information provided by teachers and sometimes parents but appeared to hold the views of healthcare professionals in high esteem. Adolescents reported messages from healthcare professionals would promote a shift in their attitude and belief which encouraged them to change sleep behaviour.

4.4 Peer Support. Connected to a prior theme of the need to be accepted, adolescents again reported the importance of peer influence on sleep behaviour. Within

this theme, participants spoke positively of having peers around them, and of how they could influence them to make changes by initially normalising sleep difficulties, and then working together to change. Adolescents also reported how much they valued learning from their peers, contradicting a prior theme of valuing views of those with perceived expertise.

4.5 Centring Adolescent Experiences and Needs. Adolescents reported when it comes to changing sleep behaviour, there is a central need to be heard and understood, and for support to be individualised to their needs. For adolescents who changed their sleep behaviour, a large majority referenced being heard by adults and them being responsive to their individual needs was supportive.

Theme 5: Sleep Disruptors

Evidenced by 20 studies, many adolescents reported common disruptors to obtaining regular quality sleep. A common thread through the descriptive themes was the lack of control adolescents felt they had over disruptors, and how this was the norm for them.

5.1 A Racing Mind and Body. Adolescents commonly reported internal processes and experiences, such as thoughts and emotions, challenging to their sleep; many highlighted their mind being their biggest challenge. Although identified as its own subtheme, many adolescents reported rumination at night was related to needing to problem solve experiences from the day. Adolescents also spoke about experiencing a mind-body conflict when trying to sleep, feeling physically tired but mentally alert. Adolescents expressed they had no control over these experiences.

5.2 Habitual Technology Use. The automatic use of technology and its central place within the night-time experience was noted by many adolescents. Some acknowledged their use of technology was an addiction, thus implying a lack of control over its disruptive nature relative to sleep. Interestingly, adolescents often referenced

the impact of social norms on their technology use at night, noting they felt urges to check notifications and engage in social activity, even at the cost of their sleep.

5.3 The Sleep Environment. As already reported, adolescents spoke about their need's relative to the sleep environment. Common sleep disruptors included having to share with others, noise, light, and temperature. Although less commonly reported, adolescents reporting on the demands of school, reflected how their bedrooms becoming a multipurpose sleep and study space disrupted sleep, indicating they lost a large cue (the bedroom) for sleep.

Theme 6: Overlooked and Out of Control; I Can't Change

Evidenced by 19 studies, many adolescents reported how a lack of knowledge and control were barriers when attempting to improve sleep. Despite adults attempting to support them with change, adolescents reported this to be a negative experience, with many feeling ambivalent towards this support, and this ambivalence returned to them by adults when asking for help.

6.1 Negative View of Interventions. Adolescents who experienced a sleep intervention held negative views of its ability to support change, as the perceived effort required reduced a willingness to engage. Adolescent also felt interventions were too exposing, fearing judgement from others. Interestingly, the largest cited reason adolescents felt negatively towards seeking support was their fear of an intervention making things worse; many acknowledged they did not want to uncover the extent of their sleep issues.

6.2 Lack of Sleep Knowledge. Many adolescents expressed a lack of sleep knowledge was a barrier to making change, as this gap led to limited recognition about how poor their sleep was. This was despite many identifying with a belief of sleep being important, referencing how lack of knowledge prevented them from taking action to

improve sleep. Across several studies, adolescents had many questions for study authors about how to improve sleep that had been seemingly left unanswered.

6.3 Perceived Lack of Autonomy and Control. One of the most heavily reported themes across studies was the feeling of having no control over sleep or changing sleep behaviour. There was a rhetoric of adolescents simply not being able to sleep, and thus becoming trapped in a vicious cycle of poor sleep. Adolescents reported when they made attempts to improve their sleep, this did not result in any rewarding improvement. Many reported wanting a quick fix, and some resorted to substance use to take control of their sleep. Some participants reflected if they were helped to feel in control, this would lead to positive change.

6.4 Adults and Adolescents; Ambivalent Relationships. Despite adolescents reporting in other themes their need for caregiver support, some adolescents reported an ambivalent attitude towards this. Conversely however, some participants felt as they became adolescents, adults became ambivalent, loosening their boundaries around sleep and role modelling poor sleep hygiene. Some adolescents reported caregivers often prioritised other needs above sleep, increasing the notion that adults did not value their sleep, thus, even if they wanted to change, there does not appear to be the support.

Synthesis Appraisal

Based on the GRADE CERQual assessment, confidence in the analytic themes is high (Table 6). However, there were minor or moderate concerns regarding the low reflexivity and lack of methods used to check finding credibility, and relevance of the findings for adolescents from ethnic minorities and those identifying as neurodiverse. This was exacerbated by the focus on Western countries and using voluntary response sampling limiting the heterogeneity of adolescents represented. Thus, these factors reduce our confidence in findings for these groups globally.

Table 6

GRADE-CERQual Appraisal Summary

Analytical Theme	Methodological Limitations	Coherence	Adequacy	Relevance	CERQual Rating
The Day is Only as Good as the Night Before; Sleep is Valued	Minor-moderate concerns.	Minor concerns.	No, or very minor concerns.	Moderate concerns around relevance to neurodiverse adolescents and ethnic minorities.	High Confidence
The Day is More Important Than the Night; Sleep is Devalued	Minor-moderate concerns.	Minor concerns.	No, or very minor concerns.	Moderate concerns around relevance to neurodiverse adolescents.	High Confidence
Sleep Promotors	Minor-moderate concerns.	Minor concerns.	No, or very minor concerns.	Moderate concerns around relevance to adolescents from ethnic minorities.	High Confidence
Scaffolded to Change	Minor-moderate concerns.	Minor concerns.	No, or very minor concerns.	Moderate concerns around relevance to older adolescents (20+ years of age).	High Confidence
Sleep Disruptors	Minor-moderate concerns.	Minor concerns.	No, or very minor concerns.	Minor concerns around relevance to adolescents from Hispanic backgrounds.	High Confidence
Overlooked and Out of Control; I Can't Change	Minor-moderate concerns.	Minor concerns.	No, or very minor concerns.	Moderate concerns around relevance to neurodiverse adolescents.	High Confidence

Discussion

This report aimed to systematically review and synthesise adolescent experience of sleep, and their perceptions of the facilitators and barriers to sleep and changing behaviour. Being a mutually homogeneous yet internally heterogeneous group

(Steinberg & Morris, 2001), it was unsurprising the resulting analytical themes were either mutually reinforcing or conflicting. Relative to adolescents' attitudes towards sleep, two distinct conflicting themes emerged; sleep was either valued or devalued.

A subsample of adolescents across studies reflected sleep was a highly valuable activity. Interestingly, this view was primarily motivated by personal experiences of poor sleep, rather than being driven by a knowledge of the costs or benefits. Whilst a lack of knowledge was identified as a barrier to changing sleep in another subtheme, this theme suggests neither was it an intrinsic motivator. Relative to the ToPB (Ajzen, 1991) knowledge may support perceived behavioural control, but programs need to additionally target norms and beliefs to promote change. This may explain why psychoeducation-based sleep programs have been insufficient in supporting behaviour change (Blunden & Rigney, 2015; Gruber, 2017).

Alongside personal experiences of sleep, adolescents reported peers and caregivers had a role in shaping positive sleep attitudes. The importance of peer relationships during adolescence has long been documented (Scholte & van Aken, 2006), with positive peer relationships found to predict better sleep (Tu & Cai, 2020), alongside perceived family and teacher support (Delaruelle et al., 2021). Bronfenbrenner's ecological systems theory (1977) clearly identifies the role social systems have in shaping attitudes and behaviours; if social systems share a consistent view of sleep, it is likely an adolescent's intention to enact healthy sleep behaviours will increase (Bronfenbrenner, 1977).

Contrastingly, other adolescents within the review devalued sleep, reporting it to be an activity they de-prioritised in accordance with other demands, aligning with the psychosocial pressures illustrated in the perfect storm model (Carskadon, 2011; Crowley et al., 2018). Whilst increases in academic and social pressures during adolescence have been extensively documented (Scholte & van Aken, 2006), recent

research suggests these demands have increased across time, especially during the COVID-19 pandemic (Lessard & Puhl, 2021; Nygren & Hagquist, 2019). Critically, as puberty is a time in which the nervous system recalibrates relative to stress, this reporting of increased external demands and deprioritisation of sleep may have long-term health implications (DePasquale et al., 2019).

This conflict across the adolescent sample relative to sleeps value may be understood by the ToPB (Ajzen, 1991). Adolescents undervaluing sleep may have been more exposed to subjective norms of poor sleep, with narratives of needing to be consistently productive and 'teenagers being tired' being mutually reinforcing norms reducing sleep intention (Ajzen, 1991). However, this subjective norm was noted across a large proportion of the sample, thus, it may be less to do with exposure to these norms, and more related to perceived behavioural control (Ajzen, 1991). Adolescents valuing sleep may have greater access to sleep promotors, or an absence of sleep disruptors, thus their ability to obtain sleep requires less effort and is more rewarding.

Within the analysis, a picture emerged of several sleep promotors, one of which was security and relational safety, with many adolescents reporting the presence of a trusted other facilitating sleep. At a behavioural level, sleep is a loss of awareness of the environment, therefore preventing a reaction to danger; thus, humans evolved to use social belonging and connectedness for protection (Dahl & Lewin, 2002). Therefore, interpersonal security reduces threat levels enabling engagement in a behaviour requiring loss of awareness (Gunnar et al., 2019). Interestingly, reliance on relational safety was also reported in a recent review, whereby greater relational conflict, or a greater number of familial stressors led to adolescents experiencing lower quality sleep (Khor et al., 2021). This sense of safety arguably extends to adolescents reported use of calming objects and engaging in a planned bedtime routine. Pre-frontal cortex

functions of self-control and planning are most effective when threat is low (Blakemore & Choudhury, 2006).

Curiously, there emerged conflicting data around technology use, with some adolescents reporting it to promote sleep, whilst others reported it as disruptive and addictive. The former experience aligns with a recent review of adolescent social media use, finding it facilitated sleep, potentially due to a connectedness with peers supporting interpersonal security (Gunnar et al., 2019; MacKenzie et al., 2022). The use of technology was also reported to counterbalance one of the most prominent disruptors adolescents identified, their own mind. An inability to switch off from the day significantly delays sleep, with the wider literature identifying this as a common experience with emotional arousal and rumination peaking during the evening in adolescence (Dahl, 2001; Heath et al., 2018; Takano & Tanno, 2011). Therefore, technology use may be multifaceted, partly to facilitate interpersonal security, but also as a distraction from thoughts, or to gain reassurance (Daniels et al., 2023).

However, whilst technology use may promote sleep, there appears to be a precarious balance of technology tipping from being helpful to a hindrance. Adolescents have previously reported technology's addictive nature to be connected to a fear of missing out (Casale et al., 2018), and as found in Mackenzie et al.'s (2022) review, this negates motivation to sleep. Thus, technology being helpful or a hinderance might lie in an individual's sensitivity to the influence of social norms (Ajzen, 1991). If adolescents are driven by a need to belong, and peers are engaged in technology use at night, the intent to only use it to promote sleep is diminished (Ajzen, 1991).

A lack of control over behaviour was a notable thread emerging from the synthesis, with adolescents reportedly feeling unable to improve their sleep. This likely reflects typical adolescent development, with reward-based systems developing prior to self-control systems, thus, attempts to change sleep without immediate results likely

leads to choosing other more rewarding behaviours (Casey et al., 2008). It was therefore unsurprising some adolescents reported needing explicit boundaries from caregivers to improve their sleep. recent review identified adolescents of caregivers who gave explicit limitations around sleep behaviours obtained more sleep than with parents whose boundaries were implicit (Khor et al., 2021). Others spoke of requiring caregivers to place boundaries but to balance this with encouraging personal autonomy. Evidence suggests striving for autonomy develops in the early-mid teens, thus, whilst caregivers may want to encourage developing independence this needs to be gradual, as lack of family support is correlated with poorer sleep (Delaruelle et al., 2021; Hedin et al., 2020).

This strive for autonomy may also explain the contrasting view identified in this synthesis of adolescents expressing ambivalence towards adult support. Relative to making change, adolescents sometimes placed peer support above caregivers, acknowledging engagement in sleep interventions is predicated on peer norms. Perhaps this presenting conflict of requiring adult boundaries, with a natural shift towards wanting autonomy, peer support, and personal responsibility, is driven by the wider definition of adolescence used within this synthesis. Whilst caregiver relations are still valued in adolescence, peer relations become increasingly prioritised with age (Scholte & van Aken, 2006). Thus, the age and context of the adolescents in this synthesis will determine the norms they subscribe to when intending to enact a behaviour (Ajzen, 1991).

Included Study Limitations

There was a considerable weakness across the studies relative to the exploration of participant and researcher relationship. This is a particularly critical shortcoming, given the historical and pervasive discourse of young person's voices being inherently passive, which has been used to justify their exclusion from active participation (Liebenberg, 2018), making it difficult to assess the balance of power between

researchers and participants. This embeds uncertainty into this synthesis regarding how marginalised or centralised adolescent voices were across studies (Pincock & Jones, 2020). This issue is further exacerbated by a lack of use of respondent validation, triangulation of findings, and a lack of methodological clarity, thus, the reviews outcome likely harbours researcher biases.

Also noted across a large proportion of studies was a lack of consideration for cultural or sociodemographic factors, with a large majority neglecting to report on these. It has been well-established adolescent sleep varies according to sociodemographic factors, and whilst the studies included in this review were all produced in westernised countries, these still have large internal variabilities (Gariepy et al., 2020).

Whilst there is no one conventional way to explore and report researcher-participant relationships, or stating cultural or theoretical positions, this issue needs addressing. Although social desirability and researcher bias are likely to be an intractable issue, the act of openly reporting biases during qualitative processes and enhancing adolescent participation, can significantly improve qualitative research (Bergen & Labonté, 2020).

Review Strengths and Limitations

Positively, this review is the first to synthesise the growing field of qualitative exploration, capturing the experience of adolescent sleep from across 22 studies, representing 793 adolescents. Strengthening this is the comprehensive search strategy and methodology, with use of the SPIDER framework and ENTREQ guidelines enhancing transparency. The inclusion criteria were also detailed with a clear rationale of including a wider definition of adolescent age, as it reflects the biopsychosocial growth continuing into the mid-twenties (Sawyer et al., 2018). This enhances confidence in the outcome of the data being representative of the modern-day adolescent.

Another clear strength is the exploration of grey literature reducing publication bias, as often qualitative research is less likely to be accepted for publication (Soilemezi & Linceviciute, 2018). Lastly, the author chose to only synthesise direct participant quotes, thus, themes emerging from these are more likely to validly reflect adolescent experience and language.

However, this review does present limitations, thus readers are encouraged to exercise caution when reflecting on its interpretations. Author bias likely permeates the review due to the author being the sole developer and conductor of it. Whilst the author attempted to mitigate this via a reflexive diary and statement (Appendices D and E), and with a second assessor for the quality appraisal, this cannot nullify the authors preconceptions and influence. The author could have further mitigated risk of bias by improving patient and public involvement in the review design and providing respondent validation to reflect on the credibility of interpretations (Boland et al., 2014).

Additionally, whilst the author used specialised frameworks and tools, there are limitations in the ones chosen. For example, the SPIDER search tool (Cooke et al., 2012) has been criticised for its inability to identify all relevant research papers (Methley et al., 2014). Indeed, within this review, two papers were derived from forward and backward citation searching, despite use of the tool. Relative to the CASP checklist (CASP UK, 2018), although a widely used and accessible tool, it allows for rater variation as the criteria require rigid outcomes. A more sensitive tool may have better captured the variation in study quality. Lastly, the author did not account for age discrepancies within their interpretations. Although there is a clear rationale to use the wider adolescent definition, the author could have better explored age differences, as the sample likely experiences significant lifestyle differences.

Clinical Implications

Healthcare professionals seeking to address poor adolescent sleep should adopt a multipronged approach to account for the contrasting experiences emerging from this synthesis. Adolescents clearly expressed their individual experiences and needs should be prioritised and understood. Thus, for clinicians providing sleep interventions for adolescents, whichever approach is adopted there needs to be increased emphasis on the assessment process to ensure the support is adapted to individual needs. Within an intervention, it is likely there will be two key targets for supporting improved sleep; firstly, helping adolescents to increase their perceived behavioural control (Ajzen, 1991), and secondly, supporting them to develop tools to manage arousal and rumination processes; both of which are mutually reinforcing. Thus, clinicians should explore these factors during assessment and target these if identified as contributing factors.

This review also identifies a behavioural approach would be appropriate in supporting adolescent sleep. Adolescents typically develop a need for more autonomy prior to the development of self-control processes, thus they are likely to seek and be more greatly reinforced by short-term reward (Casey et al., 2008). Clinicians should support adolescents to develop associations between individually rewarding daytime behaviours and better-quality sleep. For example, if working with an adolescent who enjoys playing sport, relative to operant conditioning (Skinner, 1953), a clinician could support them to engage in recording a diary around mood, energy, and ability to engage in the sport, and link this to their experiences of sleep the previous night. The aim would be to support them to recognise the impact sleep has on a personally rewarding activity, with learning from personal experience identified as an important factor in encouraging a positive attitude towards sleep. If clinicians can support a young person to consistently do this i.e., a continuous reinforcement approach (Skinner, 1953), this could lead to important behavioural change.

This type of approach has also been considered and recommended in other adolescent sleep research based on their findings and links to adolescent neurodevelopment (Illingworth et al., 2020). However, whilst encouraging reflection and autonomy is necessary, clinicians should maintain explicit behavioural boundaries within the work to recognise adolescent development of self-control; it is not necessarily linear nor homogenic across the population.

Beyond clinicians, adolescents reported caregivers need to engage collaboratively with them to understand their sleep and need for developing independence when setting boundaries. As relational safety was identified in this review and wider literature as a key promotor of sleep (Khor et al., 2021), caregivers could also explore with their adolescent the behaviours they express which help them to feel safe, with boundaries also providing an implicit sense of safety (Khor et al., 2021).

Wider cultural and social norms also need to be targeted relative to increasing an adolescent's intention to change (Ajzen, 1991). With an increased focus on peer norms (Scholte & van Aken, 2006), whole-school workshops and programs could target these, with healthcare and educational professionals having a role in delivering them. Providing accessible programs on sleep is arguably essential in supporting adolescent sleep, as nowhere in this synthesis emerged an image of adolescents actively seeking support. Rather, adolescents expressed accessing support could be exposing and effortful. Thus, clinicians should engage in a more proactive approach to sleep education and support, not only for adolescents, but also for family, educational, and healthcare systems. Inviting sleep into the conversation in each system and proactively delivering accessible sleep programs can support the process of challenging negative norms around sleep; having consistent messages and boundaries is required to support improvement.

Conclusion

This synthesis highlights the importance of having a multipronged approach when targeting factors contributing to adolescent sleep behaviours aligned with attitudes, subjective norms, and perceived control (Ajzen, 1991). However, this cannot be targeted towards adolescents alone, as Bronfenbrenner's model (1977) keenly highlights, they exist in systems harbouring a multitude of attitudes, beliefs, and behaviours related to sleep. Emerging from this synthesis is the awareness adolescents have of the proponents and disruptors of their sleep, and facilitators and barriers to changing sleep. Therefore, targeting the negative norms around adolescent sleep, and modelling positive attitudes and behaviours towards sleep, will be the key to supporting adolescents to utilise the knowledge they have. Furthermore, it also appears the norm around needing to be productive, and of prioritising daytime activities also needs to be targeted; reducing psychosocial pressure allows adolescents to make space for sleep. Whilst these approaches may not resolve adolescent difficulties with sleep, its impact could be significant.

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Appendices

Appendix A: ENTREQ Checklist (Tong et al., 2012)

No	Item	Guide and description
1	Aim	State the research question the synthesis addresses.
2	Synthesis methodology	Identify the synthesis methodology or theoretical framework which underpins the synthesis, and describe the rationale for choice of methodology *(e.g. meta-ethnography, thematic synthesis, critical interpretive synthesis, grounded theory synthesis, realist synthesis, meta-aggregation, meta-study, framework synthesis).*
3	Approach to searching	Indicate whether the search was pre-planned *(comprehensive search strategies to seek all available studies)* or iterative *(to seek all available concepts until they theoretical saturation is achieved).*
4	Inclusion criteria	Specify the inclusion/exclusion criteria *(e.g. in terms of population, language, year limits, type of publication, study type).*
5	Data sources	Describe the information sources used (e.g. *electronic databases (MEDLINE, EMBASE, CINAHL, psycINFO, Econlit), grey literature databases (digital thesis, policy reports), relevant organisational websites, experts, information specialists, generic web searches (Google Scholar) hand searching, reference lists)* and when the searches conducted; provide the rationale for using the data sources.
6	Electronic Search strategy	Describe the literature search *(e.g. provide electronic search strategies with population terms, clinical or health topic terms, experiential or social phenomena related terms, filters for qualitative research, and search limits).*
7	Study screening methods	Describe the process of study screening and sifting *(e.g. title, abstract and full text review, number of independent reviewers who screened studies).*
8	Study characteristics	Present the characteristics of the included studies *(e.g. year of publication, country, population, number of participants, data collection, methodology, analysis, research questions).*
9	Study selection results	Identify the number of studies screened and provide reasons for study exclusion *(e.g, for comprehensive searching, provide numbers of studies screened and reasons for exclusion indicated in a figure/flowchart; for iterative searching describe reasons for study exclusion and inclusion based on modifications t the research question and/or contribution to theory development).*
10	Rationale for appraisal	Describe the rationale and approach used to appraise the included studies or selected findings *(e.g. assessment of conduct (validity and robustness), assessment of reporting (transparency), assessment of content and utility of the findings).*
11	Appraisal items	State the tools, frameworks and criteria used to appraise the studies or selected findings *(e.g. Existing tools: CASP, QARI, COREQ, Mays and Pope [25]; reviewer developed tools; describe the domains assessed: research team, study design, data analysis and interpretations, reporting).*
12	Appraisal process	Indicate whether the appraisal was conducted independently by more than one reviewer and if consensus was required.
13	Appraisal results	Present results of the quality assessment and indicate which articles, if any, were weighted/excluded based on the assessment and give the rationale.
14	Data extraction	Indicate which sections of the primary studies were analysed and how were the data extracted from the primary studies? *(e.g. all text under the headings "results /conclusions" were extracted electronically and entered into a computer software).*
15	Software	State the computer software used, if any.
16	Number of reviewers	Identify who was involved in coding and analysis.
17	Coding	Describe the process for coding of data *(e.g. line by line coding to search for concepts).*
18	Study comparison	Describe how were comparisons made within and across studies *(e.g. subsequent studies were coded into pre-existing concepts, and new concepts were created when deemed necessary).*
19	Derivation of themes	Explain whether the process of deriving the themes or constructs was inductive or deductive.
20	Quotations	Provide quotations from the primary studies to illustrate themes/constructs, and identify whether the quotations were participant quotations of the author's interpretation.
21	Synthesis output	Present rich, compelling and useful results that go beyond a summary of the primary studies (e.g. *new interpretation, models of evidence, conceptual models, analytical framework, development of a new theory or construct).*

Appendix B: Registered Protocol on PROSPERO

PROSPERO
International prospective register of systematic reviews

UNIVERSITY of York
Centre for Reviews and Dissemination

Systematic review

A list of fields that can be edited in an update can be found here

1. * Review title.

Give the title of the review in English

Exploring adolescent attitudes towards sleep and their perspective of the facilitators and barriers to obtaining good quality sleep: A qualitative evidence synthesis

2. Original language title.

For reviews in languages other than English, give the title in the original language. This will be displayed with the English language title.

Exploring adolescent attitudes towards sleep and their perspective of the facilitators and barriers to obtaining good quality sleep: A qualitative evidence synthesis

3. * Anticipated or actual start date.

Give the date the systematic review started or is expected to start.

23/12/2022

4. * Anticipated completion date.

Give the date by which the review is expected to be completed.

31/05/2023

5. * Stage of review at time of this submission. [3 changes]

This field uses answers to initial screening questions. It cannot be edited until after registration.

Tick the boxes to show which review tasks have been started and which have been completed.

Update this field each time any amendments are made to a published record.

The review has not yet started: No

Review stage	Started	Completed
Preliminary searches	Yes	Yes
Piloting of the study selection process	Yes	Yes
Formal screening of search results against eligibility criteria	Yes	Yes
Data extraction	Yes	Yes
Risk of bias (quality) assessment	Yes	Yes
Data analysis	No	No

Provide any other relevant information about the stage of the review here.

6. * Named contact.

The named contact is the guarantor for the accuracy of the information in the register record. This may be any member of the review team.

Laura Hughes

Email salutation (e.g. "Dr Smith" or "Joanne") for correspondence:

Miss Laura Hughes

7. * Named contact email.

Give the electronic email address of the named contact.

lhughes7@sheffield.ac.uk

8. Named contact address

Give the full institutional/organisational postal address for the named contact.

Clinical Psychology Unit, University of Sheffield, Cathedral Court, Floor F, 1 Vicar Lane, Sheffield, S1 2LT

9. Named contact phone number.

10. * Organisational affiliation of the review.

Full title of the organisational affiliations for this review and website address if available. This field may be completed as 'None' if the review is not affiliated to any organisation.

University of Sheffield

Organisation web address:

https://www.sheffield.ac.uk/

11. * Review team members and their organisational affiliations.

Give the personal details and the organisational affiliations of each member of the review team. Affiliation refers to groups or organisations to which review team members belong. **NOTE: email and country now MUST be entered for each person, unless you are amending a published record.**

Miss Laura Hughes. University of Sheffield
Dr Charlotte Wright. University of Sheffield

12. * Funding sources/sponsors.

Details of the individuals, organizations, groups, companies or other legal entities who have funded or sponsored the review.

University of Sheffield

Grant number(s)

State the funder, grant or award number and the date of award

University of Sheffield

13. * Conflicts of interest.

List actual or perceived conflicts of interest (financial or academic).

None

This Systematic Review is being completed by Laura Hughes in partial fulfillment of the requirements for the award of Doctor of Clinical Psychology at the University of Sheffield (DClinPsy). Nonetheless, the intention is to publish this review alongside its thesis counterpart, a mixed-methods study on the acceptability of a school-based sleep intervention delivered by Mental Health practitioners, developed from recommendations set out in the government's green paper on transforming child and adolescent health and wellbeing.

14. Collaborators.

Give the name and affiliation of any individuals or organisations who are working on the review but who are not listed as review team members. **NOTE: email and country must be completed for each person, unless you are amending a published record.**

Dr Shona Goodall. Clinical Psychologist, SHSC NHS Trust
Dr Siobhan Taylor. EMHP Programme Director, University of Sheffield
Dr Liat Levita. Reader in Behavioural and Clinical Neuroscience, University of Sussex

15. * Review question.

State the review question(s) clearly and precisely. It may be appropriate to break very broad questions down into a series of related more specific questions. Questions may be framed or refined using PI(E)COS or similar where relevant.

What are adolescent attitudes towards sleep, and what are their perceptions of the barriers and facilitators to obtaining good quality sleep and/or changing sleep behaviours?

Aims

1. To synthesise the results of qualitative research exploring the perceptions of adolescents aged 10-24, with or without sleep difficulties, on sleep.

2. To explore facilitators and barriers to obtaining good quality sleep, and in engaging in behaviour change relative to sleep.

3. To evaluate the quality of the current evidence.

4. To use the above information to reflect on clinical implications and make recommendations for future research, and on the development of sleep interventions.

16. Searches. [1 change]

State the sources that will be searched (e.g. Medline). Give the search dates, and any restrictions (e.g. language or publication date). Do NOT enter the full search strategy (it may be provided as a link or attachment below.)

The full search strategy will be used to search electronic databases and grey literature sources (listed below) using a combination of keywords in order to be the most comprehensive as possible. The search strategy has been derived from the SPIDER framework, specifically focused on the Sample (adolescents aged 10-24), Phenomenon of Interest (sleep), the Research Type and Design (qualitative), and Evaluation (experiences/perspectives); the strategy will be publicised once the review is complete. The search string created will be constructed in order to achieve the highest specificity. Search dates will be from 1999 to the present day. Studies included must have been written in the English language.

Data sources/Databases:

• Scopus

• PsycINFO via OVID

• CINAHL

• Web of Science

• Grey Literature: OpenGrey, ProQuest, Ethos

The lead author will also undertake a manual review of references and citations within studies included for full review (i.e. forward and backward referencing), and of related reviews covering the topic of sleep and sleep interventions for adolescents. The Lead Reviewer will also contact authors who appear prominent (have contributed to several studies) in the area of adolescent sleep and sleep intervention research.

17. [1 change] URL to search strategy.

Upload a file with your search strategy, or an example of a search strategy for a specific database, (including the keywords) in pdf or word format. In doing so you are consenting to the file being made publicly accessible. Or provide a URL or link to the strategy. Do NOT provide links to your search **results**.

https://www.crd.york.ac.uk/PROSPEROFILES/383634_STRATEGY_20230109.pdf

Alternatively, upload your search strategy to CRD in pdf format. Please note that by doing so you are consenting to the file being made publicly accessible.

Do not make this file publicly available until the review is complete

18. * Condition or domain being studied.

Give a short description of the disease, condition or healthcare domain being studied in your systematic review.

Adolescent attitudes and experiences of Sleep, Facilitators and Barriers to Sleep and/or Sleep Behaviour Change.

19. * Participants/population.

Specify the participants or populations being studied in the review. The preferred format includes details of both inclusion and exclusion criteria.

Adolescents aged 10-24 years old, with or without sleep difficulties and/or comorbidities.

20. * Intervention(s), exposure(s).

Give full and clear descriptions or definitions of the interventions or the exposures to be reviewed. The preferred format includes details of both inclusion and exclusion criteria.

Not applicable as qualitative synthesis.

21. * Comparator(s)/control.

Where relevant, give details of the alternatives against which the intervention/exposure will be compared (e.g. another intervention or a non-exposed control group). The preferred format includes details of both inclusion and exclusion criteria.

Not applicable as qualitative synthesis.

22. * Types of study to be included.

Give details of the study designs (e.g. RCT) that are eligible for inclusion in the review. The preferred format includes both inclusion and exclusion criteria. If there are no restrictions on the types of study, this should be stated.

Qualitative studies and mixed method studies containing first-person accounts from adolescents and young people. Studies must have utilised either interviews and/or focus groups and/or observational methods.

23. Context.

Give summary details of the setting or other relevant characteristics, which help define the inclusion or exclusion criteria.

Studies need to a) report adolescent views on sleep, facilitators and barriers to sleep and/or sleep behaviour change, b) be of a qualitative or mixed-methods design, utilising interviews/focus groups/observation and including participant quotes, c) be written in the English language, and d) published within the timeframe of 1999 to present day.

24. * Main outcome(s).

Give the pre-specified main (most important) outcomes of the review, including details of how the outcome is defined and measured and when these measurement are made, if these are part of the review inclusion criteria.

This review aims to explore the attitudes and perspectives of adolescents relative to their sleep experience. Thus, the review will extract information pertaining to adolescent experiences via first-person accounts and quotes.

Measures of effect

Please specify the effect measure(s) for you main outcome(s) e.g. relative risks, odds ratios, risk difference, and/or 'number needed to treat.

Not applicable.

25. * Additional outcome(s).

List the pre-specified additional outcomes of the review, with a similar level of detail to that required for main outcomes. Where there are no additional outcomes please state 'None' or 'Not applicable' as appropriate to the review

Not applicable.

Measures of effect

Please specify the effect measure(s) for you additional outcome(s) e.g. relative risks, odds ratios, risk difference, and/or 'number needed to treat.

Not applicable.

26. * Data extraction (selection and coding).

Describe how studies will be selected for inclusion. State what data will be extracted or obtained. State how this will be done and recorded.

The lead author (LH) will be responsible for the following process:

1. Full identified references will be imported into the Rayyan software to manage the review process.

2. Duplicates and studies that do not fit the search strategy e.g., animal research, identified using Rayyan, will be checked="checked" value="1" by the lead author before being removed from the review.

