Child sleep: A systemic exploration of the knowledge and experience of educational psychologists, parents and primary school staff.

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Doctorate of Educational Psychology (DedPsy)

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Abstract

The present study aimed to explore the current views, perceptions, and knowledge of child sleep difficulties amongst primary school staff, parents of primary school aged children, and educational psychologists. Three hundred and ninety-seven participants took part in the study, all of which were aged eighteen or over and lived in the United Kingdom. Each participant took part in an online questionnaire to gather her/his views and experiences of child sleep and child sleep difficulties. A mixed method design was used to collect both quantitative and qualitative data, which allowed for the data to be compared extensively between groups. The data was analysed using descriptive statistics and thematic analysis. The results revealed variations of sleep knowledge and age-related sleep durations across all three groups, with EPs over or underestimating by two and a half hours more frequently than any other group. A desire and requirement for sleep training was evident amongst all three groups, and EPs reported that very few educational psychology services or doctorate courses were providing such training. A high proportion of both EPs and school staff reported frequently encountering the result of sleep difficulties in their work. Correspondingly, a consensus for sleep information to be integrated into the curriculum was echoed across the three participant groups. The findings are discussed in relation to the current child sleep research and practical and future directions for the EP profession are proposed.

Summary

This thesis will be made up of three parts, which consist of the Literature Review, the Empirical Paper and the Critical Appraisal. Part A provides a detailed review of the literature around child sleep difficulties from a developmental ecological systems perspective, exploring the bi-directional impact that inadequate sleep can have on both a child and the systems around her/him. Firstly, the child system is considered, exploring how a child's health and/or developmental or genetic profile can impact sleep. Secondly, the immediate context is studied to unpick how a child's environmental conditions and the parenting practices s/he is exposed to, may impact sleep. Thirdly, the bi-directional relationship between child sleep and the school and family systems are explored, with a particular focus on ways in which schools and educational psychologists could be working to support child sleep. Lastly, the literature review focuses on the cultural context. Medication, sleeping practices, and the knowledge held amongst the three participant groups of this study (EPs, school staff and parents) are considered to gain a current understanding of child sleep difficulties within these systems.

Part B compromises the Empirical Paper which explores the current views, perceptions, and knowledge of child sleep difficulties amongst primary school staff, parents, and educational psychologists. This section presents the methodology used, the results of the study and a discussion of the findings in relation to the current published research on child sleep difficulties. Additionally, practical and future directions for the EP profession are proposed.

Part C, the Critical Appraisal, aims to provide a reflective and reflexive account of the research practitioner's experience of the research process and journey. The first section focuses on the current study's contribution to knowledge whilst considering the contribution the findings may have to the three groups studied. The second section explores the critical account of the research practitioner and explores the research design, research positioning, methodology and data analysis used within the study. Limitations and future research considerations are discussed.

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List of abbreviations

SD – sleep difficulty
CS- child sleep
CSD- child sleep difficulty
TD- typically developing
REM- rapid eye movement
EP- educational psychologist
ASD- autistic spectrum disorder
ADHD- attention deficit hyperactivity disorder
YP- young people
HV- health visitor
SFAs- solution focused approaches
SES- socio economic status
SIDS- sudden infant death syndrome
NICE- National Institute for Health and Care Excellence
UK- United Kingdom
CPD- continual professional development
EPS- educational psychology service

Definition of terms

Rapid eye movement sleep (REM)- REM sleep is characterised by increased brain activity, eye movements, muscle relaxation and accelerated respiration. An individual dreams during REM sleep due to heightened cerebral activity. REM sleep typically occurs 90 minutes after falling asleep.

Sleep spindles- Sleep spindles are brief bursts of fast activity that occur within the brain during N-REM (stage 2) sleep. They are measured on an EEG. The greatest spindle activity occurs at the beginning and end of N-REM sleep. Research proposes that the greater number of sleep spindles during sleep, the more this aids performance on learning tasks, however there is uncertainty over their function.