3. The lead author will then independently screen all identified papers' abstracts and/or portions of text to determine if they meet the inclusion criteria.

4. A sample of identified papers will be reviewed by another member of the research team to ensure a consistent approach to inclusion and exclusion.

5. Any lead authors who appear in multiple studies will be contacted at this stage to determine if there are additional relevant papers they have contributed to not identified through the initial search. Any additional papers will be added to Rayyan unless the suggestions are duplicates.

6. Papers for full review will then be determined. Forward and backward citations of the full papers will be completed at this stage. The lead author will screen abstracts of citations to determine inclusion in the full paper review.

7. Full papers will then be reviewed by the lead author to determine the final papers for synthesis. A sample of the full papers will be reviewed by another team member to ensure a consistent approach to inclusion and exclusion.

8. Once all papers included for review have been determined, data will be extracted using an extraction form

developed for this review. Study authors will be contacted if additional information is necessary.

9. CASP (UK, 2018) will be used to review study quality.

10. The lead author will use NVivo to extract and check relevant qualitative data, before using Thomas and Harden's (2008) version of thematic synthesis to synthesise the data.

27. * Risk of bias (quality) assessment.

State which characteristics of the studies will be assessed and/or any formal risk of bias/quality assessment tools that will be used.

The Research Excellence Framework (REF) in the UK recommends qualitative research demonstrate rigour through quality appraisal (REF, 2018). The Lead Researcher will therefore be guided by the validated Critical Appraisal Skills Programme (CASP, UK, 2018) qualitative appraisal tool when evaluating the included studies. However, the researcher will use a modified version of the CASP developed by Long et al. (2020). This version incorporates an additional question "Are the study's theoretical underpinnings (e.g., ontological and epistemological assumptions; guiding theoretical framework(s)) clear, consistent and conceptually coherent?" (Long et al., 2020). Recent guidance from the American Psychological Association (APA) and the British Psychological Society (BPS) has recommended that the appraisal of qualitative research evaluates the transparent reporting of a coherent and congruent epistemological and ontological stance (Levitt et al., 2018; Research Excellence Framework, 2018).
The lead author (LH) will further utilise the GRADE-CERQual framework to assess confidence in cumulative findings of interest to the phenomenon. They will assess according to the four domains: methodological limitation, relevance, adequacy of the data and coherence. Upon reporting the results, the lead author (LH) will follow ENTREQ reporting guidelines to ensure transparency.

28. * Strategy for data synthesis.

Describe the methods you plan to use to synthesise data. This **must not be generic text** but should be **specific to your review** and describe how the proposed approach will be applied to your data. If meta-analysis is planned, describe the models to be used, methods to explore statistical heterogeneity, and software package to be used.

Data tables for the studies will include details of the study author, location, and publication date, study design and setting, participant demographics, and a summary of themes/outcomes. The included papers will be imported into NVivo software and Thomas and Harden's (2008) thematic analysis will be used to synthesise the themes across studies. This synthesis will describe the attitudes adolescents have regarding sleep and their perception of the facilitators and barriers to obtaining good quality sleep and/or engaging in sleep

behaviour changes. It will involve the following three stages:

1. Stage one: the lead author will review each paper's result section and conduct line-by-line coding of participants' narrative quotes. This provides a 'translation of concepts' across studies. Incomplete or vague lines and authors' interpretations will not be allocated a code.

2. Stage two: codes will be organised into descriptive themes using a 'hierarchical tree structure'. This compares the codes based on similarities and differences. The first two stages will likely produce a synthesis that reflects the aims and findings of the papers rather than our research aim.

3. Stage three: the lead author will then develop analytic themes using the codes and descriptive themes which consider adolescent experience of sleep and behaviour change. There will be no minimum quotes required to make a theme or subtheme because this approach appreciates and validates unique experiences which do not require supporting quotes to be valid.

29. * Analysis of subgroups or subsets.

State any planned investigation of 'subgroups'. Be clear and specific about which type of study or participant will be included in each group or covariate investigated. State the planned analytic approach.

Not applicable.

30. * Type and method of review.

Select the type of review, review method and health area from the lists below.

Type of review

Cost effectiveness

No

Diagnostic

No

Epidemiologic

No

Individual patient data (IPD) meta-analysis

No

Intervention

No

Living systematic review

No

Meta-analysis
No

Methodology
No

Narrative synthesis
No

Network meta-analysis
No

Pre-clinical
No

Prevention
No

Prognostic
No

Prospective meta-analysis (PMA)
No

Review of reviews
No

Service delivery
No

Synthesis of qualitative studies
Yes

Systematic review
Yes

Other
No

Health area of the review

Alcohol/substance misuse/abuse
No

Blood and immune system
No

Cancer
No

Cardiovascular

No

Care of the elderly

No

Child health

Yes

Complementary therapies

No

COVID-19

No

Crime and justice

No

Dental

No

Digestive system

No

Ear, nose and throat

No

Education

No

Endocrine and metabolic disorders

No

Eye disorders

No

General interest

No

Genetics

No

Health inequalities/health equity

No

Infections and infestations

No

International development

No

Mental health and behavioural conditions

Yes

Musculoskeletal

No

Neurological
No

Nursing
No

Obstetrics and gynaecology
No

Oral health
No

Palliative care
No

Perioperative care
No

Physiotherapy
No

Pregnancy and childbirth
No

Public health (including social determinants of health)
Yes

Rehabilitation
No

Respiratory disorders
No

Service delivery
No

Skin disorders
No

Social care
No

Surgery
No

Tropical Medicine
No

Urological
No

Wounds, injuries and accidents

No

Violence and abuse

No

31. Language.

Select each language individually to add it to the list below, use the bin icon to remove any added in error.

English

There is an English language summary.

32. * Country.

Select the country in which the review is being carried out. For multi-national collaborations select all the countries involved.

England

33. Other registration details.

Name any other organisation where the systematic review title or protocol is registered (e.g. Campbell, or The Joanna Briggs Institute) together with any unique identification number assigned by them. If extracted data will be stored and made available through a repository such as the Systematic Review Data Repository (SRDR), details and a link should be included here. If none, leave blank.

34. Reference and/or URL for published protocol.

If the protocol for this review is published provide details (authors, title and journal details, preferably in Vancouver format)

Add web link to the published protocol.

Or, upload your published protocol here in pdf format. Note that the upload will be publicly accessible.

No I do not make this file publicly available until the review is complete

Please note that the information required in the PROSPERO registration form must be completed in full even if access to a protocol is given.

35. Dissemination plans.

Do you intend to publish the review on completion?

Yes

Give brief details of plans for communicating review findings.?

The results from this systematic review will be written as a thesis to be submitted as part of the Doctorate in Clinical Psychology. There will also be plans to submit the review for publication in journals such as the Journal of Adolescent Health.

36. Keywords.

Give words or phrases that best describe the review. Separate keywords with a semicolon or new line. Keywords help PROSPERO users find your review (keywords do not appear in the public record but are included in searches). Be as specific and precise as possible. Avoid acronyms and abbreviations unless these are in wide use.

Adolescent; Sleep; Attitude; Perspective; Qualitative; Behaviour Change; Human

37. Details of any existing review of the same topic by the same authors.

If you are registering an update of an existing review give details of the earlier versions and include a full bibliographic reference, if available.

38. * Current review status.

Update review status when the review is completed and when it is published.New registrations must be ongoing so this field is not editable for initial submission.

Please provide anticipated publication date

Review_Ongoing

39. Any additional information.

Provide any other information relevant to the registration of this review.

40. Details of final report/publication(s) or preprints if available.

Leave empty until publication details are available OR you have a link to a preprint (NOTE: this field is not editable for initial submission). List authors, title and journal details preferably in Vancouver format.

Give the link to the published review or preprint.

Appendix C: Data Extraction Form

PAPER 1: TITLE

General Information:

Extraction Date	
Name of Reviewer	
Author(s)	
Year of Publication	
Country of Publication	
Research Question/Aims	
Source of publication/publication type	e.g., peer-reviewed, from journal of XYZ

Study Design/Methodology

Type	e.g., qual
Setting	e.g., schools
Ethical approval obtained?	
Data Collection Method	e.g., focus groups
Data Collection Timeframe	e.g., 6 months
Sampling method	e.g., convenience
Sample size	
Consent clearly obtained?	
Data Analysis	e.g., thematic analysis
Research bias/reflexivity	e.g., researchers indicated potential biases and maintained reflexive diary

Participant Demographics

Age range and mean (SD)	
Ethnicity	
Sex	
Sleep difficulties?	
Comorbidities	
Other demographics detailed?	

Findings

Participant quotes/accounts	
Themes	
Conclusions	
Opinion	What the author(s) argues
Citations/references to follow up	

Appendix D: Author Reflexive Statement

The author is a white female, from a working-class background, currently training as a Clinical Psychologist in the North of England. Prior to her experience in the healthcare sector, the author had a professional background of working in the Pharmaceutical and Biotechnology industry, primarily with people from higher socioeconomic backgrounds. Her healthcare background however has been working with people experiencing various mental health, physical, social, and socioeconomic difficulties. The author's personal and professional experiences have led her to develop a strong interest in social justice, community psychology, and of working with whole systems, including family systems, and thus has obtained future work in community child and adolescent mental health services.

At the time of writing this statement, the author was working in an adult mental health service, supporting individuals regarded as having complex emotional needs, and experiencing various social issues including addiction, housing issues, and involvement from other support services (e.g., social services). Interestingly, sleep difficulties were pervasive across client experiences, and thus the author was working with sleep issues on a regular basis, including understanding individual determinants of good/poor sleep, and understanding sleep behaviour change in adults.

The author notes she prioritises giving an individual as much power and autonomy in their experiences with healthcare, and as much of a voice as possible when working clinically. She often seeks to understand their experiences as unique to them, via systemic and relational therapeutic approaches. The author therefore chose to adopt a qualitative approach to exploring sleep, as her perception is that qualitative experiences and evidence should be more highly valued and represented in the literature. It also reflects the authors own beliefs that the meaning placed on experience

is constructed through interactions (e.g., between individuals, systems etc.), and cannot be truly and validly defined numerically.

The author conducted this review at a time whereby services in their home country (the UK) were identified as being chronically underfunded, and the nation was experiencing a cost-of-living crisis. The author therefore acknowledges her interest in social justice and understanding the influence of systems, and how adolescents relate to systems and the beliefs/attitudes modelled around them, likely influenced the design and delivery of this review.

Appendix E: Reflective Diary Excerpts

Excerpt 1 (on designing the review)

I notice I am already feeling a sense of anxiety approaching this review, I guess I am worried about being able to almost 'retell' the experiences of adolescents when I'm no longer one myself? What if I am unable to remove some of my biases I've developed as an adult (that are already coming into my mind) about how mobile phones are probably going to be a theme, or that teenagers just don't care about sleep? I'm glad I'm noticing this now before I jump in, I hope I can keep an eye on this when I'm thinking about what studies to include – I am a bit worried I might emphasise particular experiences more than others, and this will go against my aim of wanting to give power to the adolescent voice in this review…But, I also need to be careful I don't them open up the criteria to everyone, knowing that I can't possibly represent the whole diversity of adolescent experiences!

Excerpt 2 (on quality appraisal)

I am noticing when I am reading some papers I'm getting a feeling of frustration, mostly because I feel some papers really haven't demonstrated enough of the adolescent voice with only offering a few direct quotes, and the large majority being their interpretation. I notice I have totally the opposite feeling when I am reading papers which have an abundance of quotes. I will need to keep an eye on this feeling when it comes to the quality appraisal, as I don't want it to lead to over or undervaluation of quality. I will need to try and notice this bias of more quotes = better quality, because this is purely an assumption. I will also need to keep a check on this when it comes to the coding, I note feeling more negatively towards a paper could lead me to rush or place less importance on the coding of the paper, and this would be detrimental when it comes to making sure all the adolescent experiences noted are captured as much as possible and not overlooked.

Excerpt 3 (on synthesising)

I'm thinking again about my approach to this review. I am a bit worried it conflicts with my view of experiences being unique – how can I aggregate experiences together with this view? How can I say there are 'common' themes when I believe each individual experiences sleep differently? I am noticing this is getting in the way of me being able to see connections between codes and between themes, I think I have been holding on too tightly to this belief. Perhaps I need to acknowledge that whilst everyone can have

unique experiences and bring personal meaning to things, there actually might be some commonalities across individuals, what differs is the extent to which they are experienced or the combination of what is experienced. I'm going to come back with this in mind and review how I have synthesised some of this.

Appendix F: CASP Quality Appraisal Tool and Rating Criteria (Long et al., 2020)

Box 2. The questions in our modified CASP qualitative checklist tool

1. Was there a clear statement of the aims of the research?
   - What was the goal of the research
   - Why it was thought important
   - Its relevance
2. Is a qualitative methodology appropriate?
   - If the research seeks to interpret or illuminate the actions and/or subjective experiences of research participants
   - Is qualitative research the right methodology for addressing the research goal
3. Was the research design appropriate to address the aims of the research?
   - If the researcher has justified the research design (e.g. have they discussed how they decided which method to use)
4. Are the study's theoretical underpinnings (e.g. ontological and epistemological assumptions; guiding theoretical framework(s)) clear, consistent and conceptually coherent?
   - To what extent is the paradigm that guides the research project congruent with the methods and methodology, and the way these have been described?
   - To what extent is there evidence of problematic assumptions about the chosen method of data analysis? e.g. assuming techniques or concepts from other method (e.g. use of data saturation, originating in grounded theory) apply to chosen method (e.g. Braun and Clarke's reflexive thematic analysis[39,40]) without discussion or justification.
   - To what extent is there evidence of conceptual clashes or confusion in the paper? e.g. claiming a constructionist approach but then treating participants' accounts as a transparent reporting of their experience and behaviour.
5. Was the recruitment strategy appropriate to the aims of the research?
   - If the researcher has explained how the participants were selected
   - If they explained why the participants they selected were the most appropriate to provide access to the type of knowledge sought by the study
   - If there are any discussions around recruitment (e.g. why some people chose not to take part)
6. Was the data collected in a way that addressed the research issue?
   - If the setting for the data collection was justified
   - If it is clear how data were collected (e.g. focus group, semi-structured interview etc.)
   - If the researcher has justified the methods chosen
   - If the researcher has made the methods explicit (e.g. for interview method, is there an indication of how interviews are conducted, or did they use a topic guide)
   - If methods were modified during the study. If so, has the researcher explained how and why
   - If the form of data is clear (e.g. tape recordings, video material, notes etc.)
   - If the researcher has discussed saturation of data
7. Has the relationship between researcher and participants been adequately considered?
   - If the researcher critically examined their own role, potential bias and influence during (a) formulation of the research questions (b) data collection, including sample recruitment and choice of location
   - How the researcher responded to events during the study and whether they considered the implications of any changes in the research design
8. Have ethical issues been taken into consideration?
   - If there are sufficient details of how the research was explained to participants for the reader to assess whether ethical standards were maintained
   - If the researcher has discussed issues raised by the study (e.g. issues around informed consent or confidentiality or how they have handled the effects of the study on the participants during and after the study)
   - If approval has been sought from the ethics committee
9. Was the data analysis sufficiently rigorous?
   - If there is an in-depth description of the analysis process
   - If thematic analysis is used. If so, is it clear how the categories/themes were derived from the data
   - Whether the researcher explains how the data presented were selected from the original sample to demonstrate the analysis process
   - If sufficient data are presented to support the findings
   - To what extent contradictory data are taken into account
   - Whether the researcher critically examined their own role, potential bias and influence during data analysis and selection of data for presentation
10. Is there a clear statement of findings?
    - If the findings are explicit
    - If there is adequate discussion of the evidence both for and against the researcher's arguments
    - If the researcher has discussed the credibility of their findings (e.g. triangulation, respondent validation, more than one analyst)
    - If the findings are discussed in relation to the original research question
11. How valuable is the research?
    - If the researcher discusses the contribution the study makes to existing knowledge or understanding (e.g. do they consider the findings in relation to current practice or policy, or relevant research-based literature)
    - If they identify new areas where research is necessary
    - If the researchers have discussed whether or how the findings can be transferred to other populations or considered other ways the research may be used

Appendix G: Study Contribution to Descriptive and Analytical Themes

Analytical Theme	The day is only as good as the night			The day is more important than the night			Sleep promotors					Scaffolded to change					Sleep disruptors			Overlooked and out of control			
Descriptive Theme	1.1	1.2	1.3	2.1	2.2	2.3	3.1	3.2	3.3	3.4	3.5	4.1	4.2	4.3	4.4	4.5	5.1	5.2	5.3	6.1	6.2	6.3	6.4
Bainton & Hayes (2022)			✓	✓				✓	✓		✓							✓			✓	✓	✓
Barone (2017)	✓	✓		✓	✓		✓			✓	✓						✓				✓	✓	✓
Conroy et al. (2017)	✓		✓	✓	✓	✓		✓		✓	✓		✓		✓	✓	✓		✓	✓		✓	✓
Foulkes et al. (2019)		✓	✓	✓	✓	✓											✓		✓			✓	✓
Gaarde et al. (2020)				✓	✓	✓						✓	✓				✓	✓	✓			✓	✓
Godsell & White (2019)		✓		✓		✓			✓		✓	✓					✓	✓	✓		✓		✓
Gruber et al. (2017)	✓	✓	✓	✓	✓				✓								✓	✓					
Hedin et al. (2020)	✓		✓	✓		✓		✓				✓					✓	✓					✓
Jakobsson et al. (2022a)	✓		✓	✓		✓	✓										✓	✓			✓	✓	

Jakobsson et al. (2022b)				✓	✓	✓	✓	✓	✓	✓		✓	✓		✓				✓		✓	✓	✓
Levenson et al. (2021)					✓								✓			✓					✓	✓	
Maier et al. (2023)					✓	✓					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	
Morris-Ellis & Venn (2007)				✓		✓	✓			✓	✓	✓					✓		✓				
Orzech (2013)				✓	✓	✓						✓		✓							✓	✓	✓
Owens et al. (2006)	✓	✓	✓	✓	✓		✓					✓		✓	✓	✓	✓	✓	✓		✓	✓	✓
Palimeru et al. (2020)	✓		✓			✓	✓	✓	✓	✓	✓	✓	✓					✓	✓				✓
Paterson et al. (2019)	✓				✓	✓							✓				✓	✓			✓	✓	
Pavlopoulou (2020)							✓	✓	✓	✓	✓	✓					✓		✓				
Quante et al. (2019)			✓	✓	✓												✓	✓	✓			✓	
Tougas (2021)					✓			✓		✓	✓				✓			✓	✓			✓	✓
Vandendriessche et al. (2022)	✓	✓	✓	✓	✓	✓			✓			✓				✓	✓	✓	✓		✓	✓	
Waite et al. (2018)	✓	✓		✓				✓			✓		✓		✓	✓	✓		✓	✓	✓	✓	✓

Section Two: Empirical Study

Investigating the need for, and acceptability of, a Mental Health Practitioner-delivered school-based sleep intervention for adolescents

Abstract

Objectives: This study sought to investigate the acceptability of a Sleep Health Promotion Program delivered by Educational Mental Health Practitioners (EMHPs) to 10-14-year-olds in UK schools.

Design: The study utilised a sequential mixed-methods design, collecting demographic, survey, and semi-structured interview data to explore acceptability, with survey and interview structures derived from the Theoretical Framework of Acceptability (TFA).

Methods: Four hundred and six adolescents engaged in the sleep workshop, with 80.3% completing the quantitative sleep survey. Eighteen survey respondents further progressed to engage in semi-structured interviews. T-tests, regression analyses, and framework analysis was conducted to assess intervention acceptability.

Results: Two thirds of survey respondents reported experiences of subthreshold insomnia indicating a need for sleep support. Survey participants reported the workshop to be moderately acceptable, significantly improving their perceived knowledge of sleep and intention to change, with subjective wellbeing a significant contributor to this change. Interview participants further reported the workshop to be acceptable, with each TFA domain emerging from the analysis, resulting in seven themes and 23 subthemes. They expressed a positive attitude towards the workshop, reporting an increase in sleep knowledge, sleeps value, and self-reflection on sleep behaviours, identifying the role of the EMHP being key to this change and overall acceptability.

Conclusions: The EMHP delivered sleep program was acceptable relative to increasing perceived sleep knowledge and encouraging adolescents to contemplate sleep behaviour change. Further studies are now required to explore acceptability across a more diverse demographic and to understand the longer-term impact of the program.

Practitioner Points

- In 2017 the UK Government published a green paper with an agenda to transform child and adolescent health and wellbeing via improving preventative and early intervention support through a 'whole school' approach. As part of this agenda, this study sought to explore the acceptability of a whole-school sleep health promotion program in supporting adolescent sleep.
- The role of the Educational Mental Health Practitioner (EMHP) was identified as key to program acceptability, with adolescents valuing and trusting the information more due to perceived healthcare expertise of the EMHP. School-based workshops should be continued with healthcare professional support and delivery.
- Sleep-related difficulties were highly prevalent across the adolescent sample; thus, all clinicians should proactively assess the sleep needs of adolescents when they seek support for their health and wellbeing. Peer group interventions alongside family-based support should be offered, as parent/caregiver boundaries and behaviours were identified as important in supporting adolescent sleep.
- This study recommends EMHP-delivered sleep workshops continue due to supporting adolescents to shift from pre-contemplative to contemplative states of change relative to their health. However, replication of this study is required to explore acceptability across a more diverse demographic relative to ethnicity, gender, and neurodiversity.

Keywords:

Adolescent; Sleep; Whole-school approaches; Early Intervention; Mixed-methods

Introduction

Status of Adolescent Sleep

Achieving appropriate sleep duration and quality is a significant problem during adolescence, with 45% self-reporting sleep difficulties, and 11% meeting the diagnostic criteria for insomnia (Blunden & Rigney, 2015; Dohnt et al., 2012). Sleep disturbances are a transdiagnostic experience across adolescent psychological difficulties such as internalising problems, attentional problems, and reductions in wellbeing (Alfano et al., 2013; Forbes et al., 2008; McMakin & Alfano, 2015). As of 2020 in the UK, there has been a rise in such difficulties, with 16.0% of 5–16-year-olds experiencing a probable psychological disorder, compared to 10.8% in 2017 (NHS Digital, 2020).

Conceptual models have evidenced sleep difficulties often precede a considerable proportion of psychological difficulties in adolescence (Lovato & Gradisar, 2014; Vermeulen et al., 2021). At age 15 sleep quality has been found to predict severity of anxiety and depression at ages 17, 21, and 24 (Orchard et al., 2020); a recent epidemiological meta-analysis further identified a third of adults with these difficulties experienced their onset before age 14, corresponding with elevations in sleep problems (Solmi et al., 2022). Thus, targeting sleep could be a significant preventative measure for later mental health issues.

Physiologically, shifts in sleep patterns, particularly a delay in falling asleep, are evidenced to coincide with the onset of puberty, which on average occurs in females aged 11 and males aged 12 (Kail & Cavanaugh, 2010). Crowley et al. (2018) identified in their conceptual model, increases in autonomy and psychosocial pressures are linked to the biological process of puberty. Thus, early adolescence appears to be a pivotal time to target sleep related difficulties.

Adolescent Sleep Interventions

Presently, evidence is emerging for the effectiveness of Cognitive Behaviour Therapy (CBT) for sleep disturbances in an adolescent clinical population (Blake et al., 2017; Griggs et al., 2020). However, there is still a significant lack of evidence for prevention or early intervention programs for a non-clinical population (Åslund et al., 2018). Indeed, Gruber's 2017 review of school-based sleep programs found multiple gaps in the literature, namely how acceptable they are for local use and in addressing adolescent needs.

In 2017, the UK Government published a Green Paper setting out to transform the state of child and adolescent health and wellbeing, which included improving sleep (Department of Health (DoH) & Department of Education (DoE), 2017). The paper discussed the need for education and health services to collaborate, with external healthcare expertise supporting a 'whole school' approach to health (DoH & DoE, 2017). Borne out of this agenda, national Mental Health Support Teams (MHSTs) consisting of psychologically trained Educational Mental Health Practitioners (EMHPs) were developed. EMHPs are central in facilitating the whole-school approach, delivering evidence-based health promotion programs in schools to support adolescent health and wellbeing (DoH & DoE, 2017).

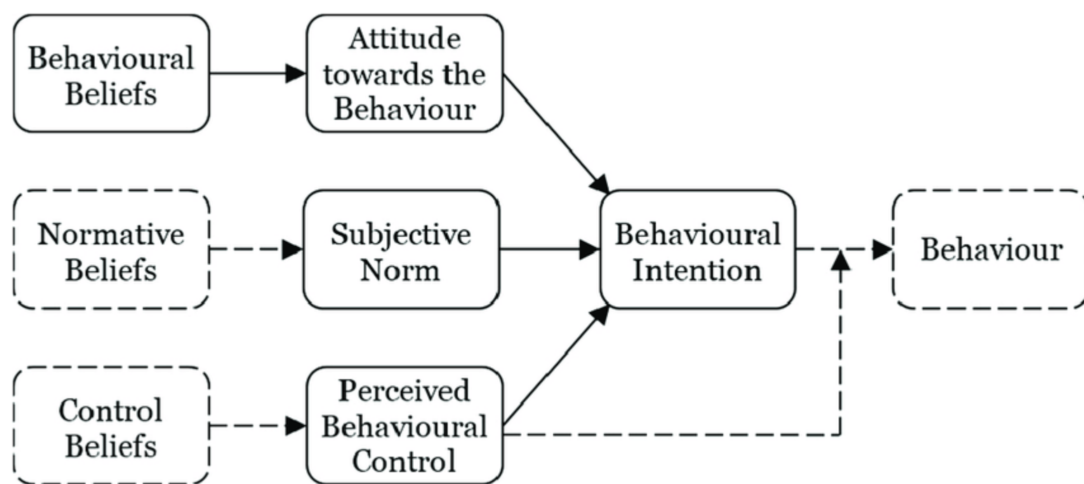
Health promotion programs in schools are not a new concept. There is a substantial evidence base demonstrating these programs have been effective in improving health knowledge and behaviour change in adolescent populations (Leger et al., 2007; Whitnam & Aldinger, 2009). However, sleep is often omitted from these programs (Perry et al., 2013), and despite the UK government encouraging its inclusion, sleep education is not a mandatory component of the school curriculum (Bainton & Hayes, 2022; DoH & DoE, 2017).

Wider research in non-clinical populations has found sleep health promotion programs for young adults to be effective in improving sleep behaviours, as predicted via behavioural intention (Kor & Mullan, 2011; Mead, 2020; Strong et al., 2018). The Theory of Planned Behaviour (ToPB) surmises actual volitional behaviour is dependent on intention to perform the behaviour, as influenced by attitudes, subjective norms, and perceived behavioral control (Figure 1, Ajzen, 1991).

Relative to sleep, the ToPB seeks to explain how engaging in healthy sleep practises

Figure 1

The Theory of Planned Behaviour (Ajzen, 1991).



is dependent on the person's intention to engage in these, as predicted by the beliefs they hold about sleep (subjective attitudes), sleep practises and beliefs modelled by caregivers, peers, and the wider culture in which they exist (subjective norms), and their perceived ability to control sleep behaviours (perceived behavioural control).

In young adults, the ToPB has already been identified to be a predictive model of sleep (Mead & Irish, 2019). As adolescents are at a critical transition point in their biopsychosocial development, in which they begin to assimilate norms and attitudes towards health behaviours (Shure, 2003), exploring these factors could contribute to an improved understanding of the psychosocial contributors to poor adolescent sleep practises (Crowley et al., 2018). Despite the predictive ability of ToPB being evidenced

by multiple meta-analytic reviews (Armitage & Conner, 2001), there has been very little literature exploring whether adolescent sleep interventions are effective in increasing intention to change, and therefore actual behavioural change (Gruber, 2017).

To develop an effective intervention, as recommended by the Medical Research Council (MRC, 2008), research must evaluate acceptability. To the best of our knowledge, there has only been one peer-reviewed study assessing acceptability of a sleep health promotion program in UK schools (McCrory et al., 2023). Using a mixed-methods approach, McCrory et al. (2023) attempted to resolve scalability limitations from an earlier by Illingworth et al. (2020), by consolidating their ten-session teacher-led program into a three-session researcher-led program. Whilst Illingworth et al. (2020) found their program only elicited improvements in adolescents self-reporting sleep difficulties, McCrory et al. (2023) found its shorter program to be acceptable and effective in reducing sleep-related difficulties across the sample.

Despite McCrory et al's. (2023) positive findings, in not using an acceptability framework, participant response was likely to be less varied and study replication is more difficult (Sekhon et al., 2017). This is due to acceptability often being defined inconsistently across health research, impeding the validity of acceptability outcomes, and thus limiting the ability to compare findings (Sekhon et al., 2017). If an intervention is considered acceptable, patients are more likely to adhere to and benefit from it (Hommel et al., 2013), therefore, an acceptability framework is necessary to ensure the outcome is valid and therefore beneficial.

Furthermore, researcher delivery of McCrory et al.'s (2023) program also prevents scalability and generalisability. Whilst there may have been consistency across the delivery of the program, this is not sustainable beyond the study, as the researchers did not aim to continuously deliver the program. Whilst nationwide teacher delivery of a sleep program can be manualised, monitoring and evaluating its implementation across

localities will likely fall on the developers of such a program. This would be unsustainable and likely inequitable relative to the amount of support and training needed across the country. Whereas, with the development of the MHSTs, there is a clear governance and training structure for EMHPs to provide this program with the resources in place to adapt the offering relative to the area without losing psychological principles of the program.

Another core component of acceptability is the interventions' ability to directly address the needs and concerns of key stakeholders (MRC, 2008). Whilst there are population wide statistics on the prevalence of adolescent sleep issues (DoH & DoE, 2017), studies seeking to develop early interventions for sleep have largely neglected assessing adolescent needs, particularly in determining level of sleep knowledge, attitudes to sleep, and specific sleep difficulties (Gruber, 2017; McCrory et al., 2023). =

Study Rationale

It is clear there are multiple gaps in the literature needing addressing. Critically, exploring the needs of the key stakeholders relative to sleep and how acceptable they find early intervention programs has been lacking. When acceptability has been explored, it has also been without the use of a framework. It is essential adolescent voices and needs are heard and understood early in the transformation agenda (DoH and DoE, 2017), as stakeholder engagement is evidenced to increase the sustainability and effectiveness of an intervention (Levenson et al., 2021).

Secondly, studies exploring sleep promotion programs vary in their content and format, and primarily use teachers or researchers to deliver the program (Gruber, 2017). This significantly limits study replicability and program scalability and is contrary to the UK Governments recommendations of consistency across education and healthcare systems (DoH & DoE, 2017). Thus, UK schools are still awaiting an acceptable, effective, and scalable program to address adolescent sleep difficulties.