Sleep onset latency/ sleep latency- the length of time that it takes to accomplish the transition from full wakefulness to sleep

Part 1: Major Literature Review

Word count: 11,047

1.1 Introduction

1.2 Overview of the Literature Review

The following literature review explores child sleep difficulties (CSDs) and the bi-directional impact that inadequate sleep can have on both a child and the systems around her/him. The relevance of this issue is considered in relation to child functioning, the impact on the family, and the school context.

Drawing on a developmental ecological systems perspective, the literature review explores the bi-directional impact that child sleep (CS) and the surrounding systems can have on one and other. Firstly the child system is considered, exploring how a child's health and/or developmental or genetic profile can impact sleep. Secondly, the immediate context is studied to unpick how a child's environmental conditions and the parenting practices s/he is exposed to, may impact sleep. Thirdly, the bi-directional relationship between CS and the school and family systems are explored, with a particular focus on ways in which schools and educational psychologists (EPs) could be working to support CS. Lastly, the literature review focuses on the cultural context. Medication, sleeping practices and the knowledge held amongst the three participant groups of this study (EPs, school staff and parents) are considered to gain a current understanding of CSDs within these systems. This exploration of the knowledge currently held by the systems surrounding the child highlight a limitation within the UK literature on CSDs, suggesting that CS may not be viewed as an area of knowledge that is required for these groups.

In conclusion, the gaps within the literature are highlighted and the value of further research into EP and school staff knowledge of CSDs is posited. Due to no current literature exploring the EP role in relation to CS, the relevance of the EP in supporting CSDs in schools, and with parents, is explored. The research aims are introduced and followed by the key research questions, which have been devised in close relation to the literature explored within this literature review.

1.3 Description of key search terms and literature sources

The literature covered within this literature review was obtained using the following online sources: PsychInfo, Wiley Online Library, Google Scholar, PubMed, Web of Sciences, The British Medical Journal (BMJ), Pediatrics, Sleep Medicine Reviews, and

Articles & More. Journal articles were searched for using combinations of the following keywords and terms: “child”, “sleep”, “sleep difficulties”, “sleep disorder”, “school”, “education”, “teachers”, “parenting”, “sleep practices”, “sleep interventions”, “sleep conditions”, “sleep hygiene”, “behaviour”, “academic”, “development”, “performance”, “developmental disorders”, “health”, “technology”, “parental sleep”, “parental stress”, “co-sleeping”, “medication” and “melatonin”. The literature search took place between July 2018 and December 2018. See Appendix A for further information regarding the literature search process.

The literature search considered studies from infancy up to adolescence, as it was felt to be important to understand fully the impact that sleep difficulties (SDs) can have across childhood and adolescence, and how sleep changes as a child matures. Also, studies were considered which helped to unpick how CS is impacted upon and impacts the surrounding systems. This information adds to the comprehensive picture of CSDs and highlights how interventions, practices, and knowledge may help lessen SDs across childhood and adolescence.

Considering the epistemological stance of this research utilising a critical realist position, the literature search was not limited to UK based studies. This was viewed an important stance to take due to values and patterns around sleep varying across cultures, for example co-sleeping with parents being prevalent in East Asian cultures (Yang & Hahn, 2002) and an afternoon sleep, known as a siesta, is common practice in Mediterranean countries such as Spain (Sayon-Orea et al., 2013). This approach encourages the consideration and understanding of different cultural influences on sleep.

2.Introduction to CS

Sleep takes up between a quarter and two-thirds of the lives of children and young people (YP) (Cao & Guilleminault, 2008), with the first decade of life resulting in children spending more time asleep than awake (Galland, Taylor, Elder, & Herbison, 2012). This time spent asleep is reported as fundamental for the development of a child’s mood, health, performance, and behaviour (National Sleep Foundation, 2004). Roffwarg, Muzio, and Dement (1966) were one of the first to propose a link between sleep and brain development. They identified a significant difference between the

amount of time an infant spent in rapid eye movement (REM) sleep compared to sleep in adulthood. Newborn babies were reported to spend significantly longer durations in REM sleep compared to young adults, with an 80% decrease evident in the latter group. Recent studies have postulated that this change in REM sleep is due to substantial growth and development within the brain during the first three years of life (El-Sheikh & Sadeh, 2015). During this period of development many changes occur within the brain with a growth of synaptic number and connectivity (El-Sheikh & Sadeh, 2015) and slow wave activity shifting from the posterior to the anterior brain regions as a child develops (Kurth et al., 2010). However, the function of these changes within the brain are reported as unknown by researchers (Ringli & Huber, 2011; Blumberg, Gall, & Todd, 2014), highlighting a lack of understanding of the reason for structural changes in the brain during infancy. Additionally, much of the research examines rat's brains during sleep (Kreider & Blumberg 2004; Gvilia, Turner, McGinty, & Szymusiak, 2006; Todd, Gibson, Shaw, & Blumberg, 2010) resulting in validity issues when comparing such results to human brain development. Thus, one must be cautious when reading the explanations proposed regarding the purpose of sleep on infant brain development, due to the theoretical basis, lack of consensus amongst the literature, and comparison of the results of animal studies to humans.

Sleep is characterised by the distribution of sleep-wake cycles around the 24 hour day (El-Sheikh & Sadeh, 2015). This internal system, also known as a circadian rhythm, determines bodily functions including preferences for eating, drinking, body temperature, metabolic rate and when the body should be asleep or awake (Walker, 2017). Newborn babies do not have an established circadian rhythm, which results in many sleep-wake cycles occurring throughout a twenty-four hour period (Davis, Parker, & Montgomery, 2004). In contrast to an adult's single episode of sleep during a twenty-four hour day, infants display polyphasic sleep where sleep episodes are short and fragmented (Davis et al., 2004; Walker, 2017). Infants are reported to wake due to requiring frequent feeds (Davis et al., 2004) additionally, repeating signals including: temperature change, daylight, and structured feeding times aid to establish a twenty-four hour rhythm (Walker, 2017). Thus, infant sleep cycles manifest into more consolidated episodes rather than fragmented cycles throughout the day. However, research suggests that if a child develops SDs at this early stage of life, and these

difficulties are not addressed, sleep problems can persist into childhood (Meltzer & Montgomery-Downs, 2011; Lam, Hiscock & Wake, 2003).

2.1 Overview of the link between CS and outcomes

The area of inadequate sleep in children has been studied extensively, with many detrimental effects being linked to insufficient sleep. These include: child behaviour difficulties (Fallone, Owens & Deane, 2002); later behavioural and emotional problems (Gregory & O'Connor, 2002); an impact on academic performance (Curcio, Ferrara & De Gennaro, 2006; Sadeh, Gruber & Raviv, 2003); an impact on cognitive development (Touchette et al., 2007); obesity in childhood (Nixon et al., 2008; Taheri, 2006); and an adverse effect on child development and attention regulation (Skúladóttir, 2016). The extensive literature on inadequate sleep in childhood displays an awareness of the importance of sleep across many factors within a child's life. It is suggested that to maximise a child's potential comprehensively, optimal sleep is required as a key component in the environmental and biological mix that aids a child's development (Galland & Mitchell, 2010). However, the development of a nocturnal sleep-wake cycle is largely impacted by a complex combination of the systems around the child. These systems can have a bi-directional relationship where both the child and systems around her/him can impact one and other, preventing a clear cause and effect from being established when researching CSDs. Furthermore, due to this bi-directional relationship between biological, social and cultural factors impacting sleep, SDs in children have not only been linked to detrimental impacts on the child, but research suggests adverse implications on the child's family too (Weinraub et al., 2012; Minde et al., 1993). The link between CS and parental functioning will be explored further in section 4.1 of the literature review.