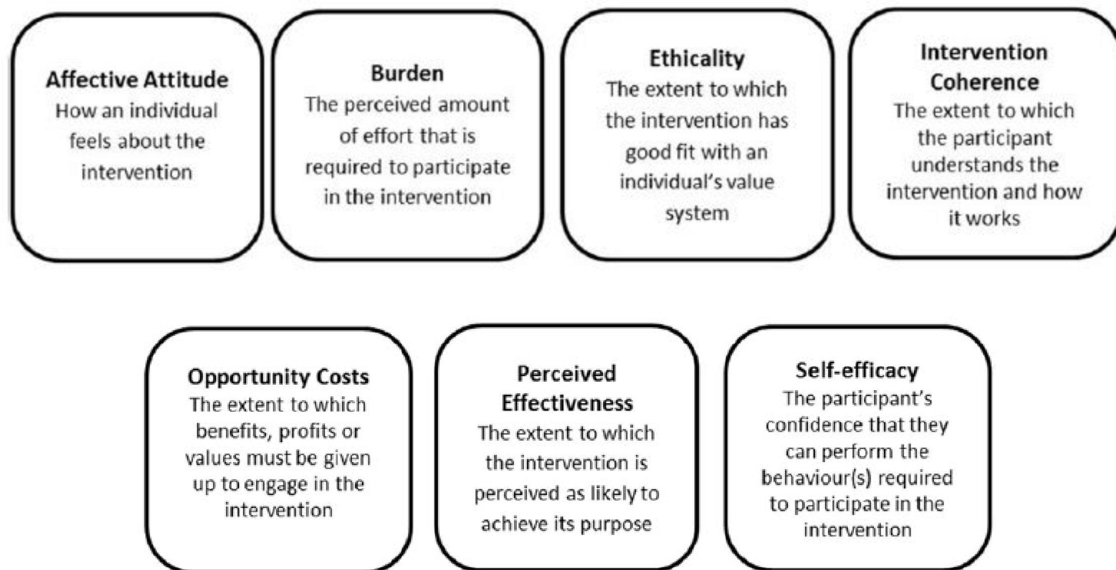
The Study

This study seeks to address identified gaps and limitations through conducting a mixed-methods study evaluating the EMHP designed and delivered sleep health promotion workshop. This study will explore the sleep needs of an adolescent school sample and will explore acceptability and effectiveness of the workshop in addressing these needs and increasing sleep knowledge and intention to change sleep behaviours. Acceptability will be operationalised by the Theoretical Framework of Acceptability (TFA) (Sekhon et al., 2017) which defines how appropriate an intervention is relative to seven domains exploring cognitive and emotional responses (Figure 2, Sekhon et al., 2017).

This study will also seek to explore potential mediators of acceptability and effectiveness to inform the programs development. The mediators chosen include sleep difficulties, wellbeing, and demographics. It is necessary to understand whether the program is acceptable and effective relative to a spectrum of sleep experiences, as prior research has indicated it may only be acceptable/effective for those self-reporting sleep difficulties (Illingworth et al., 2020). Furthermore, with the bidirectional link between wellbeing and sleep (Lovato & Gradisar, 2014), it is important to understand the influence of wellbeing relative to the intervention's acceptability and effectiveness. Regarding demographic mediators, these are more exploratory as acceptability and effectiveness may differ across diversity, with this intervention aiming to be inclusive and accessible to all adolescents.

Figure 2

The Theoretical Framework of Acceptability (Sekhon et al., 2017)



Aims & Hypotheses

Aim 1: Establish participant need for the sleep workshop.

Aim 2: Explore workshop acceptability and effectiveness (change in sleep knowledge and intention to change).

Aim 3: Explore potential mediators of workshop acceptability and effectiveness.

Hypothesis: Workshop acceptability and effectiveness will be greater for participants with sleep and/or wellbeing difficulties.

Methods

Research Philosophy and Design

This study was conducted from a critical realist standpoint. This epistemological position was adopted as whilst it acknowledges acceptability is a true concept, it also acknowledges a person's experience of this can radically differ; thus, in using the TFA (Sekhon et al., 2014) the study is attempting to explore a true definition of acceptability whilst allowing for personal experience across its seven domains.

This study utilised a sequential mixed-methods design, collecting demographic, survey, and semi-structured interview data integrated via merging, and triangulated to

assess the consistency of findings and to develop a comprehensive understanding of acceptability (Castro et al., 2010; Patton, 1999). Employing this approach enables more reliable conclusions to be drawn, enhancing workshop development and scale-up of the research (Fetters et al., 2013).

Data Collection and Analysis

The Sleep Workshop

The sleep health promotion workshop is a manualised workshop based on CBT principles delivered by EMHPs. The program is delivered in a 1-hour long session for academic year groups 6-11 within the school curriculum. The program aims to:

- Increase perceived knowledge of sleep
- Increase intention to change:
    - Sleep behaviours
    - Help-seeking behaviours

The program consists of the following components:

- Psychoeducation on sleep behaviours
- Identifying personal sleep strengths and development points
- Goal setting and developing a personalised sleep routine.
- Signposting further available support and skills.

Participants

All participants fit the eligibility criteria of:

A. 10-16 years of age.
B. Enrolled in a UK educational establishment.
C. Ability to communicate in the English language.

No additional criteria were utilised to ensure the sample was inclusive of the adolescent population the workshop is offered to.

Quantitative Measures

To assess need for and acceptability of the workshop an interactive survey (Appendix A) was developed using Slido software. Survey completion rate was recorded, with data collected on the following:

- Demographics
- Subjective sleep experience
- Perceived sleep knowledge
- Subjective wellbeing
- Behavioural intention
- Acceptability

Demographic characteristics of age, ethnicity, and gender were collected based on available school data. Experience of sleep was assessed pre-workshop via the Insomnia Severity Index (ISI, Morin, 1993); a 7-item self-report measure examining sleep issues with each item scored from 0-4 (0 = no issues, 4 = significant issues), with a maximum total score of 28. Example questions include "How satisfied/dissatisfied are you with your current sleep pattern?" and "How worried/distressed are you about your current sleep problem?". In non-clinical adolescent populations, the ISI has good to excellent internal consistency (Cronbach's α 0.7-0.9) with an optimal clinical cut-off of ≥9 (Chahoud et al., 2017; Chung et al., 2011; Gerber et al., 2016).

Subjective wellbeing was assessed pre-workshop using the Short Warwick-Edinburgh Mental Wellbeing Scale (SWEMWS); a 7-item measure examining functioning e.g., "I've been feeling useful", and "I've been thinking clearly". Each item is scored from 1 (none of the time) to 5 (all of the time), with total scores ranging from 7-35 (higher scores indicating greater wellbeing). The SWEMWBS has been validated in adolescents aged 10-21 in the UK and Denmark, with high internal consistency,

convergent, construct, and discriminant validity (Hauch et al., 2022; McKay & Andretta, 2017; Melendez-Torres et al., 2019).

Behavioural Intention was examined with survey questions developed from the ToPB (Ajzen, 1991) and adapted from Mead (2020) who utilised a 4-question survey examining ToPB and sleep. Behavioural intention was measured pre- and post-workshop, with example items including “I am able to make positive changes to my sleep if I wanted to”, and “I will seek support today to improve my sleep", each measured on a 1-10 scale (1 = ‘strongly disagree’, 10 = ‘strongly agree’), with scores ranging from 5-50.

The seven domains of the TFA developed by Sekhon et al. (2017) (Figure 2) were used to develop acceptability questions asked post-workshop. Example items include “How did you feel about today's workshop?”, and “Was the information in today's workshop easy to understand?”. Each item was scored on a 1-10 scale (1 = negative/disagreement, 10 = positive/agreement). Perceived sleep knowledge also formed part of the acceptability outcome (perceived effectiveness), and was measured with the item “How much do you know about getting a good night’s sleep?”, measured on a 1-10 scale (1 = none at all, 10 = a lot), pre- and post-workshop

Quantitative Analysis

Establishing Need. Prevalence of sleep difficulties were assessed from survey responses to the ISI (Morin, 1993) and reported as descriptive statistics (Mean, Standard Deviation, Range) and percentage of participants scoring above clinical cut-off (≥9, Chung et al., 2011).

Assessing Acceptability. An acceptability threshold and traffic light system based on health promotion literature utilising the TFA was employed (Cassidy et al., 2019; Pavlova et al., 2020; Sekhon et al., 2017; Soucy & Hadjistavropoulos, 2017):

1. Green (program is acceptable): 80% of workshop recipients engaged in the survey AND scored a minimum of 8/10 (80%) on all seven TFA domains.
2. Amber (program needs modification): 50-79% of workshop recipients engaged in the survey AND scored a minimum of 5/10 (50%) on all seven TFA domains.
3. Red (program is unacceptable): <50% of workshop recipients engaged in the survey AND scored <5/10 (50%) on all seven TFA domains.

To calculate response rate percentage, the number of adolescents attending the program and number of survey responses were recorded. To calculate acceptability, an average of the outcomes for each TFA domain (Sekhon et al., 2017) was calculated.

Exploring Effectiveness and Mediators of Acceptability. Two paired sample t-tests were conducted to assess pre- and post-workshop scores on perceived sleep knowledge and intention to change to evaluate perceived effectiveness.

Three multiple linear regression analyses were then conducted to explore mediators of perceived sleep knowledge, intention to change, and acceptability. The first analysis had post-workshop perceived sleep knowledge as the Dependent Variable (DV) and pre-workshop perceived sleep knowledge, age, gender, ethnicity, sleep, and wellbeing, as the Independent Variables (IVs). The second analysis had post-workshop Intention to Change score as the DV, and IVs of age, gender, ethnicity, sleep, wellbeing, and pre-workshop intention to change. The third analysis had acceptability score as the DV, and age, gender, ethnicity, sleep, and wellbeing, as the IVs. All categorical variables were dummy coded.

Qualitative Collection

The lead researcher conducted semi-structured interviews via videoconference with a sample of survey participants. An interview schedule (Appendix B) was developed from the TFA (Sekhon et al., 2017) and used to ensure continuity, provide

structure, and to align with the survey questions, whilst enabling flexibility for questions and clarifications (Gale et al., 2013).

Qualitative Analysis

Framework Analysis (FA) was utilised (Ritchie & Spencer, 1994) as it is not bound by a specific epistemological position (Gale et al. 2013), providing flexibility to obtain a 'best fit' for this research (Ritchie & Spencer 1994). The choice of FA was borne out of considering multiple qualitative analysis methods, of which the majority were excluded due to conflicting epistemologies with the research aim.

Braun and Clarkes (2006) Thematic Analysis (TA) was also considered given its position as independent of epistemology and theory (Braun & Clarke, 2006), and providing a similarly pragmatic approach. However, FA better emphasises the value of converging a priori knowledge and theory with emergent data driven themes in developing the analytic framework. This befits the study's use of predefined areas to explore within the qualitative approach, whilst being open to the emergence of discovering unexpected themes.

Additional considerations leading to the use of FA was the potential for future larger-scale research, which will cycle through exploring acceptability. The developed framework could therefore be explored and refined. Furthermore, a key strength of FA is the emphasis on transparent data management which embeds an audit trail of the interpretations made, enabling future researchers in this area to trace interpretations to the raw data (Parkinson et al., 2016). The process of conducting FA is summarised in Table 1, with information extracted from Ritchie and Spencer (1994).

Table 1

The Five Stages of Framework Analysis as Defined by Ritchie and Spencer (1994)

Stage	Description

Familiarisation	This stage involves immersion in the data, getting to know it extensively. It explores the 'overall feel'; the holistic sense of what is happening through listening to recordings, reading the transcripts, and identifying emerging issues. Not all transcripts will need to be examined in depth at this stage.
Identifying a Framework	This stage is focused on organising data in a manageable yet meaningful way for later examination in the mapping and interpretation stage. This step is informed by a priori and emergent issues arising from the familiarisation stage. This stage involves continual reflection and refinement to identify categories fitting the research question. Importantly, this stage does not produce themes, but rather thematic categories.
Indexing	This stage organises the transcripts into the thematic categories identified in the previous stage. The framework is systematically applied to each transcript.
Charting	This stage organises data into a manageable format by summarising the indexed data in each category, in order to facilitate data analysis.
Mapping and Interpretation	This stage focuses on understanding the data by pulling together key characteristics to view it as a whole. This step is about identifying patterns and sharing your own interpretation of the data based on the research question. This could be presented visually or as a narrative.

The lead researcher completed familiarisation with all interview transcripts to reflect on the range of the dataset, with data immersion conducted via reading the transcripts, listening to audio recordings, and re-reading the reflective log (Appendix C). Familiarisation notes were completed throughout this phase (Appendix D), contributing to the development of an initial framework which remained close to the interview schedule. The framework was piloted on five interview transcripts capturing different genders, ethnicities, and ages, and was iteratively modified to ensure all categories were captured. Upon determining the final framework, charts were constructed from this

to develop a picture of the data (Appendix E), with direct quotes charted due to the manageable dataset, ensuring the participant voice remained central. Mapping and interpretation utilised these charts in which acceptability was explored within and between participants. See Appendix F for an example of the audit process. To assist this process, NVivo software (Jackson & Bazeley, 2019) was used, as it provided a transparent audit trail from raw data to interpretation due to FA readily being integrated within this software.

Quality Assurance. Reliability, validity, and reflexivity were important requisites to ensure the lead researcher had a consistent and transparent approach, to provide reproducible research (Gale et al., 2013). Thus, the lead researcher was guided by Long et al.'s (2020) adapted Critical Appraisal Skills Programme (CASP, UK, 2018) qualitative appraisal tool and the Consolidated Criteria for Reporting Qualitative Research (COREQ, Tong et al., 2007) when designing, conducting, and disseminating the research. The lead researcher assessed their own work against the different criteria of the CASP (2008) and COREQ (Tong et al., 2007) to ensure they either nullified or reduced the impact of biases and to prevent poor reporting standards.

Lead researcher assumptions, preconceptions, and worldview was reported via a reflective log and reflexive statement exploring the impact of these on the research (Appendix C and G, Malterud, 2001). Validity was enhanced through the lead researcher ensuring they systematically used original data in interpretative discussion, maintaining transparency relative to how interpretations were derived (Gale et al., 2013). Furthermore, the lead researcher obtained respondent validation by sharing early interpretations with the interview sample to assess accuracy and refine the interpretation.

Recruitment Strategy and Procedure

Enrolling the MHST

The lead researcher attended an MHST meeting to advertise the research project; they agreed to send information and consent forms (Appendix H and I) to schools requesting the workshop. Two primary and four secondary schools returned signed Headteacher consent forms and sent survey opt-out forms to parents/caregivers (Appendix J). Parents/caregivers could opt their child out by returning a signed form to the lead researcher; only one parent requested this. One school later cancelled the sleep workshop for circumstances outside of EMHP control resulting in five schools partaking. Prior to the workshop, the lead researcher collected contact details of the Headteacher and School Safeguarding Officer should any issues have arisen.

Sleep Workshop Survey

Recruitment and sampling strategy was guided by Onwuegbuzie and Leech's (2007) framework with cluster/voluntary response sampling utilised for the survey. On attending the workshop, the lead researcher explained the project and their rights in participating; they were also offered information leaflets for further information (Appendix K and L). Participants were given time to ask questions to ensure consent was fully informed. Participants were then invited to enrol in the online survey via Slido on their mobile phones or on paper with consent requested (Appendix A). Once they completed part 1 (Appendix A) the EMHP delivered the workshop as per usual practice. Post-workshop, participants were asked to complete part 2 (Appendix A), with paper copies placed in the lead researchers lock box at the end of the workshop. Fifty-one paper surveys were then transferred onto a digital file, with 20% cross-checked by an EMHP to ensure accuracy. Once transferred and checked, paper copies were destroyed.

Semi-Structured Interviews

Post-workshop, the lead researcher advertised the semi-structured interview, sharing the rationale, remit of participation, and reimbursement (£10). They also

explained requiring a representative group to ensure age, gender, and ethnicity were proportionate between sample and school population, explaining why not all volunteers may be selected. Participants expressing interest were provided with participant and parent/caregiver advertisements, information sheets, and consent forms (Appendix M, N, O, P, and Q respectively). Participants were requested to return the signed forms within two weeks of attending the workshop to ensure interviews were conducted shortly after the workshop to aid recall.

On receiving a signed consent form, the lead researcher arranged a telephone call with the participant and their parent/caregiver to confirm inclusion criteria and ensure consent was fully informed and obtained. The lead researcher provided a two-week timeframe in which they would contact the parent/caregiver and participant about selection, as the lead researcher intended to utilise purposive stratified sampling to create a representative sample to make internal statistical generalisations (Onwuegbuzie & Leech, 2007). However, due to recruitment difficulties, voluntary response sampling was used, with all consenting participants interviewed.

Interviews took place online via Microsoft Teams and were audio-recorded for transcription and analysis. The lead researcher ensured a parent/caregiver was available during the interview should any issues have arisen; none were identified. During contact, participants were reminded of their right to withdraw any time up to data analysis; none requested withdrawal.

Participants and parents/caregivers were also asked for consent to be contacted post-interview to share qualitative interpretations of the data and gather feedback. All consented, with five providing feedback (Appendix R). All recordings were deleted after data analysis was complete, with transcripts anonymised and stored in line with University of Sheffield data management procedures.

Ethical Considerations

Ethical approval was obtained from the Health Research Authority (Registration number: 322494) and the University of Sheffield (Registration number: 045578) (Appendix S). All participants, schools, and parents/caregivers were provided with information sheets with consent obtained. All identifiable participant details were omitted to maintain confidentiality, and data was processed and stored in compliance with data protection policies. Any safeguarding or clinical risk issues would have been passed to relevant parties depending on the issue, and in accordance with safeguarding procedures. This project had £600 of funding for travel, resources, and interview reimbursement.

To support the projects development, the lead researcher collaborated with two key developers of the Sleep Workshop (qualified EMHPs). They also consulted with a local non-profit education provider working with 16–18-year-olds, and a Wellbeing Champions group (ages 12-15) from secondary schools in the locality. Feedback was used to ensure participant material was developmentally appropriate and engaging, and to ensure data collection and recruitment methods were acceptable. For example, after consultation with the Wellbeing Champions Group, participant information sheets were identified as too lengthy at five pages, and thus were shortened to three pages via simplifying language, excluding some information (whilst still adhered to ethical approval requirements), and breaking it down into more sections to make the information 'more digestible'.

Results

Participants

Survey

Four hundred and six adolescents aged 10-14 years (249 females, 157 males), enrolled across five UK-based schools attended the sleep workshop in groups of 30-60.

This age range captures young people experiencing puberty, and thus a shift in sleep behaviours and increased psychosocial pressures (Crowley et al., 2018).

Of the 406 workshop recipients, 326 (age range = 10-14, M = 12.22, SD ± 1.22) completed the survey. Thus, attrition rate was 19.7% with adolescents either not opting-in (*n* = 10) or not providing a complete data set (*n* = 70). Whilst multiple genders, ethnicities, and schools were represented (Table 2), a large proportion identified as female (61.1%), white (75.5%), and attended a comprehensive secondary (44.5%). See Table 2 for full sample demographics.

Table 2

Sample Demographics Summary

Sample Characteristic		**Survey N (Proportion, %)**	**Workshop recipient N (Proportion, %)**
Gender	Female	199 (61.1)	249 (61.3)
	Male	109 (33.4)	157 (38.7)
	Non-binary	5 (1.5)	0 (0)
	Prefer to Self-Identify	11 (3.4)	0 (0)
	Prefer not to say	2 (0.6)	0 (0)
Age	10	30 (9.2)	30 (7.5)
	11	68 (20.9)	83 (20.5)
	12	83 (25.5)	114 (28.0)
	13	89 (27.4)	117 (28.8)
	14	56 (17.2)	62 (15.2)
Ethnicity	White	246 (75.5)	305 (75.1)
	Black	2 (0.6)	4 (1.0)
	Mixed Heritage	27 (8.3)	35 (8.6)
	Asian/Asian British	41 (12.6)	47 (11.6)
	Other	10 (3.1)	15 (3.7)
School Type	Grammar (secondary)	128 (39.3)	150 (37.0)
	Free/Comprehensive (secondary)	145 (44.5)	192 (47.3)
	Faith (primary)	27 (8.3)	33 (8.1)

Free (Primary)	26 (7.9)	31 (7.6)

Interview

Twenty-five survey participants and their parents/caregivers submitted signed consent forms to partake in the semi-structured interview. Eighteen (age range = 10-13, M = 11.67, SD ± 0.97) engaged in the briefing call and interview (seven did not respond for unknown reasons). Participant demographics can be found in Table 3. Interviews took place 17-50 days post-workshop, lasting an average of 27 minutes (SD ± 4 minutes).

Table 3

Participant Demographics

Demographic		**N**
Age	Range	10 – 13
	Mean	11.67
	Standard Deviation	±0.97
Gender	Male	5
	Female	13
Ethnicity	Asian	1
	Other	1
	White	16
School type	Grammar Secondary	6
	Comprehensive Secondary	8
	Primary	3
	Religious primary	1

Eighteen participants met the saturation criterion (themes were exemplified and repeated in the data (Saunders et al., 2018)) and aligned with existing literature; other school-based and health promotion studies utilised interview samples of *n* = 12-19 (Levenson et al., 2021; McCrory et al. 2021; Murphy & Gardner, 2019; Pavlova et al., 2020).

Survey Results

Power

To determine minimum sample size required for statistical analysis an a priori power analysis was conducted using G*Power version 3.1.9.7 (Faul et al., 2007). The parameters of 80% power at a significance criterion of α = .05 were set to identify a medium effect size. The minimum sample required was $n = 89$ for multiple regressions.

Establishing Need

Sample need was assessed via ISI scores on the survey. Two hundred and five participants (62.9%) scored above clinical threshold on the ISI (≥9, Chung et al., 2011), with 145 scoring in a range indicating subthreshold insomnia (9-14), 55 moderate insomnia (15-21) and five severe insomnia (>21) (Morin, 1993). Total sample mean score was also above threshold ($M = 10.46$, $SD \pm 4.66$, range 0-28), indicating a need for sleep support.

Acceptability

To calculate average acceptability score, intention to change was converted (divided by five) to ensure each TFA domain was of equal weighting; 6/7 domains were measured on a 1-10 Likert scale, whilst intention to change was a 5-50 Likert scale (see Table 4). After conversion, intention to change and perceived sleep knowledge scores were averaged to reflect the perceived effectiveness construct.

Table 4

Pre- and Post-workshop participant sleep knowledge and intention scores

			Pre			**Post**		
	Min score	Max score	Mean	SD	Range	Mean	SD	Range
Intention to Change	5	50	32.08	8.63	5-50	34.25	9.34	5-50
Perceived Sleep Knowledge	1	10	6.52	2.21	1-10	7.84	2.14	1-10

Relative to the acceptability threshold employed, despite 80.3% of workshop participants engaging in the survey, overall acceptability was determined to be at amber level scoring an average of 7.36/10 (±0.51) across the domains of acceptability (see Table 5). Participants identified workshop burden was the least acceptable element, whilst intervention coherence was the most acceptable element.

Table 5

Descriptive Statistics of Acceptability

Construct	**Mean Score (/10)**	**Standard Deviation**
Affective attitude	7.92	1.91
Burden	6.60	2.33
Ethicality	7.14	2.17
Intervention coherence	8.09	1.96
Opportunity costs	7.39	2.02
Perceived effectiveness	7.35	2.01
Self-efficacy	7.07	2.56

Effectiveness

Two-tailed paired sample t-tests found Perceived Sleep Knowledge significantly improved pre-post-workshop ($t(324) = 7.61$, $p < .001$), and Intention to Change also significantly improved pre-post-workshop ($t(325) = 3.05$, $p = .002$). See Table 4.

Mediators of Acceptability and Effectiveness

Prior to all analyses, data was checked against regression assumptions; homoscedasticity, independence, normality, and linearity, all of which were met (see Appendix T for an example). The first multiple regression had Post-Workshop Perceived Sleep Knowledge as the DV, and IVs of gender, ethnicity, age, pre-workshop perceived sleep knowledge, sleep difficulties, and wellbeing. See Table 6 for regression results. The model did not significantly explain the variance in post-workshop Perceived Sleep

Knowledge (F(12,312) = .886, p = .562), explaining only 0.4% of the variance (*adj.* R^2 = .004), with no significant individual predictors. Due to concerns with small sample sizes, ethnicity and gender categories were collapsed into white/other, and female/male/other; the model was not significant (F(8,316) = .933, p = .489), with no significant individual predictors (see Appendix U for secondary analyses).

Table 6

Summary of Multiple Regression Analysis for Variables Predicting Sleep Knowledge

Variable	B	SE	β	*P Value*
Pre-workshop sleep knowledge	-.005	.059	-.005	.929
Age	.012	.101	.007	.908
Female	Reference			
Male	-.422	.273	-.093	.122
Non-binary	-.204	1.022	-.012	.842
Prefer not to say	.803	.801	.058	.317
Prefer to self-identify	.263	.978	.015	.788
White	Reference			
Asian	.155	.379	.024	.683
Mixed	.428	.469	.053	.361
Black	-1.911	1.538	-.070	.309
Other	.756	.743	.058	.215
Sleep Difficulties	-.026	.030	-.057	.383
General Wellbeing	-.000	.029	-.001	.994

Note. Adj. R^2 = .004.

The second multiple regression had Post-Workshop Intention to Change as the DV, and IVs of gender, ethnicity, age, pre-workshop Intention to Change, sleep difficulties, and wellbeing. See Table 7 for regression results. The model did not significantly explain variance in post-workshop Intention to Change (F(12,313) = .573, p = .863), explaining only 1.6% of the variance (*adj.* R^2 = .016), with no significant

individual predictors. Again, due to sample size concerns, ethnicity and gender categories were collapsed; the model was not significant ($F(8,317) = .563$, p = .808), with no significant individual predictors (see Appendix U).

Table 7

Summary of Multiple Regression Analysis for Variables Predicting Intention to Change

Variable	**B**	**SE**	β	***P Value***
Pre-workshop Intention to change	-.046	.071	-.043	.515
Age	-.144	.442	-.019	.745
Female	Reference			
Male	-1.331	1.205	-.067	.270
Non-binary	-.165	4.494	-.002	.971
Prefer not to say	2.739	3.501	.045	.435
Prefer to self-identify	5.125	4.320	.068	.236
White	Reference			
Asian	-1.335	1.667	-.046	.424
Mixed	1.987	2.065	.057	.337
Black	-4.618	6.755	-.039	.840
Other	-.626	3.095	-.012	.495
Sleep Difficulties	-.005	.131	.003	.969
General Wellbeing	.149	.135	.082	.271

Note. Adj. $R^2 = .016$.

The final multiple regression had Total Acceptability Score as the DV, and gender, ethnicity, age, sleep difficulties, and wellbeing as IVs. See Table 8 for regression results. The model significantly explained variance in Acceptability ($F(11,314) = 3.349$, p < .001), explaining 7.4% (*adj.* $R^2 = .074$). Gender (specifically the Prefer to Self-identify category) was a significant individual predictor ($t(314) = 2.308$, $p = .022$), however due to the large standard error (Table 8), this was not a reliable finding.

However, wellbeing was also found to be a significant individual predictor, ($t(314) = -3.226$, $p = .001$), with an inverse relationship: as wellbeing scores increased by 1, acceptability scores decreased by .208 (Table 8). To check whether sample size impacted the results, ethnicity and gender categories were collapsed again; the model remained significant ($F(8,317) = 3.703$, $p < .001$), and wellbeing became the only significant individual predictor ($t(318) = -3.382$, $p < .001$) (see Appendix U).

Table 8

Summary of Multiple Regression Analysis for Variables Predicting Acceptability

Variable	**B**	**SE**	β	***P Value***
Age	-.149	.884	-.009	.866
Female	Reference			
Male	1.467	2.375	.035	.537
Non-binary	-5.578	8.976	-.035	.535
Prefer not to say	5.855	7.018	.046	.405
Prefer to self-identify	19.802	8.579	.124*	.022
White	Reference			
Asian	-4.205	3.334	-.070	.208
Mixed	6.940	4.125	.094	.093
Black	-10.137	6.180	-.089	.864
Other	-2.311	13.531	-.009	.102
Sleep Difficulties	-.222	.263	-.053	.400
General Wellbeing	-.794	.246	-.208**	.001

Note. Adj. $R^2 = .074$. *$p = .022$, **$p = .001$

Qualitative Results

Overall participants identified the sleep workshop as acceptable, with each TFA domain (Sekhon et al., 2017) emerging from the analysis, resulting in seven themes and 23 subthemes (see Table 9 and Appendices D-F for further detail). Five participants

provided feedback on the interpretation (Appendix R), all reporting their views were represented with no amendments requested.

Table 9

Framework Analysis, Including Frequency of Themes

Theme	Subtheme	Frequency	Participant Quotes
Affective Attitude; Appreciative or Ambivalent	Appreciative of its difference	6	"I think it was like it was quite different to normal school day cause normally like on that day we would have just gone to PE or something and done like a lesson whereas it was something quite different and I was quite excited about it." (P6)
	Positive feelings before, during, after	15	"I felt good after I've, after we did it. And I felt, excited to do it" (P12) "Probably a bit curious like to understand like know what was going on with it. And to learn bit more about sleep as well." (P17)
	Ambivalent; nothing out of the ordinary	8	"I didn't feel excited or bored. I felt OK" (P8) "So I just, I was like, I don't really know, I just found it normal." (P10)
Burden; Balanced and Interactive	Balanced length and pace	17	"um, I think that Umm, that they weren't like talking too much or like overloading us with lots of information. So I kind of was like, I could listen a bit better so it wasn't like too much information coming at once." (P1)
	Interaction and activity	6	"It was like interactive, yeah. And we would talk to each other about sleep and not just. Not just well, with other groups and forms that we do for school." (P11)
	Understandable	4	"No, it's perfectly fine. I understood it all." (P14)

Ethicality; Of Personal Importance	Benefits of sleep and consequences of not having enough	16	“Well, I think sleeps really important. Just so then. Like I said that you can get ready for the day and the next day and and you'll be like ready to do different things” (P1)
	Parents and friends are influential	14	“Like 5 minutes before I got to bed, my mum will send me up and I'll like brush my teeth, clean my face, and then I'll come to bed.” (P15) “I'm just sometimes I have friends over and we just like, stay up quite a lot. We don't have to get up early. So like we don't really bother what time it is.” (P9).
	Importance is demonstrated by…	9	“Well, sometimes I read before I go to bed because it kind of just like helps my eyes get tired. So that then I can fall asleep easier.” (P6)
	The value of sleep fluctuates	6	“I think it's quite important, but it depends on what you're doing, like if you're doing something the next day. It's like. You got school the next day. Then it is important. But if you just relaxing the next day, you're not doing anything then not massively important.” (P7)
Intervention Coherence; Misunderstanding vs Clarity	Lacking Clarity	6	“Yeah, you explained a bit of it. You're saying that it was for more research into young people sleeping. And well, to be honest, I'll probably forgotten what you said to it. It would have been along those lines.” (P11)

	Teens need support for their sleep	11	“Umm well, some people go to bed really late and then they're like, get tired and seem sleepy. And well, I think you were like telling us that we should sleep more and it how important it actually is.” (P10)
Opportunity Costs; Wanted or Not	Preferred it to other activity	9	“I think sleep would definitely be like really important. Like one of the top things.” (P4)
	Indifferent to engaging	5	“I don't really know because I see sleep is important, but then there's like other stuff that's like like important, like the same importance as sleep like health and stuff. I would like, prefer health.” (P15)
Perceived Effectiveness; A Spectrum	Sleep knowledge: building, reinforcing, or just forgetting?	16	“There was quite a bit I didn’t know, although I've probably already forgotten.” (P5) “But I realised why I need to come off devices more and I've realised that I need to start doing this before bed” (P16)
	Encouraging reflection promotes its importance	14	“Umm I think I think it's a bit more important and I think I understand it a bit better and like, I know things I need to do that would give me a good night sleep. Like I didn’t realise until like we were talking, that like every time I get a good sleep it’s because like, I'm tired and I'm worn out from doing something.” (P11)

	Change is encouraged but not always actioned	16	“Quite a bit actually. Like if I'm gonna go and like my laptop or something. Normally I would have just kept it on really bright. Now I turn the brightness down quite a bit cause of the thing that you said about the blue light.” (P6) “Umm, like I’ve thought about it, because sometimes I have missed the bus and like it’s embarrassing, because like, I knew I should have slept more. But like I haven’t changed really.” (P11)
	To recommend, or not to recommend?	14	“The workshop would be helpful because like it might help them understand more about sleep and then they are like, so this might be how I'm not sleeping well and then they might have options on how they can either get a better sleep or something like that.” (P8).
	More is needed for it to be effective	9	“I feel like it would be like good in like the school, but then to have more like information offered, like after school if you want it.” (P5)
Self-efficacy; Encouraging and Accessible	External Facilitators are the key ingredient	18	“I did think that it was good because like if you hear it from someone who knows quite a lot and works in it it would be a bit more helpful because if it it's like a teacher like they might not know as much or know as good knowledge.” (P8)
	The impact of group size and setting	17	“I feel like I would prefer it in smaller groups…. You can focus more, I think.” (P5)

	Interactivity is necessary to partake well	12	“Maybe like you could like do some more activities because then it’s less like sitting around and just listening, you get a bit like fidgety and not concentrating as well. And like when you do activities you like, just like moving around and stuff.” (P9)
	School settings are more encouraging and accessible	16	“I think it's good to do it. I think it's good to do it just in school. Some people might not want to do it, but it's also some good things to learn.” (P13)

Affective Attitude

Fifteen participants expressed positive feelings, identifying the workshop was of interest to them and excitement and curiosity about attending. Interestingly six participants who reported a positive attitude also linked this to their preference for the workshop in place of their school curriculum. These participants spoke of how the workshops difference increased their interest and its value. Whilst feeling positive was relatively common, six participants reported some ambivalence towards partaking, with two participants expressing positivity after initial ambivalence.