2.2 Systems perspective on sleep

El-Sheikh and Sadeh (2015) explored a developmental ecological systems perspective in relation to CS, and the impact that the different systems around the child can have on a child's sleep behaviour. The paper posits the micro and macro systems that influence and surround a child's sleep by creating a model that draws upon Bronfenbrenner's (1977;1979) ecological systems theory. Bronfenbrenner identified four systems: the microsystem, mesosystem, exosystem, and macrosystem, all of which depict how an individual is influenced by the varying systems around

her/him. El-Sheikh and Sadeh (2015) extract the concept of systems theory from Bronfenbrenner's model to create a systems perspective on CS and development, by highlighting the four main elements that impact sleep. The model describes these as: the child, immediate context, social context, and cultural context. Lastly, they describe the influence of time and maturation of the child which addresses the role of evolutionary changes to culture and society, including the impact of technology on sleep (see Figure 1).

Figure 1. El-Sheikh and Sadeh (2015) developmental ecological systems on sleep and development

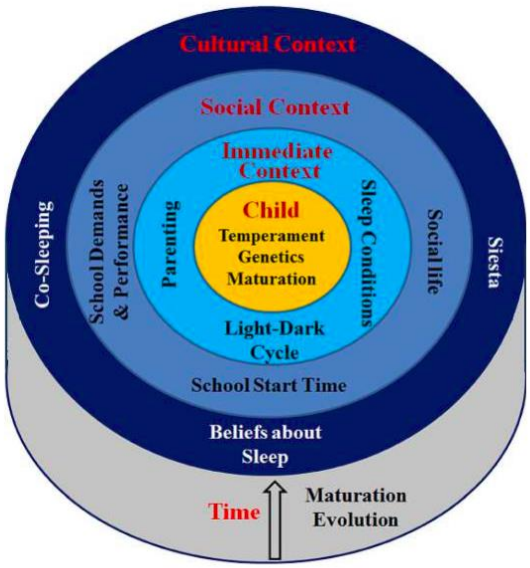

FIGURE 1.—Systems perspective on sleep and development.

3.Child system

3.1 Child health

Some children with health difficulties or chronic diseases are vulnerable to SDs (Powell, Kubba, O'Brien, & Tremlett, 2010). For example, asthmatic symptoms in children have been correlated with disrupted and reduced sleep quality (Banasiak, 2016; Chugh, Khana, & Shah, 2006). Research suggests that the poor sleep associated with asthma leads to a greater chance of school absence, a decline in educational attainment, and parents missing work (Diette et al., 2000). The study identified a significant trend between asthma induced nighttime awakenings and pupil absence rates and a decline in educational attainment, compared to those who were not awoken by asthmatic symptoms.

An interesting finding by Kieckhefer, Lentz, Tsai and Ward (2009) highlights the importance of obtaining both the child and parent's views regarding sleep. The study examined child and parental reports of nighttime respiratory symptoms, sleep disruption, and sleep quality in a sample of 9 to 11 year old asthmatic children. The study reported a significant difference between parental and child reports across all symptoms and sleep parameters, with parents reporting fewer symptoms and awakenings than their children. Thus, highlighting an apparent difference in parental constructions of CSDs. This generates validity issues with research that uses parental report data for CS, as it is likely that important data such as sleep onset latency and night awakenings are unreported due to parents being unaware of their occurrence (Richdale & Schreck, 2009). Therefore, findings from such studies should be approached with caution due to the subjectivity of parents reporting what they have observed or been disturbed by, rather than an objective measurement of the child's sleep throughout the night.

Children with eczema are reported to display more sleep disturbances than children without the skin condition (Camfferman, Kennedy, Gold, Martin, & Lushtington, 2010; Romanos, Gerlach, Warnke, & Schmitt, 2010). Reduced sleep due to eczema related symptoms has also been correlated with neurocognitive deficits such as reductions in verbal comprehension, perceptual reasoning and working memory (Camfferman et al., 2010). This highlights how child health difficulties can not only impact CS but can cause secondary impairments on daytime functioning. Other health problems that have been correlated with CSDs include: migraines (Heng & Wirrell, 2006) vision difficulties (Williams, Sears & Allard, 2004); cerebral palsy (Garcia et al., 2016); paediatric obstructive sleep apnoea (Powell, Kubba, O'brien, & Tremlett, 2010), and allergic rhinitis (Blaiss, Simmons, Meltzer, Sheth, & Boyle, 2008). Due to the large number of health implications that have been found to impact CS, it seems important for those around the child to be aware of the child's medical history and the implication this can have on both sleep and daytime functioning. As well as the child's health, there has been extensive research on the impact of developmental and genetic disorders, including autistic spectrum disorder (ASD) and attention deficit hyperactivity disorder (ADHD). The impact of ASD on CS and functioning will be explored below.

3.2 Link between SD and ASD

Although sleep problems are not part of the diagnostic criteria for ASD (American Psychiatric Association, 2013), the high prevalence of SDs in children with ASD has been studied extensively (Krakowiak, Goodlin-Jones, Hertz-Picciotto, Croen, & Housen, 2008; Williams et al., 2004; Tudor, Hoffman, & Sweeney, 2012; Cavalieri, 2016; Mindell & Owens, 2003; Palka et al., 2016; Wiggs & Stores, 2004; Polimeni, Richdale, & Francis, 2005). Cavalieri (2016) reports that SDs are more prevalent in children with ASD than in typically developing (TD) children. Estimates of the number of SDs amongst children with ASD vary greatly across studies, however the literature appears to suggest between 50-80% (Couturier et al., 2005; Krakowiak, et al., 2008; Souders et al., 2009; Goldman, Richdale, Clemons, & Malow; 2012), with these difficulties including night awakenings, difficulties falling asleep, restless sleep and short sleep duration (Williams et al., 2004; Wiggs & Stores 2004; Malow et al., 2016; Krakowiak et al., 2008). Recent research has asserted that SDs occur ubiquitously across the autistic spectrum, with children of all cognitive capabilities and levels of functioning reported to experience SDs in variant forms (Baker, Richdale, Short, & Gradisor, 2013; Krakowiak et al., 2008; Lambert et al., 2016).

Poor sleep has been found to have negative implications on daytime functioning in children with ASD (Malow et al., 2006; Goldman et al., 2011). Such examples include hyperactivity and compulsive behaviours (Goldman et al., 2011), attention problems (Malow et al., 2006); social skill deficits and increased stereotypic behaviour (Schreck, Mulick, & Smith, 2004); and weight gain (Gillette et al., 2015; Delahaye et al., 2014). These findings imply that a child's condition can impact her/his sleep and daytime functioning, suggesting the importance for information and support to be provided to parents and school staff. Similarly, it is important for appropriate interventions to be developed to aid children's sleep, examples of such will be discussed below in section 4.6.

3.3 Differences in the sleep of children with ASD

Humans use a variety of cues to regulate circadian rhythms, these include environmental signals such as differences in temperature and light, daily schedules and routines, and witnessing social cues such as other family members going to bed (Aschoff et al., 1971; Wever, 1988; Richdale 1999). However, as children with ASD