Burden

Most participants reported the workshop to not be too effortful or burdensome, appreciating the length, content, and pace. Seventeen participants reflected on these elements being important, describing the length was enough relative to the information they could absorb without being overwhelmed. Workshop interactivity was also identified as important relative to burden, with six participants expressing how the activities, such as videos, surveys, and peer discussions, enabled them to stay focused without it being effortful. It was noted during mapping and interpretation workshop burden was closely linked to self-efficacy, with interactivity also identified as a facilitator/barrier to partaking.

Ethicality

Many participants expressed a strong sense of sleep being valuable, reflecting its importance relative to their mood, activity, schoolwork, and leaving them feeling recharged and energised. Sleep being valued was also reflected in nine participants' regular use of sleep aids and adhering to a bedtime routine. Fourteen participants referenced their parents/caregivers contributing to this attitude, describing how they set clear boundaries around activities and sleep routines. Two participants did however describe these boundaries becoming looser as they have aged. Whilst most participants

referenced sleep as important, six expressed its value fluctuated dependent on the next day's activity, and on friends. Interestingly this view was largely held by the 13-year-olds.

Intervention Coherence

Relative to participants understanding the workshop and its aims, six reported a lack of clarity, expressing uncertainty about why it was being delivered and how it aimed to support them. Interestingly, two participants reported uncertainty at the beginning of the workshop, but by the end felt they had a good understanding of the workshops aims. This was alongside a further nine participants who understood from the beginning and reflected teenagers needed more information and support with sleep.

Opportunity Costs

Nine participants expressed a preference for the workshop, and five were indifferent. Those who felt they would benefit and didn't have to give up something of importance to do the workshop reported this view in the context of how they valued sleep. Some participants even spoke of wanting the workshop to be delivered sooner in schools due to the benefit it could have as they develop. For those expressing indifference, there wasn't an explicit negative reaction or feeling of loss by engaging, more a sense of passivity and that they wouldn't necessarily prioritise it.

Perceived Effectiveness

As one of the most evidenced themes, participants reported a range of experiences and responses to the workshop. Relative to improving knowledge, sixteen participants reported mix of outcomes, with some expressing forgetfulness to others being able to recount specific facts. Whilst there was a mixed outcome for knowledge, 14 participants consistently reported the workshop effectively increasing the value and importance of sleep, due to encouraging reflection on their sleep.

However, this increase in importance was not necessarily reflected in sleep behaviour change. Six participants reported on how the workshop did lead to change, but ten reported no change. For the workshop to become more effective, nine participants reflected on improvements, with the majority requesting further information to be incorporated, and some requesting follow-up sessions or information booklets. Despite mixed reports on overall effectiveness however, 10 participants said they would recommend the sleep workshop to friends.

Self-efficacy

A key subtheme was the importance and value of having an external facilitator; seventeen participants reported the EMHP increased their motivation to engage and enabled them to trust the information presented. Group size and setting were also reported to be important contributors to participation; whilst some reported enjoying the group size, some reflected large groups were distracting and a barrier to engaging. However, most participants agreed about the setting expressing its delivery in schools made it accessible for all, indicating a view all young people could benefit from sleep workshops.

Acceptability Summary

Promisingly, there was some alignment across the quantitative and qualitative data, with survey and interview participants identifying the workshop as moderately acceptable, as indicated by the amber rating and interviews. For example, both samples reflected a positive attitude towards the workshop, and feeling able to remain engaged, with the present of EMHPs central to this. In addition, the results suggest sleep is something both samples moderately valued, as they reported positively on the ethicality domain.

The data did not always align however, survey participants identified intervention coherence as the most acceptable domain to them, whilst interview participants

reported a mixed understanding. Interestingly burden also varied, with the survey sample indicating it was the least acceptable facet whilst the interview sample reflected positively on the pace, length, and content of the workshop. Furthermore, the perceived effectiveness of the workshop also widely varied. Whilst there was a significant improvement in sleep knowledge and behavioural intention across the wider survey sample, this was not necessarily reflected by the interview sample. Interview participants reported an increase in the value they placed on sleep and increased reflection on their sleep behaviours, but only a few indicated an increase in their knowledge and intention to change.

Discussion

This study aimed to examine the acceptability and effectiveness of an EMHP delivered Sleep Health Promotion Workshop for adolescents, as part of improving preventative and early intervention support (DoH & DoE, 2017). Relative to adolescent sleep needs, there was a high prevalence of difficulties reported by the sample, with two thirds scoring above the clinical threshold for insomnia. Interestingly, the prevalence of issues was far higher than cited in recent literature; in a longitudinal UK study they identified a third of children aged 7-16 experienced difficulties with sleep ≥3 times a week (NHS Digital, 2022).

Whilst this study did not explore causation of sleep difficulties, sample age range may have contributed, as participants are within a biopsychosocial development period where they begin to assimilate family, peer, and cultural norms and attitudes towards behaviours (Shure, 2003). Whilst the longitudinal survey (NHS Digital, 2022) included 10-14-year-olds, their survey spanned a wider age range potentially moderating the experiences of 10–14-year-olds, as they represented only a proportion of the national data. Furthermore, the longitudinal survey only asked three questions on sleep via a survey completed at home, whereas this study utilised an established and validated

measure to explore sleep issues within a class setting in a specific locality. The way in which sleep issues are measured, the sociocultural context, and way in which they are screened, may have led to differences.

Interestingly, neither sleep difficulties nor participant demographics were significant factors as to the effectiveness or acceptability of the workshop. Within the survey sample, the workshop significantly increased perceived sleep knowledge and intention to change. This may reflect a recognition by participants of their relatively poor sleep practises, with interview participants also reporting a high prevalence of poor sleep amongst their peers and identifying the workshop as helpful in increasing its value. Unlike the survey sample however, interview participants spoke of lack of change individually, likely due to voluntary bias; those interested in sleep and the interview may have been more likely to already be engaging in healthy sleep practises.

Whilst there were no specific demographic or sleep factors impacting acceptability, subjective wellbeing was identified as a significant contributor; higher subjective wellbeing correlated with decreased workshop acceptability. Evidence suggests sleep disturbances often precede reductions in subjective wellbeing and predict later mental health difficulties (Lovato & Gradisar, 2014; Solmi et al., 2022). Thus, participants reporting higher subjective wellbeing may also experience fewer sleep disturbances, reducing their need for preventative or early support. This may explain overall acceptability of the workshop being rated amber and burden being high. With a third of survey participants reporting no significant sleep issues, they may have felt the workshop required more effort. However, interview participants expressed the workshop to be appropriately burdensome with the length, content, and pace positively reviewed, and they also reported good sleep practises. This difference may have resulted from self-selection bias.

These quantitative results suggest whilst the workshop was largely acceptable and effective, it may be better targeted to those identifying issues with sleep and/or wellbeing. Nonetheless, it is important to acknowledge interview participants also expressed a preference towards the workshop over and above other school activities and reflected it was important for their age group. Furthermore, both samples reported the workshop's interactivity was highly supportive of remaining engaged regardless of sleep difficulties or a personal interest. Adolescents between 10-15 can sustain attention for 25-40 minutes, thus, interactivity may have supported their capacity to focus (Fortenbaugh et al., 2015). The importance of participant burden was also demonstrated by McCrory et al. (2023) in their adolescent sleep program; their shorter program derived from Illingworth et al.'s (2020) lengthier program was reported as more acceptable and effective.

Closely aligned to the perceived effort required, interview participants reported their ability to partake was high. They reported the workshop to be accessible and encouraging of their involvement, expressing facilitators of their engagement was its delivery in schools so everyone can be involved, and having group interactivity; evidence suggests adolescents learn effectively through peer activities and supporting each other (Race, 2020). Poignantly, all interview participants expressed the presence of the EMHP was key to their engagement and ability to partake, reflecting this made the information trustworthy.

The ability to evaluate incoming information from the world as accurate, reliable, and relevant, also known as epistemic trust, develops during adolescence (Fonagy & Allison, 2014). A recent systematic review identified in developing trust with a professional/healthcare system, adolescents prefer caregivers to be absent, as this provided more confidentiality (Hardin et al., 2021). Thus, the external delivery of the workshop likely enhanced this trust. Adolescents have also been found to place greater

emphasis on empathy and respect, compared to adults who place more value on technical competence (Hardin et al., 2021). As part of their training EMHPs are encouraged to focus on the development of therapeutic alliances and thus may have been experienced as more trustworthy by the sample.

Consistent with the significant improvement in perceived knowledge and behavioural intention found in the survey sample, some of the interview sample also reported the workshop to be effective in improving perceived sleep knowledge, and in enhancing its value. However, as in previous reviews, there was a mixed outcome relative to behaviour change (Blunden & Rigney, 2015); it appears the workshop predominantly supported adolescents to shift from pre-contemplative to contemplative states (Prochaska & DiClemente, 1986). The interview sample reflected this shift, with the majority acknowledging whilst sleep was important, the workshop functioned to increase awareness of its value leading to self-reflection.

For some interview participants, this shift to a contemplative state further progressed to preparation (intent to change) and action (active behavioural modification), expressing a range of changes from introducing a sleeping aid to changing their routine (Ajzen, 1991; Prochaska & DiClemente, 1986). Whilst this study cannot concretely conclude what facilitated these shifts, contributory factors are likely linked with the Ethicality and Affective Attitude TFA domains (Sekhon et al., 2017). The workshop appeared to align with most survey and interview participants values (Sekhon et al., 2017), with participants expressing a positive attitude towards sleep alongside expressing positivity towards engaging in the workshop (Sekhon et al., 2017). Furthermore, the interview sample reported parents/caregivers were a strong influence over these attitudes, with peer influence only beginning to be assimilated (Shure, 2003). Thus, with parents/caregivers influencing positive beliefs, norms, and attitudes of the

interview sample (Ajzen, 1991), for some this may have been enough to increase behavioural intention and change (Ajzen, 1991).

However, not all interview participants reported change, and more interestingly, whilst survey and interview participants alike reported valuing sleep, two thirds indicated regular sleep disturbances. There is the possibility that there were barriers to change unexplored in this study, potentially around a lack of perceived behavioural control (Ajzen, 1991). Or it may be that there are limitations around the ability of the ToPB to predict actual behaviour via attitudes, norms, and control. The ToPB has been argued to have excluded critical factors when exploring behaviour, such as unconscious cognitive influences (Sheeran et al., 2013) and emotions beyond anticipated outcomes (Conner et al., 2013). Nonetheless, systematic reviews have identified the ToPB accounts for a significant variability in health behaviour, with intention being the strongest predictor, and is presently one of the most evidenced models relative to predicting health behaviours (McEachan et al., 2011).

Strengths and Limitations

Relative to exploring the breadth and depth of adolescent sleep experiences, a mixed-methods approach was appropriate in capturing as many views as possible whilst enabling a comprehensive understanding of the workshop's acceptability. The involvement of adolescents/participants in the research design, respondent validation, quality appraisal, and reflective diaries, also enhances the validity of the outcome.

Importantly, the study also aimed to reflect in its sample the population the workshop is delivered to, with multiple school types, ages, genders, and ethnicities reflected in the quantitative data. However, this was unfortunately not achieved within the qualitative data, with a skew towards white females. Thus, caution should be taken when interpreting the qualitative outcome relative to other ethnicities and genders, as well as neurodiversity; this was not a factor explored in the study but with 15% of the

UK population identifying as neurodiverse this should be considered in future research (Health Education England, 2022). Due to the clear reporting of the study and use of structured materials, this study can be replicated with more diverse samples.

The skew towards certain sample demographics was likely driven by the sampling strategy. Despite attempting purposive stratified sampling for the interviews, the final sample was voluntary increasing the risk of bias. There were also some disparities in findings between the survey and interview sample. For example, relative to ethicality (Sekhon et al., 2017), it was clear interview participants already valued sleep and engaged in healthy sleep behaviours. Thus, they may have been more likely to want to share their views, which led to an increase in acceptability in the qualitative outcome, but only because of voluntary response bias.

A final important limitation to note is the lack of participant follow-up. Whilst the study sought to explore sleep behaviour change, it is unknown whether any survey participants shifted beyond contemplation as they only provided data at one timepoint, or whether interview participants maintained or actioned further change over time (Prochaska & DiClemente, 1986).

Clinical Implications and Future Directions

This study is the first of its kind to explore acceptability of an EMHP-delivered sleep workshop with recommendations it continue due to the sample finding it acceptable and effective, potentially shifting them from pre-contemplative to contemplative states of change (Prochaska & DiClemente, 1986). However, study replication is required to explore acceptability across a more diverse demographic relative to ethnicity, gender, and neurodiversity, alongside more explicitly exploring the cycle of change (Prochaska & DiClemente, 1986) relative to sleep behaviours. In addition, to improve the offering, whilst the workshop should retain its whole-school approach to maintain inclusivity, follow-up information should be offered, and a greater

effort should be made in encouraging young people to access individual support offered by the MHSTs when sleep concerns are identified.

Given the significant prevalence of sleep-related difficulties reported, it is recommended beyond the workshop sleep is much more proactively supported and assessed as many adolescents appear to fall within a pre-contemplative state (Prochaska & DiClemente, 1986). This is especially necessary relative to mental health support due to the reciprocal relationship between sleep and wellbeing (Lovato & Gradisar, 2014). As a transdiagnostic symptom (Vermeulen et al., 2021), for Clinical Psychologists and wider healthcare professionals, individual sleep behaviours and history should be assessed relative to the presenting difficulty. There is also the potential to incorporate a validated questionnaire such as the ISI (Morin, 1993) within assessment and symptom monitoring.

If sleep difficulties are identified, as per the current evidence-base a CBT approach could be offered individually (Blake et al., 2017). However, this study also supports a peer group offering as participants reported peer interactivity was supportive of engagement. A group-based intervention would also be able to challenge subjective norms (Ajzen, 1991) of poor sleep, alongside promoting developmentally appropriate autonomy in making behavioural choices (Casey et al., 2008). This would also serve to support the development of a trusted alliance between clinicians and adolescents; this study highlighted adolescents are more likely to trust an external facilitator.

However, relative to the samples age, whilst autonomy should be encouraged, adolescents reported parents/caregivers retained a high level of influence over their attitudes towards sleep and sleep behaviours. This study therefore recommends clinicians consider a family-based approach to support, potentially alongside the individual or peer-group offering. Bronfenbrenner's ecological systems theory (1977) highlights the significant influence systems around an adolescent has on their

psychosocial development, and with adult sleep difficulties increasing in approximately 10% of the population since the global pandemic (Mental Health Foundation, 2023; Partinen et al., 2021), parents/caregivers may need support to model healthy sleep practises to support their child.

Conclusion

Relative to the transformation agenda and aligning education and healthcare successfully, it appears workshops have an important role to play in the way of delivering early intervention support via healthcare in schools (DoH & DoE, 2017). The workshop was identified as moderately acceptable across a large sample of adolescents and was effective in increasing perceived sleep knowledge and intention to change. Adolescents identified the workshop to be accessible, engaging, and important relative to their value system. They reflected the workshop was successful relative to the content and delivery method, identifying the EMHP presence and interactivity of the workshop to be important aspects.

However, as there were inconsistencies across the survey and interview samples relative to burden and coherence, there are improvements to be made relative to the provision of information and with greater clarity as to its aims. Furthermore, EMHPs and wider healthcare professionals are recommended to be more proactive in encouraging adolescents to access further support relative to improving sleep behaviours. Further studies are now required to explore the acceptability across a more diverse adolescent demographic, as well as conducting follow-up studies to understand the impact of the workshop longer-term and the changes recommended from this study.

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Appendices

Appendix A: Sleep Workshop Survey

School Sleep Survey

Please Complete sections 1, 2, 3, 4, and 5 before the workshop

1. Consent *(please tick a box)*

I understand what this study is about, and how my information will be used. I have had time to think about the information and ask questions	☐Yes ☐No
I agree to take part in the study	☐Yes ☐No

2. About You

a) Please write your full name (First and Last name)

____

b) How old are you?

☐10 ☐11 ☐12 ☐13 ☐14 ☐15 ☐16

c) Which gender do you identify with?

☐Male

☐Female

☐Non-binary

☐Prefer to self-identify

☐Prefer not to say

d) We would now like you to tell us about your ethnic background. Are you:

☐Asian/Asian British

☐Black/African/Caribbean/Black British

☐White

☐Mixed heritage

☐Other

Please enter a 4-digit personal code so we can track your answers in case you want to withdraw. Enter a code you can remember but does not identify you e.g., your birthday.

____

3. What do you think about sleep?

Please circle how much you agree with each statement.

A) "Overall, I think getting good quality sleep every night is important"

Strongly Disagree 1 2 3 4 5 6 7 8 9 10 Strongly Agree

B) "People who are important to me think that I should be getting good quality sleep"

Strongly Disagree 1 2 3 4 5 6 7 8 9 10 Strongly Agree

C) "I am able to make positive changes to my sleep if I wanted to"

Strongly Disagree 1 2 3 4 5 6 7 8 9 10 Strongly Agree

D) "I will make positive changes to my sleep tonight"

Strongly Disagree 1 2 3 4 5 6 7 8 9 10 Strongly Agree

E) "I will seek support today to improve my sleep"

Strongly Disagree 1 2 3 4 5 6 7 8 9 10 Strongly Agree

F) How much do you know about getting a good night's sleep?

None at all 1 2 3 4 5 6 7 8 9 10 A lot

4. How is your general wellbeing?

Below are some statements about feelings and thoughts.

Please circle the number that best describes your experience of each over the ***last 2 weeks.***

	None of the time	Rarely	Some of the time	Often	All of the time
I've been feeling optimistic about the future	1	2	3	4	5
I've been feeling useful	1	2	3	4	5
I've been feeling relaxed	1	2	3	4	5
I've been dealing with problems well	1	2	3	4	5
I've been thinking clearly	1	2	3	4	5
I've been feeling close to other people	1	2	3	4	5
I've been able to make up my own mind about things	1	2	3	4	5

5. How is your sleep?

Please circle the word that describes you best from the last two weeks.

How much difficulty have you had in getting to sleep?	None	Mild	Moderate	Severe	Very Severe
How much difficulty have you had staying asleep?	None	Mild	Moderate	Severe	Very Severe
How much difficulty have you had with waking up too early?	None	Mild	Moderate	Severe	Very Severe
How happy/unhappy are you with your sleep?	Very happy	Happy	Somewhat Happy	Unhappy	Very Unhappy
Thinking about your sleep now, do others notice if it effects your quality of life?	Not at all	Noticed a little	Noticed sometimes	Noticed often	Noticed all the time
How often are worried about your sleep pattern?	Never	Rarely	Sometimes	Often	Always

How much do you think your sleep pattern impacts your daily functioning (e.g., daytime tiredness, mood, ability to do schoolwork/chores, concentration etc.)?	Not at all	A little	Somewhat	Quite a lot	A lot

PLEASE DO NOT COMPLETE THE FOLLOWING QUESTIONS UNTIL THE WORKSHOP HAS FINISHED.

6. What do you think about sleep?

Please circle how much you agree with each statement.

A) "Overall, I think getting good quality sleep every night is important"

Strongly Disagree 1 2 3 4 5 6 7 8 9 10 Strongly Agree

B) "People who are important to me think that I should be getting good quality sleep"

Strongly Disagree 1 2 3 4 5 6 7 8 9 10 Strongly Agree

C) "I am able to make positive changes to my sleep if I wanted to"

Strongly Disagree 1 2 3 4 5 6 7 8 9 10 Strongly Agree

D) "I will make positive changes to my sleep tonight"

Strongly Disagree 1 2 3 4 5 6 7 8 9 10 Strongly Agree

E) "I will seek support today to improve my sleep"

Strongly Disagree 1 2 3 4 5 6 7 8 9 10 Strongly Agree

F) How much do you know about getting a good night's sleep?

None at all 1 2 3 4 5 6 7 8 9 10 A lot

7. Workshop Feedback

Please circle your answers.

A) How did you feel about today's workshop?

Negative 1 2 3 4 5 6 7 8 9 10 Positive

B) How much effort did you have to use to take part in the workshop today?

Too much 1 2 3 4 5 6 7 8 9 10 None at all

C) Has this workshop changed how important sleep is for you?

Made it less important 1 2 3 4 5 6 7 8 9 10 Made it more important

D) Was the information in today's workshop easy to understand?

Not at all 1 2 3 4 5 6 7 8 9 10 It was very easy

E) How helpful, or unhelpful, was this workshop for you?

Not at all helpful 1 2 3 4 5 6 7 8 9 10 It was very helpful

F) How likely are you to recommend this workshop to a friend who wants help with their sleep?

Not at all likely 1 2 3 4 5 6 7 8 9 10 Very likely

G) What would be helpful to add to the workshop to make it even better?

____

____

PLEASE RETURN THIS FORM TO THE LEAD RESEARCHER

Appendix B: Interview Schedule

Introduction

Thank you for taking part in this study. Today, I am interested in finding out about your experience of the sleep workshop you took part in at school.

I will be asking you some questions about the workshop, including questions about how you felt about it, and how helpful you think it has been for you. I have sent you and your parent/guardian an information sheet about the research. Do you have any questions about this before we start the interview?

[Reconfirm written consent already provided, ask if there are any questions related to consent]

If you would like to pause the interview, or leave the interview at any time, please just let me know. If you find any of the questions difficult, or need them to be worded differently, please also let me know. If you would feel more comfortable to have an adult present, such as a member of your family, please let me know now.

[Give time for a response]

As it says in the consent form, today's interview will be audio recorded, but will be kept confidential (private) within the research team. We will then write out the recording in a report. This report will be anonymised so people won't know it is you in the study. However, if I was concerned about your safety, or about someone you know, I would need to share some information with another healthcare or educational professional. We would talk about this first if this happened. Do you have any questions before we start the interview?

[Give time for a response]

Demographic Information

How old are you?
Which gender do you identify with?
How would you describe your ethnicity? (Prompts: for example, Asian, White etc….)

Interview Schedule Order	Theoretical Framework of Acceptability Construct
How important is sleep to you? - *Prompt: why is this?*	Ethicality
What do you think helps you sleep?	
What do you think stops you from getting good sleep?	
How does sleep effect your general mood and/or wellbeing? - *Prompt: Why do you think this is?*	Ethicality
How did you feel about taking part in the sleep program? - *Prompt: did your feelings about the sleep program change before or after taking part?*	Affective Attitude
What did you understand about the purpose of the sleep program? - *Prompt: what did you think the sleep program was for? Why is it being done?*	Intervention Coherence
Tell me about what you learnt from the sleep program. - *Prompt: what do you remember the presenter talking about in the sessions? / What do you remember doing?*	Intervention Coherence
Was the program helpful in developing your knowledge of sleep? - *Prompt: yes/no answer, ask to expand why/what*	Perceived Effectiveness
Did the program change your attitude about sleep? - *Prompt: yes/no answer, ask to expand why*	Perceived Effectiveness
Were there any parts of the program that were less helpful, or difficult?	Perceived Effectiveness
How did you find the length of the program?	Burden
How did you find it being delivered by an EMHP/Mental Health Practitioner?	Burden
What do you think about it being delivered to large groups?	Burden
What did you think about doing the sleep program as part of the school curriculum?	Burden

- *Prompt: were there any helpful or not so helpful things about doing it in school?*	
If the program wasn't given, do you know what else you would have been doing with this time in PSCHE? - *If yes: please tell me about what these were. Was this more or less important than going to the sleep program?* - *If no: is there another topic that would have been more important to you to learn about in PSHE?*	Opportunity Costs
Tell me about any changes you might have made to your sleep since the program. - *Yes: what were those changes?* - *No: tell me about why that might have been.* *If mixed response about changes, ask both yes/no questions.*	Self-efficacy
Do you use any learnings or strategies from the sleep program today? - *Yes: what are they and why?* - *No: why do you think this is?*	Perceived Effectiveness
Have you, or your family and friends around you noticed any changes in your sleep and/or wellbeing since the program? - *Yes: what are they? Are they related to the workshop?* - *No: why might this be?*	Perceived Effectiveness
Was there anything that helped you to take part in the sleep program? - *Prompt: what helped make the program easier for you?*	Self-efficacy
Was there anything that made it difficult to take part in the sleep program? - *Prompt: what made the **program** more difficult for you?*	Self-efficacy
Would you recommend this program to a friend who was struggling with sleep? - *If yes: why?* - *If no: why not?* *Ask them to provide a number 0-10 again, as in the survey*	Perceived Effectiveness
Thinking about how young people are supported now with their sleep, what do you think is the most helpful thing? How do you think adults (e.g., teachers/nurses) should support young people?	

Is there anything else you would like to add that I may not have asked about today?	

End of Interview

Thank you for taking part in the interview today. I will be using your interview, and other young people's interviews to understand how young people might feel about this workshop, and whether it might be helpful to others. When I have collected enough interviews, I will look at some of the similarities and differences in your experiences, and I will write this up in a report.

I know we talked a bit about how you felt about things today. Now we have reached the end of the interview, do you feel OK to leave this interview, or are there important things you need to talk about? If you do leave this interview, but feel you need to talk to someone later, please speak with your caregiver and trusted education or healthcare staff present at your school.

Appendix C: Reflective Log Excerpts

P1:
Before: Noticing some nerves about this first interview, whilst I think the structure of it fits, and young people have said it makes sense, I have no idea about how this young person is going to engage or respond to the questions. I'm worried it might not flow properly, or they might not want to answer some of this. I need to make sure I spend a minute calming myself a little, I want to come across as calm and want to actively listen to what they have to say.

P2:
Before: I am noticing some negative feeling heading into this interview, I think because it has been cancelled so many times, I am trying not to get my hopes up in a way that the young person will turn up. I need to make sure this feeling doesn't seep into the interview and impact how I react to what they are saying.

P3:
After: I felt very relaxed during the interview. I noticed I was able to give the young person more space to speak because of this. I wonder if this is because she reminded me of a family member? She had some visible similarities to this family member and a similar way of conversing, and this made me feel like I wasn't necessarily in an interview but more a conversation. I think this allowed for more space to listen and to explore. I need to make sure in subsequent interviews I try and find this approach again, become a bit more comfortable with silence and asking questions in this open and exploratory manner.

P4:
Before: I notice I'm feeling a little deflated approaching this interview. I think because I sensed a lack of interest from parents during the consent call, I was wondering if the young person felt like this interview was supported by their parents. I sense I'm just doing the interview for 'the sake of it'. I realise this will likely impact how I ask questions and so I'm going to take a few minutes to reflect on why I'm doing this and how it might feel for this young person to take part.

P5:
After: I found this a difficult interview. I think I found it hard to keep the young person focused on the questions I was asking, and I noticed I was a little bit more rigid around the questions rather than being more exploratory as I was in other interviews. I'm not sure why this was, I'm wondering whether it was because of late evening and the potential impact of my mood. I also noticed parents would come in and out during the interview which didn't disturb the young person, but I sensed a feeling of frustration in me.

P6:
Before: I noticed I was looking forward to this interview, the young person’s parent had shown a keen interest in the topic, and the young person was chatty on the consent call.

After: I was aware of myself trying to put on a bit of a 'front', almost as a way of ensuring I showed the young person and their parent they could trust me to do this, I’m not sure why. As the interview started, I noticed I was drawn to this young person, they were engaging, open, and chatty, and I could feel myself moving away from the interview schedule at times. As I reread the transcript and listen to the audio, I notice I am feeling positive about this interview, there is a lot of content and rich information. My concern is not that I haven't let myself 'bathe' in this data enough, more that, have I given other interviews less attention and time than I needed to?

P7:
Before: sensing some lethargy as I approach this interview, I think it’s because I’ve done a few in a row now alongside placement and teaching. I need to make sure this doesn't impact how I ask the questions or the curiosity around their answers. Even writing this is making me more aware of the lethargy I feel. I think I need to remind myself of why it's important to capture as many voices as possible.

P8:
After: I was very aware of a parent being in the room the whole time. I found this interview difficult to transcribe as whilst the young person was able to share their opinion, they kept referring me to their parent to check what they thought. Whilst I wanted to give the young person the option to have the parent in the room or with them, and this young person took it, I noted I felt frustrated a little as I felt like I was having to navigate two opinions and the dynamic changed, I wonder whether I came across differently or whether I felt less able to access the young person’s voice?

P9:
After: During the interview I was feeling a little frustrated. I sensed the young person wasn't connected with me and was giving quite short, closed answers. I noticed how I was losing my sense of curiosity when she was responding to my questions, and I think there were a couple of times I could have shown more interest and asked her to give more information. I am wondering how valid this interview is relative to others, I noticed I was thinking, 'does she really think that about sleep?', 'was the intervention really OK?'.

P10:
Before: Feeling balanced and positive about going into this interview. I have already a talked a little with the young person on the consent call and I have a sense this person will be able to share their thoughts honestly and openly. Maybe the fact I have interviewed several females now also gives me a sense of comfort in this interview.

P11:

Before: I’m feeling nervous, why? perhaps because being in the schools during the survey I notice the males were perhaps less connected than the females (or was this some form of bias as well?), and I’m just uncertain about how this participant will engage in the interview. I also recognise I have some bias around age, thinking middle teens may be more opinionated, or perhaps more dismissive, I need to make sure this doesn't come into the interview, I need to recognise this young person has volunteered to do this and was engaged in the consent process - don't skip questions or let this feeling get in the way of engaging him in the interview.

P12:
Before: I think because the last interview I had went well, I feel confident about this one, I am going to try and refresh my memory of the questions though as there has been a gap. I wonder because I spoke with a male in the last interview, I feel more confident because this is a male again. I think I'll need to check in on this before I start to make sure I'm not swayed in any way by this during the interview and remember this is a different young person.

P13:
Before: As I approach this interview, I feel like I have a good balanced approach in how I’m going to ask questions and encourage the young people to share their opinions. I notice I’m calm and although I have the interview questions ready on screen, I don’t feel an urge to check through it before I start as I feel confident in what I’m asking. I will need to just make sure I don't become overconfident and miss questions or not be fully present in the young person’s response.

P14:
After: Felt calm during this interview. At times I noticed I was giving some leading questions because I noticed he was struggling to give more lengthy answers, I'm not sure if this was nerves on his part or more because he really didn't have much to say about the workshop or his sleep. It appears after a few questions this subsided though.

P15:
After: I noticed some anxiety before this interview and during it, I think it was because of her age. A 10-year-old seems very different to a 14-year-old in interview and I think I noticed I was more 'encouraging' and may have led her on some questions at times, not enough to invalidate her answers but I'm wondering about how impressionable I was on her compared to an older child?

P16:
Before: I am feeling a little tired approaching this interview. Hence a lack of a detailed diary entry. I worry this might affect the exploration in the interview, I think I need to remember how important it is for this young person’s voice to be heard and check in with how present I am with her during each response.

P17:
Before: I am looking forward to this interview, I notice I am recalling her parents comment of 'oh she won't stop talking, she's very opinionated', and this is really influencing my view of how this young person will be. I know sometimes when I am passionate about something I can lose focus a little bit so I will need to make sure to have the questions within my line of sight, so I don't lose track, but also allow enough space for the young person to voice their thoughts.