are reported to have difficulties responding to and using social cues, this may impact a child's sleep-wake cycle (Richdale, 1999; Hare, Jones, & Evershed, 2006). Research using polysomnography has found that people with ASD displayed abnormalities in their REM sleep, had lower incidences of sleep spindles, and less total sleep duration compared to TD individuals (Godbout, Bergeron, Limoges, Stip, & Mottron, 2000). Similar results have also suggested a decline in total sleep duration and REM latency in children with ASD compared to TD children (Miano et al., 2007). However, research by Tani et al. (2004) found no difference in sleep onset, offset or duration in individuals with ASD compared to TD young adults. Such conflicting findings demonstrate a difficulty in identifying whether there are differences in the sleep of individuals with ASD, or whether confounding variables such as sleep hygiene and structure may impact sleep. Such differences may be explained by the aforementioned studies measuring the sleep of individuals diagnosed with either autism disorder or Asperger syndrome. All individuals previously diagnosed with Asperger syndrome are now diagnosed with ASD due to the modification of diagnostic criteria within the Diagnostic and Statistical Manual of Mental Health Disorders (DSM-5) (American Psychiatric Association, 2013). Previously Asperger syndrome and autistic disorder were diagnosed using different diagnostic criteria, with a diagnosis of Asperger syndrome specifying no general delay in cognitive development (American Psychiatric Association, 2000). However, since the introduction of the DSM-5, an ASD diagnosis combines the previous diagnoses of autistic disorder, Asperger syndrome, childhood disintegrative disorder which is a rare progressive neurological disorder, and pervasive developmental disorder-not otherwise specified (Du & Wen, 2016; American Psychiatric Association, 2000;2013).

A study that compared the sleep of individuals with autism disorder and Asperger syndrome supports the proposal that these two previous diagnoses may have differing sleep patterns and behaviours (Bruni et al., 2007). The study identified differences in the sleep of the two groups including the total sleep duration, sleep onset latency, and REM latency. (Bruni et al., 2007). It appears unclear as to why the sleep of individuals with Asperger syndrome or autism differs, however researchers have proposed that cognitive functioning may be a contributing factor (Richdale & Schreck, 2009).

It is also important to consider the methods used to measure the sleep of children and YP with ASD. Polysomnography studies attach electrodes to the face and scalp of participants (Moore, Evans, Hanvey, & Johnson, 2017), a method used by a number of the aforementioned studies. It is believed that this method of measuring sleep in children with ASD may cause sensory difficulties, potentially impacting the child's sleep (Malow et al., 2006). It is also important to acknowledge the ecological validity issue of using laboratory studies compared to the child sleeping in her/his own bed.

3.4 SD associated with other conditions in children

In addition to the link between SDs and ASD, SDs have also been linked to many genetic, movement, neurological and developmental disorders including: Down syndrome (McConnell, Hill, Pataka, & Riha, 2013), Rett syndrome (Hagebeuk, Van Den Bossche, & De Weerd, 2013), Cerebral palsy (Garcia et al., 2016), Epilepsy (Larson et al., 2012), Prader-Willi syndrome (Khayat, Narang, Bin-Hasan, Amin, & Al-Saleh, 2017), Fragile X syndrome (Kronk et al., 2010), and Williams syndrome (Annaz, Hill, Ashworth, Holley, & Karmiloff-Smith, 2011). Therefore, it appears that the child's genetics may affect the likelihood of her/him experiencing SDs. Consequently, research has suggested that a greater awareness of typical and atypical development of sleep is needed amongst professionals working with children (Rydzkowski, Canale, & Reynolds, 2016).

4. Immediate Context

The immediate context is described as having a strong impact on CS and includes the parenting practices a child experiences around bedtime (El-Sheikh & Sadeh, 2015). Some of the areas explored within the research include: the impact detrimental parenting practices can have (Hiscock, 2010); the benefit of educating parents (Galland & Mitchell, 2010); the importance of considering parental stress and mood disorders and how these may impact and be impacted upon by CSDs (Mindell et al., 2009), as well as exploring appropriate parental interventions (Morrell, 1999; Hiscock, 2010). Additionally, the research highlights how the sleep conditions in the home and the technology that the child is exposed to can be detrimental to CS (El-Sheikh & Sadeh, 2015; National Sleep Foundation, 2011). Each of these areas will be considered in turn below.