P18:
Before: I am looking forward to this interview, I don't know how to say this, but I think because I was hopeful for diversity in my sample I was excited to be able to have some representation of this within this upcoming interview, I have to be aware that whilst I might be interested in wider cultural aspects

around sleep, to make sure there is equity I need to make sure I approach the interview similarly as I have done with others whilst giving space for potential differences, just as I have done already.

Appendix D: Framework Analysis Familiarisation

Affective attitude

How an individual feels about the intervention

1. Feeling positive about what there is to learn
2. Felt neutral about doing it; no sense positive or negative feeling, sense of ambivalence about attending and taking part, lack of enthusiasm.
3. Positive feeling towards it being part of the school curriculum and delivered in schools.
4. Not feeling so bothered about it and feeling forced to go, sharing they would be unlikely to go if it was optional.
5. Having an external facilitator made it more interesting.
6. A mixture of excitement and nerves, participants wanted to do it, but didn't know what to expect.
7. The workshop was more enjoyable because it was in a group setting.
8. Doing it in large groups felt a bit overwhelming.
9. The positive feeling some showed towards the workshop mostly came from not having to engage in a normal school day.
10. A feeling of appreciation towards the intervention, sharing a sense of it being helpful and it being interesting
11. Felt it was good, identified they wanted more of these workshops.
12. Familiarity with the practitioner increased excitement because of previous positive experience.
13. Feeling unsure and uncertain about the workshop initially due to not knowing which friends would be involved.
14. Felt good about the workshop.
15. Disappointed it wasn't about actually sleeping, but then enjoying the workshop and saying it was good.
16. Some anticipatory excitement, this was driven by it being an external group and facilitator.
17. It was a new topic, looked forward to it.
18. Felt curious and intrigued by it before and during
19. Workshops haven't been delivered for some time so there was a buzz/interest in this.

Burden

The perceived amount of effort that is required to participate in the intervention.

1. The workshop was understandable which made it easy to participate, it wasn't seen as difficult or requiring too much to take part.
2. There was a lack of interactivity, this meant more effort was required to take part.
3. The pace was good, there was enough time to listen and talk which helped reduce the burden of taking part.
4. The length was identified as consistently good; it replicated normal lesson time, so it was felt the workshop didn't require additional effort, but then also it wasn't too crammed with content that it was hard to concentrate and remain engaged. Participants spoke of any more than an hour being too long and effortful, but less than an hour not enough time to feel engaged and therefore they would lack motivation to participate.

5. The mix of content and information made it understandable and engaging which helped participation.
6. Didn't require too much active participation, but then it also wasn't too passive that concentration became effortful.
7. The content was seen as more important relative to the effort required rather than the length, with activities like the survey and quiz, and discussions helping to reduce effort required.
8. Having an external practitioner helped participation because they came across as an expert which increased interest and participation.
9. Having it in a large group reduced the effort required to participate as it made the intervention less exposing and therefore overwhelming.
10. Large groups were felt to be helpful in participation due to having peer support.
11. The information wasn't overloading.
12. Interactivity was seen as an important component in being able to participate and the intervention being accessible, participants spoke of the videos and discussion supporting their concentration, and the fact it didn’t have a heavy focus on any written activities weas helpful for participation.
13. Having it during the school day reduced the effort required to take part.
14. The placement of facts and activities helped to make it more interesting and engaging, it wasn't hard to keep focused.

Ethicality

The extent to which the intervention has a good fit with an individual’s value system.

1. Sleep was identified as important because of its contribution to daytime activities, with school cited as a key activity it helps with
2. Young people identified their parents as key contributors to their attitude towards sleep, talking a lot about parents modelling positive sleep behaviours which make them want to do the same.
3. Sleep impacts my mood, with my alertness, energy, and grumpiness connected to good and bad sleep.
4. Sleep is linked to mental health so it's important.
5. Sense of young people valuing sleep and having a personal interest in it because of previous experiences of poor sleep and the impact this had on their mood and daytime.
6. Routine was seen as the foundation of good sleep and a normal thing to have.
7. Already came to the intervention with a sense of sleep being important and a priority in their lives.
8. Sleep is only as important as what's happening the next day, such as school or sport, but not otherwise.
9. mixed messages from family about sleep
10. Parents, siblings, and peers also think it's important and are influential, this makes me think it’s important.
11. Ambivalence about the value of sleep, uncertainty about using helpful activities to sleep.
12. Parents set boundaries around sleep which gives them a sense it is something of value.
13. Whilst young people noticed their peers having poor sleep and the sense this was the norm, they were unwavering in their sense of its importance.
14. Mixed views about how important parents are in their attitude towards sleep.
15. Sleep isn't a priority, relationships and friendships are.
16. Friendships and playing with siblings are more valued, sleep isn't as important.
17. parental support around sleep and noticing poor sleep identified as important, which helps the young person recognise its value.
18. Already demonstrating good ways to get to sleep because it's important.

Intervention coherence

The extent to which the participant understands the intervention and how it works.

1. It was clear that sleep changes in adolescence and that's why the sleep workshop has been offered to help improve it.
2. The need for a sleep workshop was mostly understood in the context of school getting harder and being given more work.
3. Recognition of teenagers and peers getting poor sleep and reflecting a workshop is a way of getting some support for this.
4. Understood it in the context of sleep being important to study and grow, and teenagers lacking sleep.
5. Misunderstood its purpose, thought they were going to use it to nap.
6. Mixed understanding of why the workshop was delivered, sense that sleep is important for young people, but also thought it was more about assessing their sleep.
7. Unable to recall why the workshop was being delivered, and lack of awareness around adolescent sleep needs and difficulties.
8. It was clear that sleep changes in adolescence and that's why the sleep workshop has been offered to help us learn about it and make changes to improve it.
9. The information / content was understandable.
10. I know the workshop was to encourage better sleep, but I didn't make changes because of the workshop, only because of personal experience.

Opportunity costs

The extent to which benefits, profits or values must be given up to engage in the intervention

1. Initially it felt like giving up something I would have enjoyed, but it was worth it in the end.
2. Feels like something we must do, but we wouldn't do it out of choice.
3. It would need to be mandatory, as it is unlikely people would opt to do it unless it was a specific lesson to them, they wanted to miss.
4. Whilst there wasn't a loss in terms of what it replaced in school, there is a preference for more of a link to mental health and wellbeing than sleep on its own.
5. Pleased and excited to be missing school and doing the workshop instead.
6. sleep workshops should be offered earlier in life, preference for it over other health education.
7. No sense of having to give up something else important at school, but recognition there may be other things of equal importance that may/may not be preferable to a sleep workshop
8. Whilst helpful, there was a sense it was not enough to replace school or other potential workshops.
9. Sleep was identified as a leading topic they wanted to learn about, and they preferred it to school and other workshops.
10. Best to do it in schools so it's accessible to everyone.
11. It fit well in the school curriculum, good to do it like PSHE.

Perceived effectiveness

The extent to which the intervention is perceived as likely to achieve its purpose.

1. The workshop was helpful in improving knowledge about the function of sleep.
2. The workshop only somewhat helped make positive changes to sleep; reflecting on personal experience is more motivating.

3. If daytime activity was being impacted by sleep this would more likely lead to change, not the workshop.
4. Would recommend to a friend to support them in building their understanding of sleep.
5. Having follow up work or sessions would be more helpful in making change.
6. It opened more interest and questions about sleep, wanting to learn more.
7. It would be more helpful to have follow up information and for parents to have the same information.
8. Although already important, having the knowledge as to why it's important was helpful and knowledge was built on and retained during the session.
9. Changing sleep still feels out of reach.
10. Not sure it would help those really struggling to make change.
11. Didn't retain information but did it did support a shift in attitude/importance.
12. Didn't attempt to make changes as sleep was already good, reflected if sleep was bad, it would have encouraged change.
13. Lack of knowledge retention.
14. The importance of sleep and its positive effects was increased, and it encouraged reflection on own sleep.
15. Helped shift bedtime earlier.
16. Would recommend for someone who was struggling with sleep as they felt it would support them with sleep knowledge and change.
17. Reinforced and built confidence in the knowledge they already had.
18. Having an external facilitator (healthcare professional) made the information more important and trustworthy, and more likely to make change.
19. Changes were made, even small ones, related to recognising sleeps importance, however they reflected parental boundaries were important in doing this.
20. Struggling to recall learning or knowledge from the workshop, feeling that there wasn't enough content, needing supportive information given to them on paper.
21. Lack of change because doesn't feel like it's in their control.
22. The facts presented challenged some misconceptions about sleep in a helpful way.
23. It could have done with some more facts about how to sleep.
24. I'd still be nervous to reach out for help.

Self-efficacy

The participant's confidence that they can perform the behaviour(s) required to participate in the intervention.

1. There was too much sitting down.
2. Having in in school enhanced ability to take part, it was easier to access.
3. Large groups are distracting, it was difficult to remain engaged and partake in the workshop.
4. No sense of there being barriers to being able to engage in the workshop.
5. It was pitched at the right level for young teenagers, felt it was the right level for engagement.
6. The external facilitator made it easier to engage because they were interesting and made it more important.
7. Larger groups promoted ability to engage.
8. School is more relaxed than in other places which helped facilitate taking part.
9. Larger groups would make it more hectic because there would be too many opinions and therefore harder to take part; keep it to 1-2 class sizes as it was.
10. Struggled at times to engage due to being in peer group and friends being distracting.
11. Activities, facts, diagrams, all helped to encourage partaking.
12. Having it in a larger class made it more difficult to contribute because they weren't as comfortable, fear of others judging.

13. Needs more interactivity, lack of this made it harder to take part.
14. Having it in the classroom is less helpful as it feels like a normal lesson and doesn't encourage participation.
15. Where they sat impacted how able they felt to take part, so environment/set up matters

Other:

1. school and homework can get in the way of sleep.
2. worrying gets in the way of sleep.

Appendix E: Framework Analysis Charts

Participant chart 1: The theme Affective Attitude, Appreciative or Ambivalent, was later mapped from this chart

Participant	Appreciative of its difference	Positive Feelings Before, During, After	Ambivalent; nothing out of the ordinary
1	"It was kind of fun to do something different as well. It's just like different to the normal things that we do in the school day. So, it's like interesting to learn something new and…yeah." (Page 3)	"Thought it was good and it was and it was set out really nicely like an explained very well" (Page 1)	
2		"LH: How did you feel about taking part in it? P: It was good." (Page 4) "It was all helpful." (Page 9)	
3		"It was good because I got to learn stuff about like, um, how much I need to get sleep every night and stuff that I can do. Mm. To help me get a good night's sleep." (Page 3) "There was, it was all quite interesting to learn" (Page 3)	
4		"I think it's quite important because it'll help people to know better about it." (Page 4)	
5		"Workshops are like really helpful" (Page 13)	"It was alright. It was very different to a school day." (Page 5) "P: I don't think that you said why we were doing it. They just said, OK, we're going to be doing this sleep thingy. LH: OK. And what did you think when you when they said that to you? P: I wouldn't have minded to be honest." (Page 6)
6	"I think it was like it was quite different to normal school day cause normally like on that day we would have just gone to PE or something and done like a lesson whereas it was something quite different and I was quite excited about it." (Page 5)	"I was kind of excited, but then I was also kind of nervous at the same time because I didn't know what it was going to be like. I don't know. I guess I was looking forward to like the idea of it sort of thing." (Page 3)	"Well, I didn't know what the questions were going to be like, on like the survey. So I don't know what the questions were gonna be. And I was, I don't know what I was nervous about, but just that." (Page 5)
7			"Uh. Not sure, I just thought it'd be something good to maybe improve or something like that." (Page 3)

			“At first I thought don't really know who else was going to do it, but then I thought why not give it a go, and I thought some of my friends would do it... depends how many people do it really, I feel like if no-one’s doing it then probably not, but if it’s like one or two people then yeah.” (Page 4)
8			“I didn't feel excited or bored. I felt OK” (Page 5)
9		“Ummm it's quite interesting.” (Page 1)	
10		“I found it interesting. Like some of the facts you said, and it was interesting how we like we could how long we should sleep and everything. So yeah, it was interesting.” (Page 4) “No, I think it was all good.” (Page 5)	“Well. I think I've had one before. Well, I just on deep learning days, because that's what it was, we kind of get a few workshops like that. So I just, I was like, I don't really know, I just found it normal.” (Page 3)
11			“I thought. It was not like something out the ordinary that we've not done before. We've done stuff like that before.” (Page 2)
12	““… it makes you a bit more interested because it's just not a normal school day” (Page 10)	“I felt Good after I've, after we did it. And I felt, excited to do it” (Page 5)	
13	“Yeah, it's a good idea. It felt quite different, but it was still like teaching us stuff.” (Page 8)	“I liked the workshop.” (Page 4)	
14		“No, just over all the workshop itself was good. I enjoyed it.” (Page 14)	
15		“Well, I've I was kind of excited because I've seen [practitioner] do like her other workshops and they were quite fun so.” (Page 6)	
16		“I felt good because I felt like I needed a little bit more information on sleep and it was like really important and like when we made from like routine schedule things, that was really nice.” (Page 6)	
17	“Well, I got to miss English and we were doing like analytical writing, so that was quite nice.” (Page 6)	“It was quite interesting” (Page 6) “Probably a bit curious like to understand like know what was going on with it. And to learn bit more about sleep as well.” (Page 6)	

18	"And like I think people enjoyed it that was in school day because a lot of people in my class and me were really excited about it because we're like, missing the lesson." (Page 8)	"Umm Like I was quite interested because like first of all, I really like sleeping and I don't sleep a lot and I know that, and like I had no idea that, like, sleep was so important." (Page 5)	"Umm. Like at the start I was like really into it. But like in the middle, I kind of lost it but then umm then I just started gaining interest at the end again." (Page 7)

Participant chart 2: The theme Burden, Balanced and Interactive, was later mapped from this chart

Participant	Balanced length and pace	Interaction and activity	Understandable
1	"yeah, I think that was a good length amount of time. So then like, I didn't get bored in that time, but I was like, still paying attention. It wasn't too quick that I didn't take it all in." (Page 2) "um, I think that Umm, that they weren't like talking too much or like overloading us with lots of information. So I kind of was like, I could listen a bit better so it wasn't like too much information coming at once." (Page 5)		"I didn't find it difficult to understand or anything." (Page 2)
2	"It wasn't too long. Because it was all kind of like you did have discussion points, so it wasn't just information being thrown at you the whole time. You had your own things to do with the survey and things." "It could see, but it did have all the information you needed and definitely help my sleep. I think an hour is good." (Page 9)	"I think it was good to mix like to find out about more people sleep and not just friends." (Page 10)	
3	"I think that's a good amount. Cause then you get a lot of like new information, then you get quite a lot of time to ask questions and do the survey and things." (Page 5) "Um, if you added like. 10, 10 or 15 more minutes. It won't be too long. But if you add, you know, like another half an hour, I think that'd be a bit too long." (Page 5)		
4	"I think it was a reasonable because it covered the necessary parts." (Page 8) "I don't really think that if we made it shorter, I don't think people would understand really. Because the length that you guys did it for an hour, I think it was quite reasonable and like a good minimal time." (Page 9)		
5	"I mean, it was quite good at being an hour cause then like normally if it was just something short, we wouldn't really get to learn as much as we could, we probably would have just had like a few fun facts and the main things where sometimes the little things can be quite interesting as well." (Page 8)		

6	"I think the fun facts about sleep and how sleep helps you brain. Like having that all throughout the workshop, like it wasn't just all in one massive section. Having them all spread out was quite helpful to like to keep interested in it" (Page 11)	"I think there was enough activity, yeah." (Page 11)	
7	"Yeah, the length is quite good. I think it as an hour it summed up, loads of stuff about it." (Page 9)		
8	"To be honest, cause like, the longer it is, the more information you like get. But if it was short, I probably wouldn't have known as much." (Page 5) "Let's say maybe the one hour because like if it's longer, I might not want to know too much like you think. If there's stuff you already know but you want to know more, and it might be helpful, but I'll say leave it as a one hour cause I think like a lot in one hour. But if you do it in two sessions like you could get I would say sleepy cause like. Yeah." (Page 6)	"It was OK as it was, especially like when they did the videos and all that." (Page 9) "Yeah. And like, where some people had, like, where they did this online survey about how much knowledge they knew. Like, it's a good thing" (Page 9)	
9	"No not really. I think it was just like. quite even…. It was like a good amount of time. I think people would get a bit fidgety after, like, more than an hour." (Page 4)	"I think it was quite good because then you don't like, just sit around and listen because then you just don't concentrate as well." (Page 6)	"Umm I think it's just like the information was really helpful. I got it." (Page 6)
10	"I don't think it was too long I didn't get bored." (Page 6) "I don't think so. Everything did find helpful you mentioned. So I don't think there needs to be anything else." (Page 9)		
11	"I think it would have been too much if it was two lessons. But I don't think you would have more than one hour because because that's how long the school lesson is and. If it was half an hour, then what we meant to do for the other half, like well for us, we weren't in lessons that because we were in workshops instead of lessons. So I guess it could be a bit different if the school was in lessons. I think an hours a good time." (Page 6)	"It was like interactive, yeah. And we would talk to each other about sleep and not just. Not just well, with other groups and forms that we do for school." (Page 2)	
12	"No. An hour would be OK to tell us everything we need to know about sleep." (Page 9)		"L: Is there anything that made it difficult to take part? P: No, nothing that no, I think I think I understood it." (Page 13)
13	"L: Do you think that would be more helpful to have a longer session? P: It depends like. I think it'd be it'd be good." (Page 9)	"I think the activities are really good." (Page 7)	
14	"There was enough like a good lesson." (Page 8) "It was completely fine. Yeah, I thought it went quite fast, to be honest it, I think it was the perfect length for a normal good lesson." (Page 9)		"No, it's perfectly fine. I understood it all." (Page 13)

15	“Because I think like if it's half an hour, you kinda like cramming everything in. Then you're not doing it right as much. In an hour you can like fit everything in. And then I think with an hour and a half, it's just a bit too long.” (Page 9)			
16				
17	“an hour's quite a good length or something like that. Like if it was much shorter, it's kind of just like ohh, go and sit down, listen to some stuff and leave straight away. Like it doesn't feel like you're learning much. It doesn’t give you the opportunity to like remember as much stuff, cause you're not in there for as long thinking about it.” (Page 8)			
18	“I think, and I was a good one because if was longer than I would have, just like, like lost interest . But if it was shorter, I would just wanna learn more.” (Page 7)			

Participant chart 3: The theme Ethicality; of personal importance, was later mapped from this chart

Participant	Benefits of sleep and consequences of not having enough	Parents and friends are influential	Importance is demonstrated by routine and use of aids	The value of sleep fluctuates
1	“Um I think it's very important because it can make me in a better mood….And like, learn at school and do more things in the day…. It makes me a lot happier and and more energetic.” (Page 1) “LH: what happens if you don't get enough? P: I'll be tired and it won't feel like doing much.” (Page 1) “well, I think sleeps really important. Just so then. Like I said that you can get ready for the day and the next day and and you'll be like ready to do different things” (Page 6)	“My mum is always nagging me to go to bed earlier, and so then and I'll be better in the day. And my sister has gone to bed quite late sometimes and she'll be very grumpy the next day.” (Page 1) “my mum was very tough on me about getting lots of sleep and she'd like make sure I was ready by a certain time, then cause my dad needed to go to bed early as well, so then they can go to work and so they weren't like as like getting ready for bed when they're trying to go to sleep.” (Page 5)		

2	"Because if I don't get enough sleep, then I'm really tired in the morning and I can't concentrate in school." (Page 1) "Yeah, because if I don't get enough sleep, I'm very grumpy in the morning." (Page 1)	"On every school day I'm refreshed because my mum sends me to bed" (Page 2) "Well, my mum comes in and turns my light on at half six and then I have 15 minutes to kind of get out of bed." (Page 4) "Well, I go to bed and go by myself if it's like earlier than nine, but nine is like the limit and mum tells me." (Page 4)		
3	"I think more in secondary, cause I have to wake up a bit earlier, so it's important that I get more sleep." (Page 1) "Um, I think it's very important cause if we don't have sleep or a very good sleep, we won't like really be able to focus and we'll just be like focused on how tired we are rather than like other things." (Page 1) "when I get a good night's sleep, I'm like more like awake and I just want, I want to like do things like run around" (Page 2)	"Because my mum read a book about like teenage brains, and she told me that I need to get like nine hours, like of sleep and stuff like that." (Page 4)	"Um, reading helps me when I can't get to sleep, but sometimes I have like these rain sounds on and that helps sleep." (Page 1)	
4	"It like helps me concentrate. On a day to day basis." (Page 1) "Some people are quite grumpy sometimes when they don't get enough sleep." (Page 1)	"I have a phone, but my mum turns it off and puts it away for me." (Page 5)		
5			"Umm I have a weighted blanket. Like comfy pajamas, I have cuddly toys as well, like a	

			lot. And then for some reason I find that listening to the Encanto soundtrack actually helped me to get sleep as well.” (Page 3)	
6	“Well, I think it's quite important because like for our brain to like save memories and stuff and to focus more, and also so that like we're not Moody and we're and we're healthy.” (Page 1) “Well, I mean, if you're tired, then normally you can be a bit like grumpy. Like if you haven't had enough sleep then you might be a bit like snappy.” (Page 1)	“Yeah, they give me a set bedtime…., they think it's really important. Like they think that they know, they just say that I have to go to bed early, otherwise it could like if it's a school day and I've got like a test the next day, it could, like, affect my education.” (Page 2)	“Well, sometimes I read before I go to bed because it kind of just like helps my eyes get tired. So that then I can fall asleep easier.” (Page 1)	
7		“Not really talked about, but my parents are, they go to bed early. I thought they would go about half 10, but my dad, as soon as he gets in he falls asleep within 2 hours…. they've just said out of the kitchen and upstairs for 10 and everything off for half ten, light, turning TV off.” (Page 7) “Yeah, used to. They used to be always the time where to go to bed and they come in and make sure you're sleeping. Then as I got older, they just kind of stopped it and then they didn't really know what time we're going to bed. They thought we're going to bed quite early, but we didn't really. When I turned about 12 they got a bit loose and then. Yeah.” (Page 7)		“I think it's quite important, but it depends on what you're doing, like if you're doing something the next day. It's like. You got school the next day. Then it is important. But if you just relaxing the next day, you're not doing anything then not massively important.” (Page 1)

8	"It's important, I like just lying in and having more sleep then actually being up all day. I like sleeping, that's for sure." (Page 1) "sometimes if I don't have enough sleep or something like that, I might be tiny bit Moody but not a lot." (Page 3) "I usually just want to just go to sleep, but that's usually from, like, being really tired, but it doesn't affect school, but it might affect if I'm just sitting. I get a bit bored, so I started trying to fall asleep but it doesn't really affect me school." (Page 4)	"So my parents said I should read before and it worked better and it helped sleeping." (Page 3)	"Yeah, it's usually the same. The only time that I usually go to bed late is on a Wednesday." (Page 1) "Umm I read my book and then I watch telly, and I've been watching his dark materials. I don't have a routine like completely when I go to bed, like straight away. But I read and I have a bit of milk or a hot chocolate. And a piece of toast quite often." (Page 2)	"Because like, sometimes, if there's a day that I'm not looking forward to, and I have to get up early, then I think it's not important. Like, if I'm gonna, if I'm on holiday or something, so I need to get up early to do something" (Page 4)
9	"Well, if I get like not much sleep then like I get really tired in the morning and then like I can't work properly. So that really important." (Page 1) "Like if I didn't get like any like 4 hours of sleep then like I get really angry and then don't get up in the Morning" (Page 1)	"P: Well, my dad turns my Wi-Fi off at half 10. L: OK, so is it helpful to have parents that kind of support you with that? P: Yeah. L: Are your parents kind of important in terms of your attitude towards sleep P: Well, not really, I just know I need 8 hours of sleep." (Page 6)		"I'm just sometimes I have friends over and we just like, stay up quite a lot. We don't have to get up early. So like we don't really bother what time it is." (Page 2).
10	"Well, I feel more awake and like I want to do things" (Page 1) "When I don't sleep as much I can get tired. And I don't like, I can think differently and I'm just not as like good at school if I've not slept well, but when I sleep better, I know I work better." (Page 1)	"Ummm. I don't know. Like my mum and dad maybe. I do I do know my mood is different when I don't sleep, so I do sleep. I do know it's important." (Page 5) "Well, sometimes like there's some people who are my table in the workshop that say they were, like, go to bed really late and like I would some people might like, think they're	"Well, I read and then like I talk to my mum and I also sometimes listen to sleep stories. That helps me.) (Page 2)	

		cool and would go to bed later. But I just. Like there's nothing that bothers me and I just do what I do." (Page 10).		
11	"I don't like to be like, really tired in the morning. I mean, I'm not organized, but I'll prefer to not be tired and to be able to do everything. I don't like being cranky all the time, I guess." (Page 1) "Well. I don't really know, to be honest, I mean sometimes if I'm in the classroom and I'm not being involved with the lesson. Then I'll get home and I won't be tired. I'll still have loads of energy, so I haven't really done anything." (Page 5)			"I want to have a good amount of sleep, but I don't like getting to sleep really early, but I just didn't didn't sleep whenever I want to. So I don't really follow a strict routine" (Page 1) "Let's say. I have like a day off school and I'll do absolutely nothing for the day and I'll just stay in bed. Well. If I'm really ill then obviously I'll go to sleep, but if I'm feeling better as the day gets on, but it's still end up doing nothing. I don't think I'll get a good night's sleep because I'm not tired, so. Yeah" (Page 2)
12	"I think it's important because then after a long day, you just need to recharge your energy." (Page 1) "I feel good and ready to go." (Page 3) "I feel a bit like tired and I can't like, I can't bother to do anything." (Page 4) "Umm I think, yeah, I think in like high levels of primary school. I think it's important to know about it." (Page 6)	"LH: And where do you think it got its importance from? P: Umm. My mum and dad. And I think my brother? And like people in school." (Page 1)		
13	"I feel fresh and energized." (Page 1)			

	“Because if we didn't have sleep, we all be, like, really tired or time with all the stresses. So sleep just really good.” (Page 1)			
14	“Because it helps you like, recharge almost. Yeah.” (Page 1) “I mean. I think after I do get quite a lot sleep, I do feel happier and like. Lively. Almost.” (Page 5)	“P: Yeah, probably. Depends what my parents say. L: OK, so do your mum and dad have a bit of influence over your bedtime? P: I'm not sure…. like if a couple nights I would have like bad sleep or I would struggle sleeping they might suggest me to like read or something?” (Page 3) “L: Who decided what time you should go to bed? Was that you? P: No. So basically it's like my parents based it off my age and then my age goes to my bedtime.” (Page 3)		
15	“like if you don't really get a good night's sleep, you're gonna wake up in morning and feel terrible.” (Page 15)	“like 5 minutes before I got to bed, my mum will send me up and I'll like brush my teeth, clean my face, and then I'll come to bed.” (Page 4)	“So I wanna say on school nights at half eight. And then like on, like a Saturday and the Fridays like maybe half nine.” (Page 3)	
16	“I feel like it's very important cause it can affect your energy and how well you're doing class and like your learning and like it can also affect your mood.” (Page 1) “I'll probably be a bit Moody and I've been a bit off it. And then I won't be able to do as well in my work and I won't be able to concentrate because, cause I'm tired.” (Page 1)	“I feel like my mum's always told me about. You need enough sleep.” (Page 1) “But I feel like the other thing is my dad's saying it like. He'd be like P. You’re really like off it today. You need to go to bed early or you need to do this. So you need to come off your devices today because you haven't had enough sleep. So you need to zone it in. And I feel like that's quite important as well.” (Page 5)	“Ummm 9. But sometimes I'll be up at 8:00 and I'll just kind of lay with my eyes shut off. Sometimes I'll just go to bed at 9:00 and just go straight to sleep. And I do some reading as well on that. Really helps me.” (Page 2) “Yeah I'd say quite a long time. Sometimes I listen to my audible or like an ebook, and then sometimes I sometimes I just read. Sometimes I listen to my sister read.” (Page 2)	

17	“like sleep is important because it kind of affects how good your next day is. Like, if you don't get much sleep then you're a bit like grotty, you're not very nice the next day, so it's quite good for your mental wellbeing, and everything.” (Page 1) “sometimes when you don't get so good at night sleep, you can kinda tell the next morning.” (Page 1)	“then, like there are messages through school parents as well about sleeping.” (Page 1)	“Probably. 8-9 hours of something. Because I wake up after seven at 7:15. Then I go to bed, well depends how much work I've got. Half, 8-9, sometimes half nine. Very rarely later than that.” (Page 2)	“Um, well, I tend to do like my homework and we'll have food, then I do more homework then I'll either bath or shower, and depending on how much I've got, I might watch some TV. Yeah, I try to chill out, but it's depends what's going on.” (Page 3) “Well, sometimes I overthink about my work and like I I do go to bed later because of my work.” (Page 4)
18	“Very important, because if I don't sleep then I get really like Moody and stuff.” (Page 1)		“Being in a comfy room and just like, if, like normally before I go to sleep, I just make myself really tired and start running around a lot, so then I can actually go to sleep.” (Page 2)	“Like sometimes, if I'm like, worried about other things, I don't really care about sleep.” (Page 2) “But sometimes when like when I'm gonna have fun. Then I go to sleep late.” (Page 5)

Participant chart 4: The theme Intervention Coherence; Misunderstanding versus Clarity, was later mapped from this chart

Participant	Lacking Clarity	Teens need support for their sleep
1	“LH: Do you remember why it was being delivered to your school? P: Umm. I don't think so, no.” (Page 1)	
2		“So people know how important it is to get the right amount of sleep and how it does actually affect you.” (Page 5) “Yeah I got it, it was good, like it had the right amount of information on why it was given to us.” (Page 5)
3		“Um, because we've like, just gone to a big, like the big school, we've just like gone up. So we'll have to be waking up early or maybe like do things that make us stay up like later. And sometimes, like since we get older, we want to stay up later and that like, sort of makes our sleep change.” (Page 3)
4		

5		
6		"LH: Do you remember why we came to do the workshop? P: Umm, yeah, like we need more sleep. I think you explained it really well." (Page 5)
7		"Probably because, we need to build a program thing to study, sleep and stuff. I think it's pretty important to learn about all people growing up. Because you while you're growing and you need a lot of, you need to relax. Really. To let yourself grow." (Page 5)
8	"Well before actually started, I thought because I didn't know what If we're meant to sleep and I thought, are they going to let us, are they gonna have a mattress and all that ready for us to sleep? And then when I came in, I was like, can I sleep? I'm my friend, said no, because there wasn't any mattresses. But I did want to go to sleep, but I tried not to, but I did think there was a mattress ready." (Page 5)	"Yeah. It was helpful because like we were learning about like different ways of how to sleep and all that and how much we get. I actually realized that there's more to sleep than you actually think." (Page 6)
9		"Yeah, because like. teenagers don't really get that much sleep because they go to bed later." (Page 4)
10		"Umm well, some people go to bed really late and then they're like, get tired and seem sleepy. And well, I think you were like telling us that we should sleep more and it how important it actually is." (Page 4)
11	"Yeah, you explained a bit of it. You're saying that it was for more research into young people sleeping. And well, to be honest, I'll probably forgotten what you said to it. It would have been along those lines." (Page 3)	
12		"Knowing how like you get to sleep and how different people sleep... She talked about how people get to sleep and average time you should get to sleep. How would you have got to sleep and stuff like that." (Page 5)
13	"But I was hoping that we just go sleep in class…. Bit disappointed, but it was a good workshop." (Page 4)	"Uh, I think that it was to make sure everyone has enough sleep." (Page 5)
14	"L: And did you understand why [practitioner] was coming to do the workshop? P: I think so. I'm not sure…. Maybe to see like how children's sleep is going from us?" (Page 6)	
15		"L: Did you understand why we were talking to you about sleep? P: Well, like just because, like I said, if you don't get a good sleep, you'll be, like tired and you're just like you could just like get on the wrong side of other people because, like, you're all grumpy and stuff." (Page 6)
16	"L: Did you kind of understand why you guys were doing the workshop?	

	P: Kind of. L: Kind of. What did you understand about that? P: I understood like why it was in part of why we needed, why sleep was a thing.” (Page 8)	
17		“we also got was it the Word document thing that with the information on it and at the beginning I was like I wasn't really sure what it was. But then by the end like you kind of pretty much understood what you're gonna be there doing.” (Page 6)
18		

Participant chart 5: The theme Opportunity Costs; Wanted or Not, was later mapped from this chart

Participant	Preferred it to other activity	Indifferent
1	“LH: So we've got relationships at the top, which one would sleep be like, #2 three or four? P: probably number 2 because that it was really, I found it quite interesting just the some facts and like how it was presented and stuff.” (Page 4)	
2	“LH: And if you were to like, put them in order of what you think most important for like you and your year group where do you think sleep would rank? P: Uh probably about one, because some people do not get the right amount of sleep” (Page 13)	
3		“I did want to do P.E but then after the workshop I thought, oh, that's, I could have done that as well. So, it's both like, oh, I don't mind doing that either.” (Page 3) “But we have done a lot, a lot of stuff on like mental health and like being safe online and stuff like that. L: Yeah. And where do you think kind of sleep ranks in that? Do you think it's more or less important? P: probably around the same because maybe a little bit more because um, if, say if you don't have a good night's sleep, you might not think straight.” (Page 6)
4	“I think sleep would definitely be like really important. Like one of the top things.” (Page 9)	
5		
6		
7		
8		

9		"L: do you have other things like this that are part of the curriculum? P: I think we did a little bit about technology and like friendships. I think. Oh and careers. L: OK. So if we took those four, what would be the one that's most important to you, you know, ranking it, which do you think you get most out of? P: Umm probably careers because, like you make money in them and that's important. L: So careers #1, where would sleep be, would it be 2-3 or four? P: like 3. L: OK. And is there a reason it's #3? P: Well, relationships are like, you need to be in good Relationships, so that's number 2. I don't know. You don't want to be in like a bad relationship with someone." (Page 6)
10		
11	"I think younger people could learn from it, and although I don't really have any problems with my sleep, I think people my age do, and like, we need it more, as some people only get four hours a day." (Page 7)	
12	"Umm. Some other stuff is important but sleep is important to me." (Page 1)	"LH: And do you think it's as important to do that stuff as sleep, or do you think it's more important or less important, what do you think? P: I think it's about the same." (Page 12)
13	"Maybe we could look like a bit earlier because if the if younger people know it, the more it's gonna affect like affect their sleep. Because if they know when they're older." (Page 13)	
14	"L: Do you think having the workshop on sleep at your age is important or is it not that important? P: Yeah, because I think by the time you're like I don't know 21, then you'll know how to get good sleep. And like you won't have to search it up and like, because sometimes you can search things up and not get the results you was expecting, not get helpful results." (Page 11)	
15		"I don't really know because I see sleep is important, but then there's like other stuff that's like like important, like the same importance as sleep like health and stuff. I would like, prefer health." (Page 11)

16		“I feel like saying sleep as well. But like if we couldn't do that, then it will be my next option. But I feel like mental health is a bit more important.” (Page 13)
17	“Well, I got to miss English and we were doing like analytical writing, so that was quite nice.” (Page 6)	
18	“And like I think people enjoyed it that was in school day because a lot of people in my class and me were really excited about it because we're like, missing the lesson.” (Page 8)	

Participant chart 6: The theme Perceived Effectiveness; A Spectrum, was later mapped from this chart

Participant	Sleep knowledge: building, reinforcing, or just forgetting?	Encouraging reflection promotes its importance	Change was encouraged but only sometimes actioned	To recommend, or not to recommend?	More interaction and content needed for it to be effective
1	"Umm. I thought that… I think there was like a fact about how much percentage of your life you sleep. I thought that was a good one." (Page 2) "Yeah, I think we learnt if quite a few more things and had known about it." (Page 2)	"Umm, I think it is good to like….like make me realize again that sleeps really important in like to make you feel better." (Page 1) "I think it made me like know more that I do need to get good sleep each night." (Page 2)	"Since the workshop have you made any changes to your sleep or has there any been any change in like your routine? P: well, I've kind of done a bit more reading before I've gone to bed. So then it can help me go to sleep and I've tried to go to sleep at the same time every night. Then I get like a good amount of hours and I'm good for the next day. LH: So you kind of increased your reading, you've gone to try to go to bed at the same time each night and do you think that's helped you kind of get better sleep or just kept good sleep? P: Yeah, I think it's helped me get better sleep." (Page 4) "I do like reading and stuff, but I think the sleep workshop like helped me to do a bit more of it because I I do enjoy it once I actually get a good book and then I can read it every night." (Page 5)		

2	"P: The yeah, like the average like time you need to go to bed and how much sleep you need and not to go on your phone. LH: Not going your phone. What do you remember about the phone? P: Uh, that it like interrupts your sleep because you can't get to sleep as early." (Page 5)	"Well, sleep can impact your like day-to-day life a lot. And it's just easier to feel. Kind of refreshed and not like grumpy and tired. It does impact school a lot, like it makes school a lot easier." (Page 8) "And also that it is really, really important to get enough sleep." (Page 15)	"Yeah, I used to go my phone all the time, but now it's kind of stopped." (Page 6)		
3	"LH: Before the workshop, what do you think your, you would've rated your knowledge at? P: Um, Probably about a six or a seven because I didn't know some things about sleep, but I didn't know like everything. LH: And after the workshop now? P: probably like an 8, because I don't know like everything that there is to know about sleep, but I know like now I know quite a lot of things about sleep." (Page 4)		"Um, well the workshop like helped, helped me find ways to get sleep. But I think because I was really tired in the mornings and I just didn't really, I didn't really like being tired and I just wanted to like, be able to focus and stuff." (Page 6)	"LH: If you had a friend that was kind of struggling with sleep, do you think this, this workshop would be helpful for them? P: Yeah, I think it would because that like makes 'em more like, oh, this is why I can't get to sleep and this is what I should change to be able to get a good night's sleep." (Page 8)	"So a few more fun facts thrown in would make it a bit more, yeah, interesting." (Page 4) "like a follow up workshop or something like that a bit later would be good. Maybe there's like, you could do like a one that's like later on, but it's like an optional one. So if people who. Think, oh, well I should really go back to that because my sleeping's still not improved. Then maybe I should go." (Page 8)
4	"LH: Do you think it helped you to increase your	"Umm I think it helps them realize how important like not using technology	"P: I've gone to bed a bit earlier, but apart from that, I think.. oh and read the	"LH: OK. So if I was to ask whether you recommend, how likely out of 10 would	"I think if we add it a bit longer we would be able to cover more things." (Page 8)

	knowledge about sleep? P: Yeah. LH: If I was to ask you to kind of rate it before and after out of 10, so 10 would be I know everything about sleep and zero would be like I know nothing. What would you have rated your knowledge before? P: 5 probably LH: a 5 OK, so you knew a bit, but not loads of stuff? P: Yeah. LH: And what about now? P: 8-9 probably." (Page 7)	before bed and having a nice quiet place." (Page 14)	book, read a book before bed sometimes. LH: OK, what helped you to make that change? P: I just think I felt it was more important." (Page 12)	you, 10 being definitely recommend? P: Probably 9/8." (Page 15)	
5	"There was quite a bit I didn't know, although I've probably already forgotten." (Page 6) "Because like I said, our schools don't really offer well, sometimes they do offer quite a bit of information, but workshops usually have far much more information." (Page 13)	"P: I think it became more important. LH: what do you think led to that change? P: Just like it outlined all the things of like what it's good for." (Page 8)	"Umm it has made me think a lot about making changes, although it's quite hard to find changes that I will like." (Page 10)	"LH: would you say this workshop would be helpful for them? P: Yeah, I think so, like I would hear what they're struggling with first and then I could advise them on like have you done this or not done this." (Page 12)	"I feel like it would be like good in like the school, but then to have more like information offered, like after school if you want it." (Page 9) "Yeah. Maybe like a leaflet of stuff would help." (Page 10)
6	"Umm yeah, like the fact thing. I didn't. I	"didn't get that it was very important to me, like	"Quite a bit actually. Like if I'm gonna go and like my	"I found it really helpful for me to get to sleep, but like	"Umm. I don't know. I think for the workshop like more

	didn't know most of those facts. I found them really like interesting. I did think I knew quite a bit about sleep, but then most of the facts kind of proved me a bit wrong" (Page 6)	couple of years ago. But as I've gotten older and like, not getting enough sleep makes me like kind of grumpy. And I've realized it's a lot more important" (Page 7)	laptop or something. Normally I would have just kept it on really bright. Now I turn the brightness down quite a bit cause of the thing that you said about the blue light." (Page 10)	I would definitely recommend it to a friend" (Page 12)	fun facts, but maybe like different ways to get to sleep as well." (Page 10)
7	"LH: Did you learn anything from the workshop? P: Uh, I think so, but forgot it now." (Page 6)	"Yeah, I used to go to bed a little bit later, but it made me think, you're a teenager, now we need that sleep." (Page 6) "Not really, just maybe think. I maybe think sleeps a bit more important than I thought it was before." (Page 8)	"I feel like I'm I'm more focused. Like homework and stuff. I think a bit more" (Page 7)	"I probably just recommend them going online or going on a website or something. Or something like that about sleep." (Page 12)	"Focus on the disadvantages will help because they'll make them think, oh if I don't do this, this might happen. Or we can think about it more." (Page 12)
8	"Well, there's not, I can't quite remember" (Page 6)		"LH: have you made any changes to your sleep since the workshop? P: No. I would say my sleep is good." (Page 7)	"The workshop would be helpful because like it might help them understand more about sleep and then they are like, so this might be how I'm not sleeping well and then they might have options on how they can either get a better sleep or something like that." (Page 10)	
9		"Yeah. I think I started noticing when I go to bed like after the workshop." (Page 1)	"LH: was it a fact or new information that helped for example? P: I think it was like the blue light. When, like you don't have any blue light often like it affects your sleep.		

			L: OK. So did you have like, the blue light on before the workshop? P: I think so, yeah. L: OK. So have you since turned it off? P: I've not figured it out yet, but I went on my settings and like tried to turn it off after the workshop. I'll ask my dad to do it." (Page 3)		
10	"Yeah, it was some of the things were helpful, but I can't really remember most of it as it was a while ago." (Page 5)	"Maybe a bit more important, like how it affects you differently, when you do sleep, when you're not tired." (Page 4)	"LH: Have you tried to make any changes to sleep since the workshop? P: I don't really think so. I I can't think of anything I do. I just I think I did try to do some of the strategies, but not much" (Page 9).	"I I'd say they should go to the workshop. And also said it's probably just sleep stories as they are helpful for me." (Page 10)	"Yeah, I think you should do more, because then it would remind us of how important sleep is." (Page 8)
11	"I think kind of like the same sort of knowledge. I mean obviously I remember some stuff you told us. But I don't really remember anything really important that I've learned from it. I kind of still have the same information on sleeping." (Page 3)	"I thought that was good, because I didn't think it mattered that much, I thought all it did was like, if I don't get a good night's sleep it only means in the first hour in the morning, I'm not feeling great." (Page 3) "Umm I think I think it's a bit more important and I think I understand it a bit better and like, I know things I need to do that would give me a good night sleep. Like I didn't realise until like we were talking, that like every time I get a good sleep it's because like, I'm tired and	"Umm, like I've thought about it, because sometimes I have missed the bus and like it's embarrassing, because like, I knew I should have slept more. But like I haven't changed really." (Page 8)	"I think I'd rather say it myself because I feel like they would take it better from me. I think it would be more like better if I said to them like, you're not getting enough sleep. It's obvious I can tell you should start doing this. So I think they would listen to me more than in a workshop if they were like really struggling." (Page 9)	

		I'm worn out from doing something.” (Page 3)			
12	“I think I learned a bit of from it. Before I didn't know anything and then after I knew a bit more” (Page 8)	“It was enough that I think most people to realise that sleep is important.” (Page 9)	“L: What makes you think you getting better sleep? P: Because she's talked about us getting better, like how many hours we should get. So I'm coming down and more earlier than I used to.” (Page 12)	“Yes, I I would. Yeah. I think I would like tell them about this.” (Page 14)	
13			“L: Have you made any changes to your sleep? P: Uh, not really.” (Page 15)	“L: And if you did have a friend who was struggling with sleep, would you tell them about this workshop? P: Yeah. L: OK. What makes you say that? P: Uh, because it held a lot of good information about sleep.” (Page 18)	
14	“I don't know really. I guess like. It helped me on like my knowledge on how to get to sleep.” (Page 5) “I don't really need a bit more, because I guess that if I am struggling to sleep, I could use the knowledge I have now. Yeah, it's good.” (Page 7) “Yes, because from that I realised that you don't have to be hot to sleep properly, and	“It did have a quite a big impact on how I slept like I was thinking more on how to get to sleep.” (Page 5)	“L: That makes sense, and how do you know your sleep is better? P: I guess I feel like I've got more energy and that. If I'm cool, it just helps me get sleep. L: OK, that's brilliant. And what do you think helped you to make that change? P: It was just the advice that and I thought, if she knows that it helps you sleep, then I should maybe try it. And then it turned out to work and I'll keep doing it.” (Page 12)	“L: So would you recommend this workshop to a friend who was struggling with sleep? P: Yeah. L: Yeah, why do you think that is? P: Because if my friend had bad sleep, I don't want them to be sad or in a bad mood.” (Page 13)	

	that it's better to be like cool, and to not be too warm." (Page 11)				
15	"I didn't know that it was like 8 to 10 hours that a child needs. There was just a lot of facts in there that I can't remember really" (Page 7)	"I think it was less important, before the workshop. I just like realised how much it can impact you." (Page 7)		"I think it would be helpful. Cause it was helpful to me. They will like see how important sleep is." (Page 11)	"Maybe just like a little bit more like more facts. Like what makes you have like a really bad night sleep and like how to avoid that?" (page 9) "Maybe you could like, give me leaflets, give them around schools and stuff and maybe like, ask some schools to put posters up with a few facts on or something like that." (Page 12)
16	"But I realised why I need to come off devices more and I've realised that I need to start doing this before bed and not before bed." (Page 7)		"And I've tried to change like what times like I'm getting to bed like if I'm getting like a bath like right before bed, I know it calms me. But like I'd rather have a like an hour half an hour before bed so that I know I can start being more relaxed." (Page 7)		"We didn't really talk about like how mood can affect you" (Page 11) "Having like no one to one lesson might feel like that would be really good, but it's taking a lot of time out of the day. I reckon like maybe doing like a lesson instead of having like just a workshop or something, I feel like having a lesson every week where we can make like leaflets, do activities about it. It will make it more fun for classes, but it was really good." (Page 14)
17	"And it was like the stages of sleep, how it benefits you, like	"I think it brought more, it brought more like awareness to it was like. I	"Ohh, I've tried to kind of get myself to chill out each night, but it it does depend	"I probably would recommend this sleep shop, but then I probably	"Might have been, but it depends what you added, but maybe not adding a

	the fact like, was it the pill bit, like saying all these things and actually like sleep helps that and that was quite interesting." (Page 6) "Ohh, I knew like bits about sleep and how it does like help your mood to probably like a four. But I didn't really know. Is it in as much detail like the different stages and all the benefits it can really give fear and stuff." (Page 7)	would think sleep is important, but I wouldn't exactly understand why it's so good for you and all the different stages of sleep like I didn't know that beforehand, which was quite nice knowing it now." (Page 5)	on things. I want to be able to improve my sleep like cause you get more sleep and things, but then I try to stay in bed longer, light in the mornings, especially at the weekend because I feel like there's sometimes where I miss miss out on sleep" (Page 11)	also get in to talk to school, cause if they're really that not getting very good sleep, then it's they probably needed maybe a bit of help getting more sleep or something." (Page 12)	whole new topic, but you could. Maybe a bit more information about certain bits, if I remember. But maybe the different stages of sleep and like why these bits are beneficial and like yeah." (Page 7)
18	"Yeah I didn't know that it could help with like your hair and your nails and your like how you actually look. I knew that it gives you like bags but like nothing else." (Page 6)	"Umm Like I was quite interested because like first of all, I really like sleeping and I don't sleep a lot and I know that, and like I had no idea that, like, sleep was so important." (Page 5)		"like if they knew how important it was they might like try, like, actually try harder to go to sleep and like you told us about, like, some, like, the the drug. No, not drug the thing you called melatonin." (Page 11)	

Participant chart 7: The theme Self-efficacy; Encouraging and Accessible, was later mapped from this chart

Participant	External Facilitators are the key ingredient	The impact of group size and setting	Interactivity is necessary to partake well	School settings are more encouraging and accessible
1	"I thought that it was good because like obviously you'll know more than just some like of my teachers at school. So it's more like, believable, and yeah, kind of just, I pay more attention because I think you know more	"it was a good size, because then you're not really like focusing on like a couple of people individually. It's kind of like, if it was too large like, like the whole school, then it would be a bit too big and like you		"I think doing it in school is could be a more relaxed environment to do it" (Page 3)

	about it. " (Page 2) "Like, I'm sure they'd like research about it, but if someone's, like, definitely focusing on sleep, then I think would be good to hear from them." (Page 3)	might get distracted by other people." (Page 2)		
2	"It was OK that it was her because I feel like people could stay because they didn't know her, whereas if it was a teacher, they know them." (Page 11)	"LH: How about if we did it to a bigger class? P: Umm, probably not, because they would have been too many people. LH: What do you think would have happened with too many people? P: Umm, the bit too loud. Too much chatting, maybe too many opinions." (Page 10)	"Yeah the discussion because you could actually discuss what's just been said to like fully understand it." (Page 14)	"LH: Do you think that was helpful to have it in school? P: Umm, I think it was helpful for most people to kind of understand about sleep because a lot of people I know go to bed very late."
3	"probably more helpful than teacher doing it because if it was a teacher, you know, you'd be a bit like, oh, I know them. It's a bit like, well, if it's like someone that you haven't known, you're like, oh, um, like who are you? Like you just want to know like who they are and stuff." (Page 6)		"like when we answered the questions about like how animals like half sleep and that people got a lot more engaged because they're like, oh, I want to answer that and all that and stuff" (Page 7)	"I think part of the curriculum is good because some people might be like, oh, I can't really be bothered to go. But then if they actually do it, they might find stuff that is interesting and they'd like to know. So that's quite good being part of the school curriculum because you have to do it." (Page 5)
4	"I think I think it was a good thing because I think it'd be a bit awkward if someone in school did it." (Page 9) "LH: So if I was to say right, you have a teacher or a practitioner, which one would you pick to do another workshop?	"LH: And did you quite like the group size? P: I don't really mind, to be honest, because I think with the bigger group you get more opinions? LH: So actually having more people sounds like it might be more helpful?	"I think it was the video was quite useful, but I was talking to my friends either day and they said it be better if someone acted out like in real life. They said you'd be like, they concentrate more on it. People would focus on it as it's like more interactive." (Page 13)	"Yeah, I think it's, yeah. Because it's better for sometimes people can't stay back after school. And that's sometimes a problem for like picking up and stuff." (Page 11)

	P: The practitioner" (Page 10)	P: Yeah. LH: OK, what if it was done to like a really big group like the whole year group? P: No, I think it wouldn't work. LH: Why? P: It is like a lot more people and it's a lot more crowded." (Page 11)		
5	"I think it was good, yeah. To have another person in the school. But then it depends like what sort of teacher though, like how they are with like students like do students like them, or do they just don't like them." (Page 9)	""I think it was decent. I don't think I would have minded if it was more or less to be honest because I like learning about certain things that could help…. I feel like I would prefer it in smaller groups…. You can focus more, I think." (Page 8)		"I feel like it would be like good in like the school, but then to have more like information offered, like after school if you want it." (Page 9)
6	"I guess it was kind of interesting because like you didn't really know this person, whereas normally if you knew all the teachers it would have given that a different effect… Like normally if we'd have done that in a lesson, probably everybody would have been quite noisy. So, it was quite change for that, a big group of people to be actually really quiet." (Page 8)	"Well, I'm not quite sure because like a lot of people would probably be in massive friend groups and probably like talking a lot if they're with all of their friends. They could like behave a bit differently." (Page 9)	"I think the fun facts about sleep and how sleep helps you brain. Like having that all throughout the workshop, like it wasn't just all in one massive section. Having them all spread out was quite helpful to like to keep interested in it like engaged in something where like there is really important information. But then you've also got some like mind blowing facts in it." (Page 11)	"I think it works quite well with the school like schedule sort of thing, because I know that in PSHE we do a small bit on sleep as well. So kind of following the topic so we can learn a bit more than just one lesson on it." (Page 9)
7	"Yeah, probably someone like her because she knows more about it than teachers and because the teacher, they might not know about it or something like that… yeah, because if it was a teacher, like they don't know as much. They would just be telling us things they were told about it." (Page 10)	"A bigger group wouldn't make a massive difference because it was not too much for groups." (Page 9)	"The questions. Yeah, they just said how important do you think sleep is and all that stuff instead" (Page 9)	"Probably going to be in school cause not many people would have done it I don't think." (Page 10) "Yeah. Having teachers there to make sure no one's talking out anything… There was a bit of chatting on the table and apart from that, not much really." (Page 12)

8	"I did think that it was good because like if you hear it from someone who knows quite a lot and works in it it would be a bit more helpful because if it it's like a teacher like they might not know as much or know as good knowledge." (Page 8)	"I wouldn't make it. I wouldn't have a bigger group. I think if I left it as the same size group as a normal group instead of big or small, it's just in the middle so you don't have too many or two little." (Page 8)		"I'll say it was better at school. Because I think if it's after school it might not be such a good idea or even online, but I did like it in school, it was much more easier. I could see the PowerPoints." (Page 8)
9	"For me it was quite good that it was. I think. Because they really know this stuff I think it's good. But actually teachers are fine." (Page 5)	"Umm, I think. Well, like people were just sat with their friends. And like. Yeah, I think I think it was quite good. I wouldn't want like more people. Because everyone would just be like talking." (Page 5)	"Maybe like you could like do some more activities because then it's less like sitting around and just listening, you get a bit like fidgety and not concentrating as well. And like when you do activities you like, just like moving around and stuff." (Page 7)	"I think it's good, like when people actually know about that sort of thing because they're like. I don't know." (Page 6) "I think like schools are best because like everyone goes to school. Everyone gets it then." (Page 7)
10	"I don't really know it's cause. It's worth knowing what she was talking about and also it was just different. And yeah, I just I don't really know but I just liked how it was different." (Page 8)	"I don't think too much. There was lots of us in there and I don't I don't really mind, to be honest. We don't usually do stuff in a group" (Page 7)	"Yeah, I did find the activities helped. I was able to stay focused." (Page 5)	"I think it's better to do it like in schools because then then we learn more because some people would say they don't wanna do it. But even though they would learn more about it if because, you know they wouldn't wanna do it." (Page 7)
11	"No it's more interesting having someone else. Because if we have our teacher doing it, it kind of just feels the same as a lesson. But if there's someone externally then it feels different even though they could just be saying the exact same things. It's not that we don't listen to our teachers, but if they say it we might not listen as well." (Page 6)	"I was in a group with all my friends or sat on the table with them. It's not like I've just been lessons where. There's obviously people will know, but it's not like there's the whole year there. Everyone's hearing the same thing and everyone's involved with it which helps." (Page 9)	"I think it was a good amount because when we were all talking together, we got to hear what we all think about sleep." (Page 7) "I thought it was better doing paper stuff as well than doing it on our phones…. Yeah, I feel more engaged. If it's an actual sheet of paper. Not doing it on my phone." (Page 9)	"I think it's important to have in school, yeah. Well, I haven't had many though, because. Well, we had COVID for the first year. And then in year 8. We didn't have covid or like, but we didn't really have any workshops or people coming in. We have deep learning day every half term. Where we would be doing workshops and stuff, but we didn't really have anyone coming in. It'd be more. We've been

				learning stuff from our teachers." (Page 6)
12	"Because I think [practitioner] just knows more about it. I think it was a bit more interesting…it feels more that they know more because they been learning about it." (Page 11)			"I think in school time would be better, we're not just sitting around and we're learning something that we wouldn't normally learn in a normal school day." (Page 10)
13	"Like if a teacher does it, everyone just thinks of it as like another lesson. But if someone came out of school, it'd be it'd be like activities and things in their head." (Page 12)	"L: What if we did it in a bigger group? P: It might be a bit more hectic…. Like some people trying to listen to it, but like there'll be more people talking as well so… I think I'll just keep it as like the whole class." (Page 10)	"I think more quizzes. It was quite fun." (Page 8) "Would you like do a little demonstration?... like someone who's been to sleep, someone who's not been to sleep, like their mood can stuff?" (Page 10)	"I think it's good to do it. I think it's good to do it just in school. Some people might not want to do it, but it's also some good things to learn." (Page 11)
14	"I think if it was someone else doing it, then I think that they would. They if they work for like a special trust or something then they would then know a bit more about sleep than my teacher." (Page 10) "I think it'd be like, maybe a bit more important, cause if they're from like special trust, then you might be able to, take their advice more than the teacher." (Page 10)	"I think he was quite good because it like. There wasn't a lot of people who was. It's hard to explain. Like a lot of people who would be answering and then. Well stuff like that." (Page 8) "I'm kind of in the middle with that because it was good with big classroom, but it also probably be a bit better with a smaller group. But I was perfectly happy in the class we had. You get like a bit less discussion time, but you still get the discussion time in there. And you can just talk amongst yourselves instead of having to like say it out to everyone." (Page 9)		

15	“Well, I've I was kind of excited because I've seen [practitioner] do like her other workshops and they were quite fun so.” (Page 4) “Yeah, like the fact it was someone else. Because maybe like the teachers don't know as much as like you guys do.” (Page 10)	“Think I think I prefer like doing it like by class. Because if, like you do in assembly like one of the classes is like messing about and like you might not be able to like pick up on information. To be honest, I think maybe groups would be alright, but I just think it would take up more time.” (Page 10)	“Dunno at school because you can do the activities and stuff. You can watch the slide shows so you can write and see the things.” (Page 11)	
16	“And it also it like made you feel like your parents are definitely right because if someone from work at the NHS is definitely coming in to tell you, then it somebody from a healthcare, so they should know.” (Page 9) “we have got like wellbeing teachers in school. But I feel like it is better for a professional trained person.” (Page 10)	“Probably in a little bit better with a smaller group because you can take a more like if cause people putting hands up every like 5 seconds, you're not really getting it all in there. In small group, there's not many people to be put in the hands open to be explaining, like saying stuff and. But it just can't go into your brain. Yeah. I feel like maybe 15-16 will be like a good sized group.” (Page 10)		“I feel like it would be. It is good having it at school, but I feel like if we went to like a small place like maybe…. having it in my classroom isn't as ideal as having like a little space, cause it didn't really like it is colourful but I feel like having a bright like space where there's like bright things surrounding your side… you feel like that would really help cause you're really wanna go and you really wanna listen.” (Page 12)
17	“but then they wouldn't know as much on the topic, so it was more interesting really. Having someone else there saying it, not just the teachers saying like something like they say all the time that not exactly get messages across cause like if you have someone external. Ohh. Like it's more I'll like this is important like more people thinking about it. It's not just our school saying ohh yeah you should do this and things” (Page 9)	“Not sure. I thought it was alright. But you probably would have been, umm not actually better, but you probably would have got more information and maybe more questions from just one class who know each other and comfortable with it cause like we were two different classes, it didn't really know each other. It's like there weren't many questions that was either because people are too shy or they might not have sure what other people are gonna say. And if you're in a	“I don't think so. But um, one thing like maybe to improve a bit more cause it was a lot of the time. It was like people talking to you, maybe like make it like maybe I quiz and I was like quiz but like some interactive, so you might have to fight, get up and do something or just like not just putting your hand up cause then it's like you're kind of waking up a bit more and kind of finding a bit more fun.” (Page 12)	“I felt quite good that it was kind of mandatory cause then everyone was in their learning about it. Cause if it was optional and it says ohh yeah, there's a sleep workshop. I'm not sure how many people would turn up cause like people like have busy lives whereas if it's in a school lesson like that it's not wasting their time really. It's not ruining like their lunchtime where they could be doing loads of other stuff like they might not think of it as much of a positive as like their

	"But if you did need help with sleep, you'd have like the person who works your school and like does, like, helps with your mental health." (Page 13)	class that you're used to, you might get more questions, but then, you can deliver its more people with more people so. Hmm." (Page 8)		lunch or stuff but then things." (Page 9)
18	"Umm I think it's better for someone like to come in and do it because like there's a lot I think you know. I think they know more than like a teacher would." (Page 8)	"It wasn't boring. It was like quite helpful because. Like, yeah, but then I was still staying with my friends, so that distracted me." (Page 7)	"Like if like we got up and started like running around and stuff like that would just catch my attention and just I would just like start focusing on that." (Page 7)	"Umm I think it's good that everyone learns about sleep then they would actually know what sleep does. Cause if you live your whole life without knowing that, then like you can like you kinda gonna be really tired all the time and you're not gonna grow properly." (Page 8)

Appendix F: Example of the Framework Analysis Audit Process

Extract from Participant 17

P: I feel it could be a bit too short cause I an hour's quite a good length or something like that. Like if it was much shorter, it's kind of just like ohh, go and sit down, listen to some stuff, and leave straight away. Like it doesn't feel like you're learning much. It doesn't give you the opportunity to like to remember as much stuff, cause you're not in there for as long thinking about it.

LH: Ohh OK, so It sounds like so if you weren't in there for a long period of time, you wouldn't have really settled into the session and [P Nods] … OK. And how did you find it being delivered to a larger group?

P: Not sure. I thought it was alright. But you probably would have been, umm not actually better, but you probably would have got more information and maybe more questions from just one class who know each other and comfortable with it cause like we were two different classes, it didn't really know each other. It's like there weren't many questions that was either because people are too shy, or they might not have sure what other people are gonna say. And if you're in a class that you're used to, you might get more questions, but then, you can deliver its more people with more people so. Hmmm.

L: It sounds like you're weighing up the pros and cons like it's good to get it to as many people as possible, but it might mean there's a bit less interactivity and conversation.

P: Yeah.

L: OK. That's interesting. And how about you know who it was delivered by then? What was it like having someone external come in?

P: We would usually have a teacher, but then they wouldn't know as much on the topic, so it was more interesting really having someone else there saying it, not just the teachers saying like something like they say all the time, that doesn't exactly get messages across cause like if you have someone external like it's more like this is important, like more people thinking about it. It's not just our school saying ohh yeah you should do this.

Familiarisation Notes

The length was good; any shorter and it wouldn't feel like I'm learning.

Having it in a larger class made it more difficult to give information because we weren't as comfortable because of people we didn't know.

The external facilitator made it easier to engage because they were seen as more interesting.

Identifying a Thematic Framework

Familiarisation note	Thought process	Framework contribution
The length was good; any shorter and it wouldn't feel like I'm learning.	There is something about it being an hour that was optimal, enough information but not too overwhelming	Balanced length and pace
Having it in a larger class made it more difficult to give information because we weren't as comfortable because of people we didn't know.	There is something about feeling comfortable in the group they're in that impacts ability to take part	The impact of group size and setting

The external facilitator made it easier to engage because they were seen as more interesting.	There is something about an external person being more captivating?	External Facilitators are the key ingredient

Indexing

The abstract was indexed as follows: [For those with visual difficulties, the below abstract is coded with yellow, green, and blue highlights].

P: I feel it could be a bit too short cause I an hour's quite a good length or something like that. Like if it was much shorter, it's kind of just like ohh, go and sit down, listen to some stuff, and leave straight away. Like it doesn't feel like you're learning much. It doesn't give you the opportunity to like to remember as much stuff, cause you're not in there for as long thinking about it.

LH: Ohh OK, so It sounds like so if you weren't in there for a long period of time, you wouldn't have really settled into the session and [P Nods] … OK. And how did you find it being delivered to a larger group?

P: Not sure. I thought it was alright. But you probably would have been, umm not actually better, but you probably would have got more information and maybe more questions from just one class who know each other and comfortable with it cause like we were two different classes, it didn't really know each other. It's like there weren't many questions that was either because people are too shy, or they might not have sure what other people are gonna say. And if you're in a class that you're used to, you might get more questions, but then, you can deliver its more people with more people so. Hmmm.

L: It sounds like you're weighing up the pros and cons like it's good to get it to as many people as possible, but it might mean there's a bit less interactivity and conversation.

P: Yeah.

L: OK. That's interesting. And how about you know who it was delivered by then? What was it like having someone external come in?

P: We would usually have a teacher, but then they wouldn't know as much on the topic, so it was more interesting really having someone else there saying it, not just the teachers saying like something like they say all the time, that doesn't exactly get messages across cause like if you have someone external like it's more like this is important, like more people thinking about it. It's not just our school saying ohh yeah you should do this.

Coding Themes:

Balanced length and pace

The impact of group size and setting

External Facilitators are the key ingredient

Charting

Theme	Burden?	Self-efficacy?	Self-efficacy?
Subtheme	Balanced length and pace	The impact of group size and setting	External Facilitators are the key ingredient
P17	"An hour's quite a good length or	"But you probably would have got more	"But then they wouldn't know as

	something like that. Like if it was much shorter, it's kind of just like ohh, go and sit down, listen to some stuff, and leave straight away. Like it doesn't feel like you're learning much. It doesn't give you the opportunity to like to remember as much stuff." (Page 8)	information and maybe more questions from just one class who know each other and comfortable with it cause like we were two different classes, it didn't really know each other. It's like there weren't many questions that was either because people are too shy, or they might not have sure what other people are gonna say." (Page 9)	much on the topic, so it was more interesting really having someone else there saying it, not just the teachers saying like something like they say all the time, that doesn't exactly get messages across cause like if you have someone external like it's more like this is important, like more people thinking about it. It's not just our school saying ohh yeah you should do this." (Page 8)

Appendix G: Lead Author Reflexive Statement

The author is a white female, from a working-class background, currently training as a Clinical Psychologist in the North of England. Prior to her experience in the healthcare sector, the author had a professional background of working in the Pharmaceutical and Biotechnology industry, primarily with people from higher socioeconomic backgrounds. Her healthcare background however has been working with people experiencing various mental health, physical, social, and socioeconomic difficulties. The author's personal and professional experiences have led her to develop a strong interest in social justice, community psychology, and of working with whole systems, including family systems, and thus has obtained future work in community child and adolescent mental health services.

At the time of developing the study, the author was working in an adult physical health supporting individuals experiencing mental health difficulties associated with chronic physical health conditions. Sleep difficulties were pervasive across client experiences, and thus the author was working with sleep issues on a regular basis,

including understanding individual determinants of good/poor sleep, and understanding sleep behaviour change in adults alongside managing a long-term health condition.

Although the author was working within an adult service, they had a history of working with adolescents in mental health services and subsequently worked with adolescents in a community and learning disability mental health services. They have an interest in child and adolescent health and wellbeing, and the author notes she wants to ensure young people are given as much individual as much power and autonomy in their experiences with healthcare, and as much of a voice as possible when working clinically. She often seeks to understand their experiences as unique to them, via systemic and relational therapeutic approaches. The author therefore chose to adopt a mixed-methods approach to exploring sleep, to understand adolescent experience as broadly and as richly as possible.

The author conducted this study at a time whereby services in their home country (the UK) were identified as being chronically underfunded, and the nation was experiencing a cost-of-living crisis. The author therefore acknowledges her interest in social justice and understanding the influence of systems, and how adolescents relate to systems and the beliefs/attitudes modelled around them, likely influenced the design and delivery of this review.

Appendix H: School Email Invitation

Dear [school headteacher],

Study Title: Investigating the Need for, and Acceptability of, a Mental Health Practitioner-Delivered School-Based Sleep Intervention for Adolescents

Thank you for taking time to read this email.

I am contacting you about the potential to take part in an exciting research project focused on young people and their sleep!

As you are aware, our Mental Health Support Team have been delivering a whole-school sleep workshop across secondary schools in the area to support young people to achieve good quality sleep. We are now working with a research team based at the University of Sheffield who want to understand how school students feel about taking part in the workshop and whether it is helpful for them.

This project is really important in finding out what does and does not work in helping young people support their own health and wellbeing, particularly in evidencing preventative and early intervention approaches. The team at the university hope to publish the results of this study which will go towards evidencing effective whole-school approaches for young people. Broadly speaking, the research will aim to understand whether the approach we are using has a positive impact on the students.

I understand this isn't much information for you to base a decision upon! So, to help your decision I have included the information and consent form developed by the research team for you to review if you are interested. After reading this email and the forms, if you think your school would be interested in taking part in the research, please just let me know by responding to this email. I will then let the Lead Researcher know who will make direct contact with you to answer any questions you may have and let you know what will be involved. If after this you are happy for your school to be involved, written consent from you will be collected by me/the Lead Researcher.

Thank you for taking the time to read this email and the attached information, I look forward to hearing whether your school is interested in this exciting project!

Kind regards,

EMHP Name and Title

Appendix I: School Information and Consent Form

[Head Teacher name]

[School name and address]

[Date]

Study Title	**Investigating the Need for, and Acceptability of, a Mental Health Practitioner-Delivered School-Based Sleep Intervention for Adolescents**
Lead Researcher Details	Laura Hughes, Trainee Clinical Psychologist Lhughes7@sheffield.ac.uk University of Sheffield, Department of Psychology, Floor F, Cathedral Court,1 Vicar Lane, Sheffield, UK, S1 2LT
Version/Date	2/14.10.2022
Health Research Authority Approval	322494

Dear [Head teacher],

My name is Laura Hughes, I am a Trainee Clinical Psychologist at the University of Sheffield. As part of the Government's aim to transform the health and wellbeing of young persons across the UK, the Educational Mental Health Practitioners (EMHPs) from your local Mental Health Support Team (MHST) have been delivering workshops to young people across local secondary schools. One of these is focused

on sleep, with the aim of providing accessible information to young people to encourage them to make positive changes to their sleep or seek support if they are having difficulties.

From prior research, we know whole school health promotion approaches can be an effective way of improving adolescent health and wellbeing, but at present more evidence is needed to understand how best to target sleep issues. To be able to understand whether the workshop is an effective way to do this, we would like to collect some data during the workshop.

Consent from the school would allow us to present your students with some questions delivered online (using Slido) during the workshop run by the EMHP. The questions will ask for demographic information, their current sleep, and their experience of the workshop (full questions enclosed). All responses from your students will be anonymous and the data collected will be kept strictly confidential. Critically, the students have the right not to take part if they do not want to, or ask for their data not to be used, which will be clearly explained to them immediately prior to the workshop. An information leaflet will be provided to both students and their parents/guardians, and the parents/guardians will also be able to opt their child out of the survey if they wish (enclosed).

Consent from the school would also mean being able to advertise the second part of the study, an interview, at the end of the workshop and via a poster to be placed in your school (enclosed). This part of the research would ask for a sample of students to engage in an interview with me about their experience of the workshop. I will also be seeking parental consent for the interview, with information sheets and consent forms available for students to take home to parents/guardians at the end of the workshop. These interviews would take place online, and although not during lesson time, will take place in school staff and EMHP working hours should any safeguarding issues arise the School Safeguarding Officer (SSO) and EMHP need to be aware of.

The University of Sheffield and NHS have strict ethical procedures on conducting research with young people, consistent with current British Psychological Society (BPS) guidelines of testing within a school environment. This project is sponsored by the University of Sheffield and Bradford District Care NHS Foundation Trust and has been ethically approved by the Health Research Authority.

Thank you in advance for considering this request. I would be grateful if you would now read the information sheet below that gives more details about the study and if you agree please fill in the consent form enclosed on behalf of your school.

Thank you for your time and attention. I look forward to hearing from you. Please do not hesitate to contact me if you have any questions.

Yours Sincerely,

Laura Hughes

Enclosed
1. **School Information sheet**
2. **School Consent Form**
3. **Workshop Survey Information Sheet (Child)**
4. **Workshop Survey Information Sheet (Parent)**
5. **Workshop Opt-Out Form (Parent)**
6. **Workshop Survey Questions**
7. **Interview Advert**

1. Information Sheet Head Teacher

Investigating the Need for, and Acceptability of, a Mental Health Practitioner-Delivered School-Based Sleep Intervention for Adolescents

Who is the Lead Researcher? My name is Laura Hughes. I am a Trainee Clinical Psychologist at the University of Sheffield. This study forms part of my Doctorate in Clinical Psychology Training Program and is sponsored by the University of Sheffield and Bradford District Care NHS Foundation Trust. This study has been approved by The Health Research Authority (Application number: 322494)

Head teacher's consent: We seek consent from you to collect this data from students who take part in the Educational Mental Health Practitioner (EMHP) led Sleep Health Promotion Workshop in your school. We are following British Psychological Society guidelines on this which state that "*in relation to the gaining of consent from children and young people in school or other institutional settings, where the research procedures are judged by a senior member of staff or other appropriate professional within the institution to fall within the range of usual curriculum or other institutional activities, and where a risk assessment has identified no significant risks, consent from the participants and the granting of approval and access from a senior member of school staff legally responsible for such approval can be considered sufficient*"

What is this study about? Young people have shared that sleep difficulties are a frequent problem they experience. Your school's local Mental Health Support Team EMHPs have been delivering a sleep workshop across schools in the locality as per usual practise. We would like to understand whether this program is helpful for young people in terms of developing their knowledge of and improving their sleep. This will involve the students completing an online survey delivered via SLIDO during the workshop.

After the sleep workshop has been completed, the Lead Researcher will briefly advertise another component of the project – conducting online interviews with a sample of students who have attended the workshop. Whilst the interviews will not take place at the school, it will be conducted during working hours of your schools Safeguarding Support Officer (SSO) and the EMHP should any safeguarding concerns arise and they need to be notified. The Lead Researcher will also be seeking additional parent / guardian consent for the interviews.

What are the possible disadvantages of taking part? Some of the questions during the survey will ask the students about how they feel about their sleep and wellbeing. Some of these questions may be uncomfortable and/or upsetting. Students will be given the option to speak with the EMHP delivering the workshop immediately after if they have any concerns. If the EMHP felt it was necessary for the student to access further support they will be able to signpost them to the appropriate service.

What are the possible benefits of taking part? We understand that this study will not change things immediately for your students who have taken part in the survey. But we hope that from the findings we will get a much better understanding of how well the sleep workshop works, and ways in which it can be improved for young people. This could then lead to better sleep programs and help many more young people with getting good sleep.

How will we use information about your students? We will need to use the following information from your students for this study: Name, Age, Gender, Ethnicity.

We will use this information to do the study and to make sure that the study is being done properly. People who do not need to know who your school or its students are will not be able to see this information. Whilst your students will need to provide their name for parental opt-out purposes, their data will be assigned a code number for anonymity during the study. Their name and any other identifiable data will be destroyed at the end of the study. We will keep all information about your students safe and secure. We will write our reports in a way that no-one can work out that your students took part.

What are your choices about how your student's information is used? Your students can stop being part of the study at any time, without giving a reason, but we will keep their anonymous information if they have chosen not to withdraw within the four-week period after the workshop. We need to manage your students records in specific ways for the research to be reliable. This means that we won't be able to let you or your students see or change the data we hold about them.

If you agree for your students to take part in this study, they will have the option to have their data from this study used in future research. Their anonymous data will be stored in the University of Sheffield's ORDA Repository (research storage system). No one will know from this data that the information has come from your students. All other identifiable information about your students will be destroyed at the end of the study.

Where can you find out more about how your students information is used? You can find out more about how we use your information:

- at www.hra.nhs.uk/information-about-patients/
- by asking one of the research team (see contact details below)

Confidentiality: All information we collect will be kept strictly confidential. Your students will not be identifiable in any reports or publications. However, if during the workshop a student shares any information that worries us, this information may need to be passed to your EMHP and/or your SSO. If this were to happen, we will follow the safeguarding procedures already in place at your school.

Deciding to take part: Your school's involvement in this project is completely up to you. If you decide you do not want your school to take part, you do not have to tell us why. If you agree to your school taking part, your students will still be able to choose whether or not they do the survey. They can also choose to stop filling in the survey at any time or choose not to answer all of the questions. If they complete the survey but decide later they don't want to be in the study, they have four weeks from the date of the workshop to ask for their data to be removed; they can contact the Lead Researcher or EMHP to withdraw their data.

What if something goes wrong? If you have a concern about any aspect of this study, you can contact the Lead Researcher and/or their Academic Supervisor who will do their best to answer your questions. If you remain unhappy and wish to complain formally, you can do this by contacting Professor Elizabeth

Milne, the Head of the Psychology Department at the University of Sheffield. All contact details are listed below.

In the event that something does go wrong and one of your students is harmed during the research and this is due to someone's negligence, then they may have grounds for a legal action for compensation against the University of Sheffield but they may have to pay their legal costs. The University has insurance for events which it may be legally liable for related to this study. The normal National Health Service complaints mechanisms will also be available to you/your student and their family as well.

Want to talk to us or ask questions? Please get in touch:

- [INSERT EMHP NAME AND WHERE TO CONTACT THEM]
- Laura Hughes (Lead Researcher): lhughes7@sheffield.ac.uk, 0114 2226650 (please leave a message with Amrit Sinah and Laura will return your call)
- Dr Charlotte Wright (Academic Supervisor): charlotte.wright@sheffield.ac.uk
- Professor Elizabeth Milne (Head of Psychology): e.milne@sheffield.ac.uk

2. Headteacher Consent Form

Study Title	**Investigating the Need for, and Acceptability of, a Mental Health Practitioner-Delivered School-Based Sleep Intervention for Adolescents**
Lead Researcher Details	Laura Hughes, Trainee Clinical Psychologist Lhughes7@sheffield.ac.uk University of Sheffield, Department of Psychology, Floor F, Cathedral Court,1 Vicar Lane, Sheffield, UK, S1 2LT
Version/Date	2/14.10.2022
Health Research Authority Approval	322494

Please tick the appropriate boxes	**Yes**	**No**
I confirm I have the authority to give permission for my school to take part.		
I confirm I have read the information sheet dated 14th October 2022 (version 2) for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.		
I understand that my school's participation is voluntary and that we are free to withdraw at any time. I do not have to give any reasons for why I no longer want the school to take part and there will be no adverse consequences if I choose to withdraw.		
I understand that data collected from the students will be anonymous, and they have the right not to take part if they do not want to, and the right to withdraw.		
I understand that data collected during the study may be looked at by individuals from the University of Sheffield, from regulatory authorities or from the NHS Trust, where it is relevant to the research.		

I understand that the information the school and students provide will be held securely (in line with data protection requirements at The University of Sheffield), and that the students anonymised data will be placed in an online archive for sharing and use by other authorised researchers to support other research in the future. No one will be able to identify the school or its students from this information.		
I agree for my school to take part in this project		

As researchers, we have a duty of care to protect all participants during their engagement in this study. Whilst we aim to keep all information confidential, in the unlikely event information is shared which leads us to believe one of your students or someone else may come to harm, we will need to inform your schools Safeguarding Support Officer. Please provide the contact details of the Officer:

Email:____

__

Telephone:____

__

Headteacher Name [printed]	Signature	Date
Lead Researcher Name [printed]	Signature	Date

Please return this signed consent form to the Lead Researcher's email address if you have a digital/scanned copy, or the Lead Researcher's university postal address via freepost if you wish to return a paper copy (please contact the researcher for a freepost envelope if this was not included with the paper copy).

Should you like further information, please contact the Lead Researcher via email or post.

Appendix J: Parent/Caregiver Survey Opt-Out Form

To be completed by a parent or guardian who DOES NOT AGREE to their child taking part in the sleep workshop survey.

Study Title	Investigating the Need for, and Acceptability of, a Mental Health Practitioner-Delivered School-Based Sleep Intervention for Adolescents

Lead Researcher Details	Laura Hughes, Trainee Clinical Psychologist Lhughes7@sheffield.ac.uk University of Sheffield, Department of Psychology, Floor F, Cathedral Court,1 Vicar Lane, Sheffield, UK, S1 2LT
Version/Date	1/14.10.2022
Health Research Authority Approval	322494

I confirm that I have read the information sheet dated 14th October 2022 (version 1) for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

○ Yes

○ No

I **DO NOT** agree for my child to take part in the above study.

○ Yes

○ No

Name of Child [printed]	Name of Parent/Guardian [printed]	Parent/Guardian Signature	Date

Please return this form to the Lead Researcher's email address if you have a digital copy, or the Lead Researcher's university postal address via freepost if you have a paper copy (please contact the researcher for a freepost envelope if this was not included).

Should you like further information, please contact the Lead Researcher via email or post.

Appendix K: Participant Survey Information Sheet

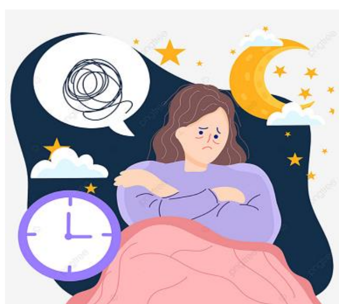
Study Title: Investigating the Need for, and Acceptability of, a Mental Health Practitioner-Delivered School-Based Sleep Intervention for Adolescents

Please read this information before you decide to take part in the study. If you have any questions please let your parent / guardian know. They can help you speak with the Lead Researcher who can answer your questions.

Who is the Lead Researcher?: My name is Laura Hughes. I am a Trainee Clinical Psychologist at the University of Sheffield. This study is part of my Clinical Psychology Training. This study is sponsored by the University of Sheffield and Bradford District Care NHS Foundation Trust. It has been approved by The Health Research Authority (Application number: 322494)

Information Sheet and Consent

You are being invited to take part in this study. Before you decide to take part, it is important you know why the study is being done and what you will be asked to do. Please read this information carefully to help you decide about taking part. Thank you for reading this.



What is the Project About?

Young people have shared that getting good sleep is difficult for them. To help with this, your school's Mental Health Support Team have been giving sleep workshops to schools in your area. This study wants to see how you feel about this workshop, and whether it helps you understand more about sleep and get better sleep.

What this study involves

You are being invited to take part in an online survey during the sleep workshop. This will be done on SLIDO. This survey asks you about your sleep, wellbeing, and how you found the workshop. This is so we can understand more about young people's sleep and how helpful the workshop is.

How will we use information about you?

We will need to use your **name, age, gender, and ethnicity** for this study. We will use this to do the study and make sure it is being done properly. People who do not need to know who you are will not see your information. Your information will have a code number instead. Once we have finished the study, we will keep some of the data so we can check the results. We will write our reports in a way that no-one can work out you took part. We will keep all your information safe and secure.

What are your choices about how your information is used?

You can stop being part of the study at any time, without giving a reason. But we will keep the anonymous information about you we already have after the withdrawal period had passed. You have four weeks from the day you do the survey to ask for your information to be withdrawn. You can ask your parent/caregiver to contact the research team to do this or speak to your EMHP.

We need to manage your records in specific ways for the research to be reliable. This means that we won't be able to let you see or change the data we have about you.

If you agree to take part, you will also be able to say if you want to have your anonymous data used in other studies. This data will be stored in the University of Sheffield's research storage, which is called the ORDA repository. No one will know this data has come from you.

Where can you find out more about how your information is used?

You can find out more about how we use your information:

- at www.hra.nhs.uk/information-about-patients/
- by asking your Educational Mental Health Practitioner (EMHP)

Deciding to take part:

1. Taking part is totally up to you! You do not have to take part if you don't want to.
2. If you want to take part you will be asked to agree to being involved at the beginning of the survey.
3. Even after you have agreed, you can change your mind at any time and not do the survey.
4. If you take part in the survey, but decide later you didn't want to, you can ask for your data to be destroyed **within four weeks from the date of the workshop**. After this time the research team will have already started writing the reports which includes your data.
5. Please speak to your EMHP if you want to remove your survey answers from the study. They will tell the research team who will destroy your data. [EMHP NAME AND CONTACT METHOD INSERTED].

Are there any downsides to taking part?

Some of the questions the survey asks may make you feel uncomfortable or upset. You can stop doing the survey at any time. If after the survey you need more support, please speak with someone. This could be your parent/guardian,

EMHP, your school Safeguarding Support Officer (SSO), and/or your personal tutor. If you need more support, please speak to your GP.

Are there any benefits to taking part?

We know this study will not change things for you right now. But we hope it will help us understand how well the sleep workshop works and ways to improve it. This could lead to better sleep programs and help many more young people with getting good sleep.

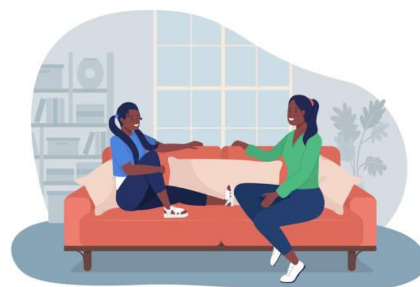
Confidentiality

All information you give in the survey will be kept private. However, if you speak to the Lead Researcher and/or EMHP during the workshop, and they are worried about you, they may need to tell your parent / guardian and your school's SSO. If this happened, the Lead Researcher / EMHP will talk to you about what they will do and who they will speak to.

What if something goes wrong?

If you are worried about any part of this study, please speak with your parent / guardian first. If something does go wrong and you are harmed because you weren't supported properly, the University of Sheffield and/or NHS may be able to help you. Please speak to your parent / guardian if this happens.

Please speak with your parent / guardian if you have any questions. If they can't help, they can help you speak with the Lead Researcher who will do their best to answer your questions.



Appendix L: Parent/Caregiver Survey Information Sheet

Study Title: Investigating the Need for, and Acceptability of, a Mental Health Practitioner-Delivered School-Based Sleep Intervention for Adolescents

Please read the following information before you agree to your child taking part in this study. If you have any questions about the information on this sheet please contact the Lead Researcher (contact details are listed at the end).

Who is the Lead Researcher?

My name is Laura Hughes. I am a Trainee Clinical Psychologist at the University of Sheffield. This study forms part of my Doctorate in Clinical Psychology Training Program and is sponsored by the University of Sheffield and Bradford District Care NHS Foundation Trust. This study has been approved by The Health Research Authority (Application number: 322494).

Information Sheet and Consent

Your child is being invited to take part in this study. Before you decide whether they can take part, it is important for you to understand why the study is being done and what it involves. Please read the information carefully to help you decide. Thank you for reading this.

What is the Project About?

Young people have shared sleep difficulties are a common problem they experience. Your child's school is linked to a local Mental Health Support Team whose Educational Mental Health Practitioners (EMHPs) deliver a sleep workshop to young people in secondary schools. Your child will be attending this workshop as part of their school day. This study wants to see whether this workshop helps young people understand and improve their sleep.

What this study involves

Your child is being invited to complete a survey during the workshop on the survey platform SLIDO. They will be asked questions about their sleep, wellbeing, and how they found the workshop. The answers your child provides will be made anonymous, so nobody will know your child has taken part.

How will we use information about your child?

We will need to use the following information from your child for this study:

- Name
- Age
- Gender
- Ethnicity

We will use this information to do the study and to make sure that the study is being done properly. People who do not need to know who your child is will not be able to see

your child's information. Your child's data will have a code number instead. We will keep all information about your child safe and secure.

Once we have finished the study, we will keep some of the data so we can check the results, but will destroy identifiable data e.g., their name. We will write our reports in a way that no-one can work out that your child took part.

What are your choices about how your child's information is used?

Your child can stop being part of the study at any time, without giving a reason, but we will keep their anonymous information if they have chosen not to withdraw it within the four-week period after the workshop. We need to manage your child's records in specific ways for the research to be reliable. This means that we won't be able to let you or your child see or change the data we hold about them.

If you agree for your child to take part in this study, your child will have the option to have their data from this study used in future research. Their anonymous data will be stored in the University of Sheffield's ORDA Repository (research storage system). No one will know from this data that the information has come from your child. All other identifiable information about your child will be destroyed at the end of the study.

Where can you find out more about how your information is used?

You can find out more about how we use your information

- at www.hra.nhs.uk/information-about-patients/
- by asking one of the research team (see contact details below)

Confidentiality

All information we collect will be kept strictly confidential. Your child will not be identifiable in any reports or publications. However, if during the workshop your child shares any information that worries us, this information may need to be passed to you and/or the school's Safeguarding Support Officer (SSO). If this were to happen, we will follow the safeguarding procedures already in place at the school.

Deciding to take part

Your child's involvement in this project is completely up to you and them. If you decide you do not want your child to take part, you do not have to tell us why. **If this is the case, please sign and send the opt-out form to the Lead Researcher's email**

address no later than four weeks after the workshop/survey has happened. Your child's data will then be destroyed and not included in the study.

If you agree to your child taking part, they will still be able to choose whether or not they do the survey. They can also choose to stop filling in the survey at any time or choose not to answer all of the questions. If they complete the survey but decide later they don't want their answers to be included in the report, they have four weeks from the date of the workshop to ask for their data to be removed. If this is the case, please contact the Lead Researcher to withdraw your child's data.

If you or your child decide to opt-out/withdraw later than the four-week period, as data analysis will have begun, their anonymous data will still be included in the report.

If you agree to your child taking part, you do not have to send us anything.

Are there any downsides to taking part?

Some of the questions during the survey ask about how your child feels about their sleep and wellbeing. This could make your child feel uncomfortable or upset. We advise you and your child to speak with someone if this has happened. This could be the EMHP within your child's school, and/or the SSO. These people are trained to support your child's health and wellbeing. If your child requires more support, please speak with their GP.

Are there any benefits to taking part?

We understand that this study will not change things immediately for your child, but we hope from the findings we will get a much better understanding of how well the sleep workshop works, and ways in which it can be improved for young people. This could then lead to better sleep programs and help many more young people with getting good sleep.

What if something goes wrong?

If you have a concern about any aspect of this study, you can contact any of the researchers or the schools EMHP who will do their best to answer your questions. If you remain unhappy and wish to complain formally, you can do this by contacting Professor Elizabeth Milne, the Head of the Psychology Department at the University of Sheffield.

In the event that something does go wrong and your child is harmed during the research and this is due to someone's negligence, then you may have grounds for a legal action for compensation against the University of Sheffield but you may have to pay your legal costs. The University has insurance for events which it may be legally liable for related to this study. The normal National Health Service complaints mechanisms will also be available to you as well.

Want to talk to us or ask questions? Please get in touch:

- [INSERT EMHP NAME AND WHERE TO CONTACT THEM]
- [INSERT SSO NAME AND WHERE TO CONTACT THEM]
- Laura Hughes (Lead Researcher): lhughes7@sheffield.ac.uk, 0114 2226650 (please leave a message with Amrit Sinah and Laura will return your call)
- Dr Charlotte Wright (Academic Supervisor): charlotte.wright@sheffield.ac.uk
- Professor Elizabeth Milne (Head of Psychology): e.milne@sheffield.ac.uk

Appendix M: Interview Advert

Participants Wanted!

Have you taken part in a school sleep workshop? Age 13-15? If you are, we would like to interview you about your experience!

What is this study about?

Study Title: Investigating the Need for, and Acceptability of, a Mental Health Practitioner-Delivered School-Based Sleep Intervention for Adolescents

Researchers are interested in finding out the best ways to help young people with their sleep. This study wants to see whether the workshop is helpful, and how you felt about taking part. This will help us to understand ways to help young people with their sleep and wellbeing.

What will it involve?

Taking part in one 30-45 minute interview with the Lead Researcher by video. Once the researcher has completed the interview process with everyone selected, they will then email you to ask for your feedback on the interview results. You will receive an eVoucher to thank you for your time. Even if you want to take part now, you can withdraw from the study at any time. But, your anonymous data will be kept if you withdraw from April 2023 onwards.

Please note, not everyone who applies to be interviewed will be selected. If you would like more information please speak to your Educational Mental Health Practitioner to find out more!

[EMHP NAME TO BE ENTERED]

Version 2, IRAS: 322494, 14.10.2022

Appendix N: Participant Interview Information Sheet

Study Title: Investigating the Need for, and Acceptability of, a Mental Health Practitioner-Delivered School-Based Sleep Intervention for Adolescents

Please read this information before you decide to take part in the study. If you have any questions please let your parent / guardian know. They can help you speak with the Lead Researcher who can answer your questions.

Who is the Lead Researcher?: My name is Laura Hughes. I am a Trainee Clinical Psychologist at the University of Sheffield. This study is part of my Clinical Psychology Training. This study is sponsored by the University of Sheffield and Bradford District Care NHS Foundation Trust. It has been approved by The Health Research Authority (Application number: 322494) and the University of Sheffield Ethics Board (Application number: 045578).

Information Sheet and Consent

You are being invited to take part in this study. Before you decide to take part, it is important you know why the study is being done and what you will be asked to do. Please read this information carefully to help you decide about taking part.

What is the Project About?

Young people have shared that getting good sleep is difficult for them. To help with this, your school's Mental Health Support Team gave a sleep workshop. This study wants to see how you felt about this workshop, and whether it helped you to make positive changes to your sleep.

What this study involves:

This study would like to interview young people of different ages, genders, and ethnicities about the workshop. Because of this, we would like you to tell us your age, gender, and ethnicity first. This will help us decide who to interview as we want all young people to be represented in the study. Because of this, you may or may not be picked for interview.

If you are picked, you will be asked to take part in a video interview with the Lead Researcher. They will ask what you think about sleep and how you found the workshop. This interview will be recorded and written up by the researcher. This information will be made anonymous so other people won't know you have taken part. You will also be asked to give some email feedback on the results once all interviews have been done. You will be sent the final results when the study is over.

The study will take 45-60 minutes to complete (including the interview and email feedback). You can take a break any time during the interview. You can also choose not to answer any of the questions if you don't want to.

Reimbursement for Your Time

If you are picked for the interview, you will get a £10 voucher sent to your parent / guardian on email. They will be asked to sign a form to say they have given you the voucher.

How will we use information about you?

We will need to use your **age, gender, and ethnicity** for this study. We will use this to do the study and make sure it is being done properly. People who do not need to know who you are will not see your information. Your information will have a code number instead. Once we have finished the study, we will keep some of the data so we can check the results. We will write our reports in a way that no-one can work out you took part. We will keep all your information safe and secure.

What are your choices about how your information is used?

You can stop being part of the study at any time, without giving a reason. But we will keep the anonymous information about you we already have, unless you have asked for it to be deleted before April 2023. We need to manage your records in specific ways for the research to be reliable. This means that we won't be able to let you see or change the data we have about you.

If you agree to take part, you will also be able to say if you want to have your anonymous data used in other studies. This data will be stored in the University of Sheffield's research storage, which is called the ORDA repository. No one will know this data has come from you.

Where can you find out more about how your information is used?

You can find out more about how we use your information:

- at www.hra.nhs.uk/information-about-patients/

- by asking one of the research team

Deciding to take part:

6. Taking part in this study is totally up to you! You do not have to take part if you don't want to.
7. If you want to take part you will be asked to sign a consent form.
8. Even after you have signed the consent form, you can change your mind at any time and stop taking part. But, we will still keep the anonymous data you have already given unless you ask for it to be deleted before April 2023.

Are there any downsides to taking part?

Some of the questions we ask may make you feel uncomfortable or upset. You can stop the interview or not answer questions at any time, but if you need more support, we recommend you speak with someone after the interview. This could be your parent/guardian, the Educational Mental Health Practitioner (EMHP) at your school, your Safeguarding Support Officer (SSO), and/or your personal tutor. If you require more support, you can also speak with your GP. The researcher will make sure you know how to get in touch with your EMHP and SSO before the interview.

Are there any benefits to taking part?

We know this study will not change things for you right now. But we hope it will help us understand how well the sleep workshop works, and ways it can be improved. This could lead to better sleep programs and help many more young people with getting good sleep.

Confidentiality:

All information will be kept private. However, there are times where this rule may not apply. During the interview, if the researcher is worried about you, they may need to tell your parent / guardian, or your school's EMHP or SSO. If this was needed, the researcher will talk to you about this so you know what they are saying to others.

What if something goes wrong?

If you are worried about any part of this study, please speak with your parent / guardian first. If something does go wrong during the study and you are harmed because you weren't supported properly, the University of Sheffield and/or NHS may be able to help you. Please speak to your parent / guardian if this happens.

Please speak with your parent / guardian if you have any questions. If they can't help, they can help you speak with the Lead Researcher who will do their best to answer your questions.

Appendix O: Parent/Caregiver Interview Information Sheet

Because you are under 16, please ask a parent or caregiver to read this information about the study first, because they need to agree for you to take part.

Study Title: Investigating the Need for, and Acceptability of, a Mental Health Practitioner-Delivered School-Based Sleep Intervention for Adolescents

Who is the Lead Researcher?

My name is Laura Hughes. I am a Trainee Clinical Psychologist at the University of Sheffield. This study forms part of my Doctorate in Clinical Psychology Training Program and is sponsored by the University of Sheffield and Bradford District Care NHS Foundation Trust. This study has been approved by The Health Research Authority (Application number: 322494) and the University of Sheffield (Application number: 045578).

Information Sheet and Consent

Your child is being invited to take part in this study. Before you decide whether or not they can take part, it is important for you to understand why the study is being done and what it involves. Please read this information carefully to help you decide whether or not

you would like them to take part. If anything is unclear, please contact the Lead Researcher. Thank you for reading this.

What is the Project About?

Young people have shared that sleep difficulties are a common problem they experience. Your child's school is linked to a local Mental Health Support Team who deliver sleep workshops across secondary schools. Your child will have attended one during school. This study wants to see whether this workshop helps young people understand and make positive changes to their sleep.

What this study involves

This study would like to interview a variety of young people about their views on sleep and school workshops. Therefore, before the interview, we ask for three pieces of information about your child: their age, gender, and ethnicity. We would like various ages, genders, and ethnicities to be represented in the study. This is because we would like to understand whether the workshop is helpful for lots of young people. As we have a set amount of young people we need to interview, if we reach this with young people fairly represented, your child may not be selected for this study.

If you agree for your child to take part in the interview, we will get in touch to let you know if they have been selected. If they have not been selected we can talk through why this is. If they would still like to feedback about the workshop we will let them know how to do this outside of the study.

If they have been selected, we will organise a phone call with you and your child to talk through this information sheet again and give you both an opportunity to ask questions. They will then be invited to speak with the Lead Researcher in an online video interview. They will be asked to talk about their views on sleep and how they found the workshop. This interview will be audio recorded and then written in a report by the researcher - both will be made anonymous, so nobody will know your child has taken part. Your child will also be asked to give feedback on the report the researcher will put together once all interviews have been completed. This will be done through email.

The time your child will need to give is approximately 45-60 minutes (including the interview and email feedback). Your child can take a break at any point during the

interview and they can also choose not to answer any of the questions without needing to give a reason. Once the study is complete you will receive a summary of the findings to share with your child.

Reimbursement for Your Child's Time

If your child is selected for the study, a £10 voucher will be sent to your email address to give to them. You will be asked to sign a form confirming that you have received this and given it to them. This will be kept securely as a digital copy for 7 years after the end of the project, and then destroyed at this point. This is so University finance and administrative staff can use this information for a financial audit. This is the only staff team who will access this information.

Confidentiality

All information we collect will be kept strictly confidential. Your child will not be identifiable in any reports or publications. However, there are times where this rule may not apply. During the interviews, if the researcher has concerns about your child's wellbeing or safety, they will want to contact you to discuss these concerns. The researcher may also need to pass on information to someone that could help, such as the school's Educational Mental Health Practitioner (EMHP) or Safeguarding Support Officer. If this were to happen, the researcher will talk to you about this to make sure you are aware of what may happen.

How will we use information about your child?

We will need to use information from your child for this research project.
This will include your child's: Name, Age, Gender, Ethnicity.

We will use this information to do the study and to make sure that the study is being done properly. People who do not need to know who your child is will not be able to see your child's information or any contact details. Your child's data will have a code number instead. We will keep all information about your child safe and secure. Once we have finished the study, we will keep some of the data so we can check the results. We will write our reports in a way that no-one can work out that your child took part in the study.

What are your choices about how your information is used?

Your child can stop being part of the study at any time, without giving a reason. However, we will keep the anonymous information about them that we already have

unless they have asked us to erase it. They have until April 2023 to ask for their data to be deleted. We need to manage your child's records in specific ways for the research to be reliable. This means that we won't be able to let you or your child see or change the data we hold about them (unless you or they have asked for it to be deleted before April 2023).

If you agree for your child to take part in this study, your child will have the option to have their data from this study used in future research. Their anonymous data will be stored in the University of Sheffield's ORDA Repository. No one will know from this data that the information has come from your child as all their identifiable information will be destroyed at the end of the study (Sept 2023).

Where can you find out more about how your information is used?

You can find out more about how we use your information

- at www.hra.nhs.uk/information-about-patients/
- by asking one of the research team (see contact details below)

Deciding to take part

Your child's involvement in this study is completely up to you and them. If you decide you do not want your child taking part, you do not have to tell us why. If you agree to your child's involvement, you will be asked to sign a consent form. We will then ask your child to sign an assent form to confirm they are also happy to take part. Even after you and your child have agreed for them to take part, you can both change your mind at any time, and are free to withdraw. The information your child has provided will be kept unless they have asked for it to be deleted before April 2023.

Are there any downsides to taking part?

Some of the questions during the interview ask about how your child feels about their sleep and views about mental health workshops. This could make your child feel uncomfortable or upset. Your child can stop the interview or decline to answer specific questions at any time. We advise you and your child to speak with someone after the interview if this has happened. This could be the EMHP within your child's school, and/or a trusted member of staff at their school, such as the SSO. These people are trained to support your child's health and wellbeing. If you require more support than these people can provide, please speak with your GP. The researcher will make sure you have the contact details for your EMHP and SSO before your child starts the interview.

Are there any benefits to taking part?

We understand that this study will not change things immediately for your child, but we hope from the findings we will get a much better understanding of how well the sleep workshop works, and ways in which it can be improved for young people. This could then lead to better sleep programs and help many more young people with getting good sleep.

What if something goes wrong?

If you have a concern about any aspect of this study, you can contact any of the researchers or the schools EMHP who will do their best to answer your questions. If you remain unhappy and wish to complain formally, you can do this by contacting Professor Elizabeth Milne, the Head of the Psychology Department at the University of Sheffield. All contact details are listed below.

In the event that something does go wrong and your child is harmed during the research and this is due to someone's negligence, then you may have grounds for a legal action for compensation against the University of Sheffield but you may have to pay your legal costs. The University has insurance for events which it may be legally liable for related to this study. The normal National Health Service complaints mechanisms will also be available to you as well.

Want to talk to us or ask questions? Please get in touch:

- Laura Hughes (Lead Researcher): lhughes7@sheffield.ac.uk, 0114 2226650 (please leave a message with Amrit Sinah and Laura will return your call)
- Dr Charlotte Wright (Academic Supervisor): charlotte.wright@sheffield.ac.uk
- Professor Elizabeth Milne (Head of Psychology): e.milne@sheffield.ac.uk

Appendix P: Participant Interview Assent Form

If you are under 16, your parent/guardian have said they are happy for you to take part in this study. But it is important that you decide if want to. Please read the questions on this form carefully to let us know if you understand the study and if you want to take part.

Study Title	Investigating the Need for, and Acceptability of, a Mental Health Practitioner-Delivered School-Based Sleep Intervention for Adolescents
Lead Researcher Details	Laura Hughes, Trainee Clinical Psychologist
Version/Date	2/14.10.2022
Health Research Authority Approval	322494
University of Sheffield Ethical Approval	045578

I have read and understood the information sheet for this study dated 14th October 2022 (version 2), or it has been read to me. I have had time to think about the information and ask questions.

○ Yes

○ No

(If you answer No to this question, please do not carry on with this form until you understand what this study is about and what you will need to do)

I understand that taking part is my choice. I can stop taking part at any time without giving any reason. I also know that I don't have to answer any of the questions if I don't want to.

○ Yes

○ No

I understand there is a chance I might not be picked to be interviewed, as the study might not need to interview everyone that wants to take part.

○ Yes

○ No

I understand that taking part in this study means my interview will be recorded, and it will be written down. I understand when it is written down it will not include any information that tells people who I am. I agree for the researcher to use this in the research.

◯ Yes

◯ No

I understand that the information I give in the study might be looked at by people from the University of Sheffield or Bradford District Care NHS Foundation Trust. I agree that these people can look at the information I have given and can have access to my records if it is about the study only.

◯ Yes

◯ No

I understand that the information I give will be protected by the University of Sheffield. I agree that the information I give can be kept in an online file so other researchers can use this in their research. This information will not have any of my personal details so no one can find out who I am from this information.

◯ Yes

◯ No

I agree to take part in this study.

◯ Yes

◯ No

Name of Participant [printed]	Signature	Date

Name of Lead Researcher [printed]	Signature	Date

Before we select young people for the interview, we would like to know some details about who you are. Please can you tick in the box your:

Age: ☐10

☐11

☐12

☐13

☐14

☐15

Gender: ☐Female

☐Male

☐Non-Binary

☐Prefer to Self-Identify

☐Prefer not to say

Ethnicity: ☐ Asian/Asian British

☐Black/African/Caribbean/Black British

☐White

☐Mixed heritage

☐Other

Thank you for this information.

Please ask your parent/guardian to return your signed form to the Lead Researcher along with their consent form.

Appendix Q: Parent/Caregiver Interview Consent Form

Dear parent / legal guardian - Please read the following questions carefully to let us know if you understand what the study involves and if you are happy for your child (Under 16) to take part.

Please make sure you have read the information about this study before answering these questions.

Study Title	Investigating the Need for, and Acceptability of, a Mental Health Practitioner-Delivered School-Based Sleep Intervention for Adolescents
Lead Researcher Details	Laura Hughes, Trainee Clinical Psychologist Lhughes7@sheffield.ac.uk University of Sheffield, Department of Psychology, Floor F, Cathedral Court,1 Vicar Lane, Sheffield, UK, S1 2LT
Version/Date	2/14.10.2022
Health Research Authority Approval	322494
University of Sheffield Ethical Approval	045578

I confirm that I have read the information sheet dated 14th October 2022 (version 2) for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

◯ Yes

◯ No

(If you answer No to this question, please do not proceed with this consent form until you are fully aware of what your child's participation in the study will mean.)

I understand there is a chance my child may not be selected to partake in this study as the study may reach participant capacity prior to my child being interviewed.

◯ Yes

◯ No

I understand that if my child is selected for the study, their participation is voluntary and they are free to withdraw at any time until April 2023 without giving any reason, without their education, medical care, or legal rights being affected.

◯ Yes

◯ No

I understand that if my child is selected for the study, they will engage in a recorded interview and their answers will be saved as a written report. I agree to my child to be recorded and for the anonymised recordings and reports to be used in the research.

◯ Yes

◯ No

I understand that data collected during the study may be looked at by individuals from the University of Sheffield, from regulatory authorities or from the NHS Trust, where it is relevant to my child's taking part in this research. I give permission for these individuals to have access to my child's records.

◯ Yes

◯ No

I understand that the information my child provides will be held securely (in line with data protection requirements at The University of Sheffield), and that my child's anonymised data will be placed in an online archive for sharing and use by other authorised researchers to support other research in the future. No one will be able to identify my child from this information.

◯ Yes

◯ No

I agree for my child to take part in the above study.

◯ Yes

◯ No

As researchers, we have a duty of care to protect your child, and others, during their engagement in this study. Whilst we aim to keep all information shared confidential, in the unlikely event information is shared which leads us to believe your child or someone else may come to harm, we will need to contact you. Please provide your contact email and telephone:

Email:____

Telephone:____

We will also be contacting your email address to provide you with the £10 e-voucher to give to your child if they are selected for interview.

Your contact details will not be used for any other purpose and will not be shared with anyone else.

Name of Parent/Guardian [printed]	Signature	Date
Name of Lead Researcher [printed]	Signature	Date

Please return this form and your child's form (both signed) to the Lead Researcher's email address if you have a digital copy, or the Lead Researcher's university postal address via freepost if you have a paper copy (please contact the researcher for a freepost envelope if this was not included). The Lead Researcher will then return a copy with their signature to you.

Should you like further information, please contact the Lead Researcher via email or post.

Appendix R: Respondent Validation Correspondance

Email

Dear [Participant] & [Parent/Caregiver],

I hope this email finds you both well. Thank you again X for taking part in the sleep research interview, you have made a big difference to this project.

As I mentioned during the interview, I am sending a summary of the results, which are attached to this email. Please take a few minutes to read them through, as I would really like some feedback on what we found. As you know, this research was looking to understand what a group of young people thought about sleep and sleep workshops.

After reading the results, we would like you to answer the following questions:

1. Were your opinions on sleep and the workshop included in the results?
2. Are there any opinions you have about sleep or the workshop that weren't included?
3. Do you have any further feedback on the workshop which would be helpful to talk about in the report?

Once we have your feedback, we will be using it to edit the results that we have found. Once the research has been fully written up, we will make sure to share it with you so you can read the full report.

I look forward to hearing from you.

Kind regards,

Laura

Sleep Interview Results

Is sleep valuable?

Many participants said that sleep was valuable to them, sharing it was important for their mood, activity, schoolwork, and leaving them feeling recharged. Many participants spoke about using different things to help them sleep, such as reading or taking a bath, and most of them had a set bedtime routine. Many participants also spoke about how their parents were important in supporting their bedtime routine, and that it was their parents that helped them to realise how important sleep is. Some participants said as they had gotten older, their parents became looser with their boundaries about bedtime, but that they still had some influence. These participants were also the ones who said that although they understood sleep was important, this changed depending on the next day. For example, if they had school, sleep was important, but on a weekend, it wasn't a priority.

Why was the workshop given?

There were a few participants who didn't understand why the workshop was being given to them or their friends. They shared they were a bit uncertain about what the workshop aimed to do. Other participants said however they had a clear understanding of why a workshop on sleep was being given to them. They said they were aware that young people sometimes didn't get enough sleep, and that they needed more information and help with this.

Attitude towards the workshop:

Many participants expressed positive feelings towards the workshop, sharing it was something of interest to them and they had a sense of excitement and curiosity about attending. Some participants who reported feeling positive also shared this was because they liked doing the workshop instead of their typical school lesson. They said that the workshop being different made it more interesting and important to them. Whilst feeling positive towards the workshop was common, some participants also reported being unsure about taking part, sharing they had been a bit nervous about what to expect.

Effort needed for the workshop:

Most participants said the workshop didn't take too much effort, saying they appreciated how long it was, what information was included, and how it wasn't too overwhelming to take part. Participants also said that workshop interactivity was an important factor when it came to thinking about effort. They said the activities, such as videos, surveys, and discussions, helped them to stay focused. However, some participants said there still needed to be more interactive work for the workshop to be more helpful.

The setting and environment

Group size and setting were important to participants in being able to take part fully. Whilst some participants enjoyed being in a larger group, some said they were too distracting. However, all participants agreed that the workshop should be delivered in schools. They said that it felt like a good place to do it, and it made it accessible to everyone. Another thing participants said was

important was having someone from outside of the school running the workshop. All participants said having an outside person increased their motivation to take part and made them trust the information more.

Was the workshop effective?

The workshop aimed to improve sleep knowledge and encourage young people to make positive changes to their sleep. Most participants said they felt they had improved their knowledge of sleep because of the workshop, although some reported they had forgotten what they had learnt. Interestingly, most participants did say the workshop helped them to realise how important sleep really was, and that this made them think about their sleep. However, although knowledge and importance increased, not many participants went on to change their sleep. Those who did talked about having more of a routine than before. To improve the workshop, most participants said that having further information such as a leaflet, or in a follow-up session, would be helpful. Even though the workshop didn't completely achieve its aims of improving sleep, most participants said they would recommend the workshop to a friend who was struggling with sleep.

Was the workshop worth it?

There was an interesting split between participants, with half of them saying they preferred it to other activities offered at school, and the other half not sure about whether it was worth it overall. The participants who preferred it, said this was because they hadn't had to give up an important lesson to attend, and because they felt sleep was really important. Some of them even said they wanted the workshop to be given to them much early in their school life. Those participants who weren't sure, didn't have a bad opinion of the workshop, but it was more that they just wouldn't choose it over other lessons or other topics such as relationships, or careers.

Appendix S: Health Research Authority and University of Sheffield Ethical Approval

Health Research Authority

Miss Laura Hughes
Clinical Psychology Unit
Cathedral Court, The University of Sheffield, 1 Vicar Lane
Sheffield
S1 2LT

Email: approvals@hra.nhs.uk
HCRW.approvals@wales.nhs.uk

29 November 2022

Dear Miss Hughes

HRA and Health and Care Research Wales (HCRW) Approval Letter

Study title:	**Investigating the Need For, and Acceptability of, a Mental Health Practitioner-Delivered School-Based Sleep Intervention for Adolescents**
IRAS project ID:	**322494**
Protocol number:	**176843**
REC reference:	**22/LO/0888**
Sponsor	**University of Sheffield**

I am pleased to confirm that HRA and Health and Care Research Wales (HCRW) Approval has been given for the above referenced study, on the basis described in the application form, protocol, supporting documentation and any clarifications received. You should not expect to receive anything further relating to this application.

Please now work with participating NHS organisations to confirm capacity and capability, in line with the instructions provided in the "Information to support study set up" section towards the end of this letter.

How should I work with participating NHS/HSC organisations in Northern Ireland and Scotland?

HRA and HCRW Approval does not apply to NHS/HSC organisations within Northern Ireland and Scotland.

If you indicated in your IRAS form that you do have participating organisations in either of these devolved administrations, the final document set and the study wide governance report (including this letter) have been sent to the coordinating centre of each participating nation. The relevant national coordinating function/s will contact you as appropriate.

Please see IRAS Help for information on working with NHS/HSC organisations in Northern Ireland and Scotland.

How should I work with participating non-NHS organisations?
HRA and HCRW Approval does not apply to non-NHS organisations. You should work with your non-NHS organisations to obtain local agreement in accordance with their procedures.

What are my notification responsibilities during the study?

The *"After HRA Approval – guidance for sponsors and investigators"* document on the HRA website gives detailed guidance on reporting expectations for studies with HRA and HCRW Approval, including:

- Registration of Research
- Notifying amendments
- Notifying the end of the study

The HRA website also provides guidance on these topics and is updated in the light of changes in reporting expectations or procedures.

Who should I contact for further information?
Please do not hesitate to contact me for assistance with this application. My contact details are below.

Your IRAS project ID is **322494**. Please quote this on all correspondence.

Yours sincerely,
Anna Martin
Approvals Specialist

Email: approvals@hra.nhs.uk

University of Sheffield

Downloaded: 31/05/2023
Approved: 19/05/2022

Laura Hughes
Registration number: 200183600
Psychology
Programme: PSYR09 Clinical Psychology

Dear Laura

PROJECT TITLE: Investigating Adolescent Experience of Engaging in a Sleep Health Promotion Program: An Acceptability Study
APPLICATION: Reference Number 045578

On behalf of the University ethics reviewers who reviewed your project, I am pleased to inform you that on 19/05/2022 the above-named project was **approved** on ethics grounds, on the basis that you will adhere to the following documentation that you submitted for ethics review:

- University research ethics application form 045578 (form submission date: 15/05/2022); (expected project end date: 31/08/2023).
- Participant information sheet 1104077 version 1 (29/03/2022).
- Participant information sheet 1104074 version 4 (15/05/2022).
- Participant consent form 1104078 version 1 (29/03/2022).
- Participant consent form 1104076 version 3 (15/05/2022).
- Participant consent form 1104075 version 3 (15/05/2022).

The following amendments to this application have been approved:

- Amendment approved: 19/12/2022

If during the course of the project you need to deviate significantly from the above-approved documentation please inform me since written approval will be required.

Your responsibilities in delivering this research project are set out at the end of this letter.

Yours sincerely

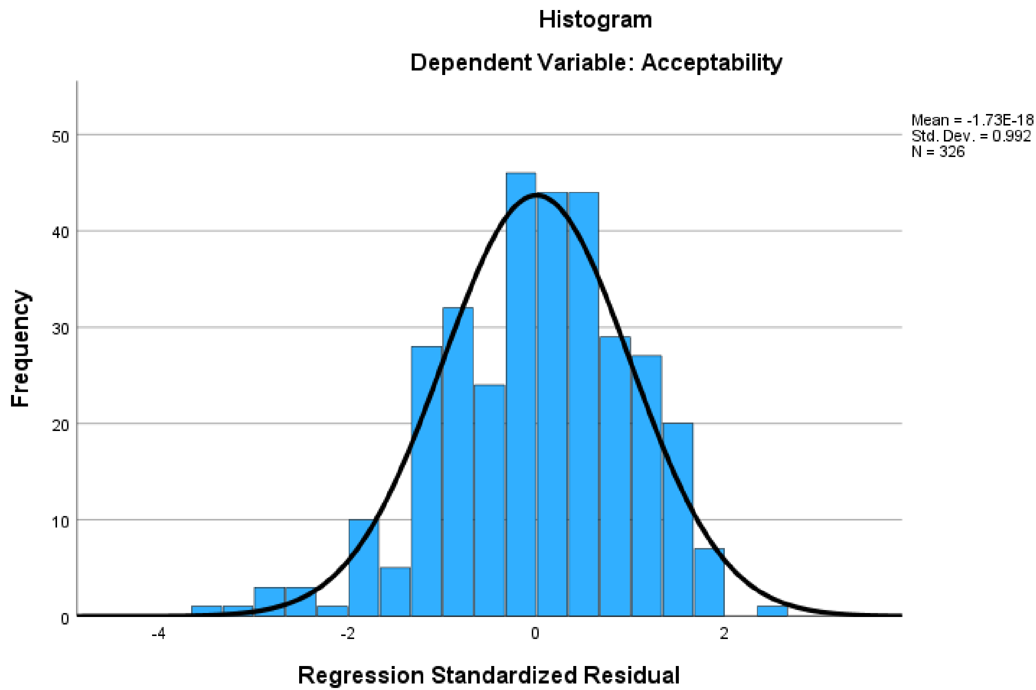
Department Of Psychology Research Ethics Committee
Ethics Administrator
Psychology

Please note the following responsibilities of the researcher in delivering the research project:

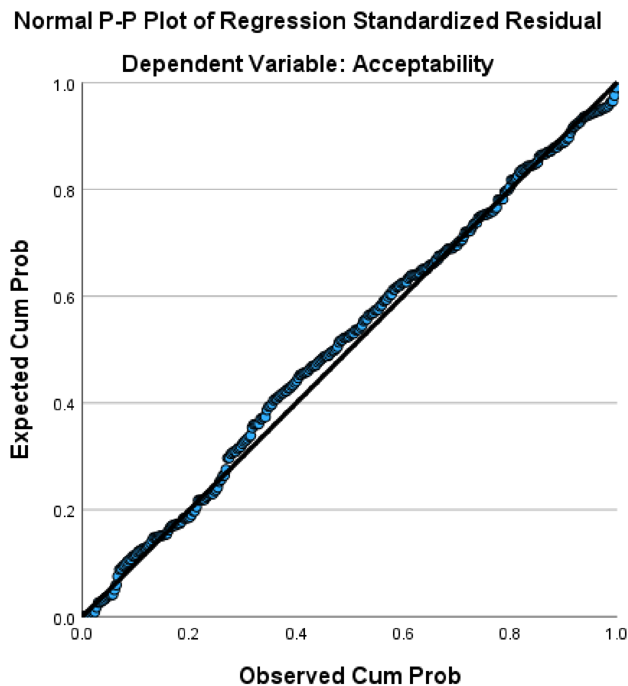
- The project must abide by the University's Research Ethics Policy: https://www.sheffield.ac.uk/research-services/ethics-integrity/policy
- The project must abide by the University's Good Research & Innovation Practices Policy: https://www.sheffield.ac.uk/polopoly_fs/1.671066!/file/GRIPPolicy.pdf
- The researcher must inform their supervisor (in the case of a student) or Ethics Administrator (in the case of a member of staff) of any significant changes to the project or the approved documentation.
- The researcher must comply with the requirements of the law and relevant guidelines relating to security and confidentiality of personal data.
- The researcher is responsible for effectively managing the data collected both during and after the end of the project in line with best practice, and any relevant legislative, regulatory or contractual requirements.

Appendix T: Regression Assumption Analysis, Acceptance as the Dependent Variable.

Normality: the bell curve indicates the data is normally distributed.



Linearity: the line of best fit through the data points is a straight line, rather than a curve or some sort of grouping factor, and VIF factors are <10 – assumption met.



Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	63.110	13.518		4.669	<.001	36.516	89.705		
	Age	-.141	.877	-.009	-.161	.873	-1.866	1.585	.973	1.028
	Gender	2.969	1.345	.119	2.207	.028	.322	5.615	.998	1.002
	Ethnicity	-.677	.925	-.040	-.732	.465	-2.497	1.142	.988	1.012
	ISI	-.185	.262	-.044	-.706	.481	-.701	.331	.738	1.355
	Wellbeing	-.846	.239	-.221	-3.537	<.001	-1.316	-.375	.739	1.354

a. Dependent Variable: Acceptability

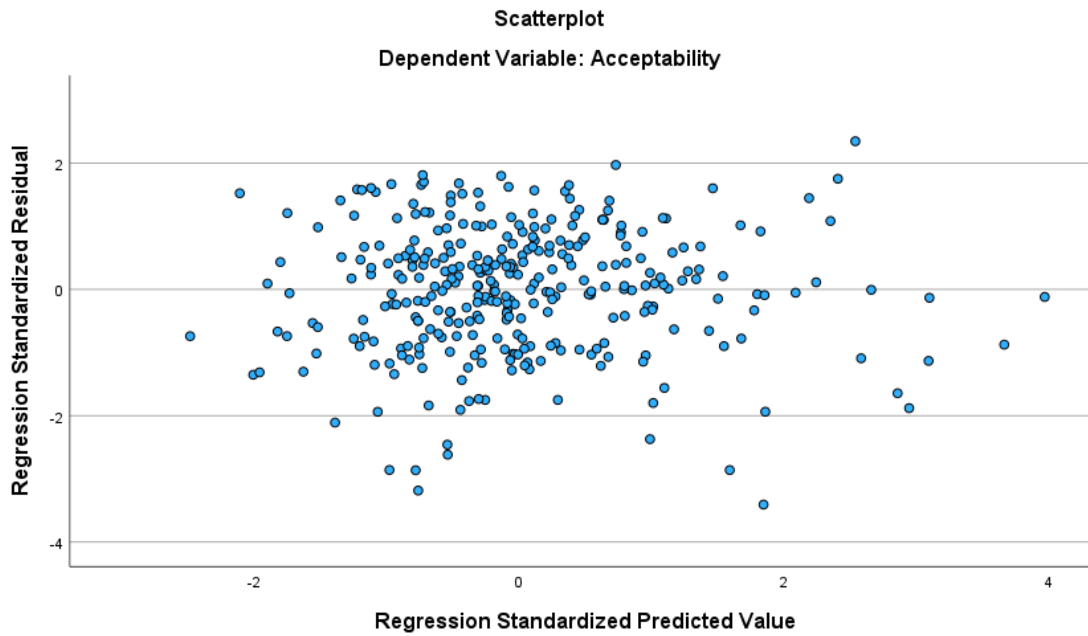
Independence of observations: the observations in the dataset were collected using statistically valid sampling methods, and there are no hidden relationships among variables. Whilst condition indexes above 30 signal multicollinearity (lack of independence), as there is only one Variance Proportion value >.9, the data did not need to be transformed as it met assumptions.

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions							
				(Constant)	Gender=Female	Gender=Male	Gender=O	Ethnicity=White	Wellbeing	ISI	Age
1	1	5.728	1.000	.00	.00	.00	.00	.01	.00	.00	.00
	2	1.004	2.389	.00	.00	.01	.05	.00	.00	.00	.00
	3	1.000	2.393	.00	.00	.00	.05	.00	.00	.00	.00
	4	.201	5.341	.00	.00	.00	.00	.97	.01	.00	.00
	5	.037	12.400	.01	.01	.03	.00	.01	.39	.10	.05
	6	.019	17.238	.00	.00	.00	.00	.01	.57	.86	.00
	7	.008	27.094	.01	.37	.35	.33	.00	.02	.01	.61
	8	.002	50.514	.98	.61	.61	.56	.00	.01	.03	.33

a. Dependent Variable: Acceptability

Homoscedasticity: the size of the error doesn’t change significantly across the values of the independent variable. Whilst there is some mild clustering, this was not significant enough to require transformation of the data. Assumption was met.



Appendix U: Additional Multiple Regression Outputs

Sleep Knowledge: the model was non-significant, with no significant individual predictors.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	34.245	8	4.281	.933	.489[b]
	Residual	1450.112	316	4.589		
	Total	1484.357	324			

a. Dependent Variable: Knowledge_Post

b. Predictors: (Constant), Ethnicity=White, Wellbeing, Gender=Female, Age, Knowledge_Pre, Gender=O, ISI, Gender=Male

Coefficients[a]

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	8.930	2.120		4.213	<.001
	Knowledge_Pre	.003	.058	.003	.052	.959
	Age	.024	.100	.014	.239	.811
	Wellbeing	.000	.028	-.001	-.013	.989
	ISI	-.028	.030	-.061	-.926	.355
	Gender=Female	-.424	1.528	-.097	-.278	.782
	Gender=Male	-.849	1.538	-.187	-.552	.581
	Gender=O	.010	1.611	.001	.006	.995
	Ethnicity=White	-.229	.285	-.045	-.806	.421

a. Dependent Variable: Knowledge_Post

Intention to Change: the model was non-significant, with no significant individual predictors.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	397.170	8	49.646	.563	.808[b]
	Residual	27956.205	317	88.190		
	Total	28353.374	325			

a. Dependent Variable: Intention_Post

b. Predictors: (Constant), Intention_Pre, Ethnicity=White, Gender=Male, Age, Gender=O, ISI, Wellbeing, Gender=Female

Coefficients[a]

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	34.148	9.380		3.640	<.001
	Age	-.150	.437	-.020	-.344	.731
	Wellbeing	.151	.133	.083	1.138	.256
	ISI	.016	.131	.008	.121	.904
	Gender=Female	-.099	6.712	-.005	-.015	.988
	Gender=Male	-1.319	6.781	-.067	-.194	.846
	Gender=O	3.414	7.090	.079	.481	.630
	Ethnicity=White	.378	1.241	.017	.304	.761
	Intention_Pre	-.059	.070	-.055	-.850	.396

a. Dependent Variable: Intention_Post

Acceptability: the model remained significant, with wellbeing a significant individual predictor.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9419.098	7	1345.585	3.703	<.001[b]
	Residual	115553.261	318	363.375		
	Total	124972.359	325			

a. Dependent Variable: Acceptability

b. Predictors: (Constant), Ethnicity=White, Wellbeing, Gender=Female, Age, Gender=O, ISI, Gender=Male

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	61.493	18.677		3.292	.001
	Age	-.152	.887	-.009	-.172	.864
	Wellbeing	-.827	.245	-.216	-3.382	<.001
	ISI	-.176	.265	-.042	-.663	.507
	Gender=Female	1.833	13.581	.046	.135	.893
	Gender=Male	3.803	13.677	.092	.278	.781
	Gender=O	11.264	14.316	.124	.787	.432
	Ethnicity=White	1.988	2.517	.043	.790	.430

a. Dependent Variable: Acceptability