4.1 Parenting practices impacting CS

Galland et al. (2012) describe how parents can support nocturnal sleep patterns in early infancy by implementing the social cues required for sleep, such as consistent feeding and bedtimes. Parenting practices are reported to continue to shape a child's sleeping behaviour after a child has developed a more consistent sleep-wake cycle (El-Sheikh & Sadeh, 2015). Such practices consist of the monitoring of bedtimes and wake times, controlling caffeine consumption, and monitoring the exposure to light and technology before sleeping (El-Sheikh & Sadeh, 2015; Calamaro, Yang, Ratcliffe, & Chasens 2012; Mindell, Meltzer, Carskadon, & Chervin, 2009).

4.2 Detrimental parenting practices impacting CS

Parental interactive behaviours such as rocking, feeding and holding the child as s/he falls asleep are reported as the most common parental behaviours associated with infant sleep problems (Hiscock, 2010). The practices are described as creating sleep associations whereby the child requires physical contact for her/him to fall asleep. These practices can impact a child's ability to self soothe which can lead to difficulties both falling asleep and returning to sleep when waking during the night (Morrell & Cortina-Borja, 2002; Sadeh, 2004; Adair, Bauchner, Phillipp, Levenson, & Zuckerman, 2001; Anders, Halpern, & Hua, 1992). Horne (1992) argues that most CS problems are not due to the child, but are caused by the parents who may have initiated the problem and transmitted their own anxieties around sleep onto the child. Although this may be true in relation to the environment that the parent creates for the child, it is important to consider the aforementioned points regarding disorders and health issues, which would suggest that parents may not always be the cause of their child's SDs. Regardless of what causes the SD, it seems imperative for parents to be offered advice and support to help their child develop a healthy sleep routine.

4.3 Educating parents on CS

Much of the research has explored the benefit of using early interventions and educating parents on sleep practices (Mindell et al., 2006; Owens & Dalzell 2005; Paul et al., 2016; Hiscock, Quach, Gold, Arnup & Wake, 2016). It has been reported that "educating parents in the best evidence-based practices is the key to success in helping children sleep" (Galland & Mitchell, 2010, p.850). Similarly, behavioural strategies have been described as more effective and acceptable for parents than

pharmacological interventions in a review of fifty-two studies on behavioural treatments for CSDs (Mindell et al., 2006). 94% of the behavioural treatment studies were linked to significant reductions in night awakenings and/or bedtime problems in children. However, despite the suggestion that behavioural strategies may be advantageous, it is important to note that these findings are based on children aged up to four years and eleven months, preventing the results from being generalisable to older age ranges. Additionally, a majority of the studies reviewed had a follow up period of six months or less. Therefore, it is unclear whether behavioural strategies continue to be effective in alleviating SDs in the long term, highlighting an issue that warrants further research.

4.4 Link between parental stress and mood disorders and CSDs

Parental sleep programme studies have identified a bidirectional relationship between children's SDs and parental mood disorders and stress (Lam, Hiscock, & Wake, 2003; Morrell & Steele, 2003; Moore, Gordon, & McLean 2012). CSDs have been linked to increased maternal depression (Weinraub et al., 2012; Lam et al., 2003; Meltzer & Mindell, 2007) and marital discord (Minde et al., 1993; Mannering et al., 2011). However, important findings have highlighted that behavioural sleep interventions have led to improvements in maternal mood (Hiscock et al., 2008; Hiscock, Canterford, Ukoumunne, & Wake, 2007), a decrease in parental anger (Mindell, Telofski, Wiegand, & Kurtz, 2009), reduced stress levels in mothers and fathers (Thome & Skuladottir, 2005), and a decrease in reports of parental fatigue (Eckerberg, 2004). Mindell et al. (2009) highlighted how consistent bedtime routines for children can lead to significant improvements in CS, parental fatigue, and anger and tension, suggesting that introducing parental behavioural strategies regarding CS can benefit both the child and parents. However, there are difficulties in establishing cause and effect when exploring CSDs, as it appears unclear whether parental stress and relationship difficulties contribute towards the development of CSDs. A study by Mannering et al. (2011) found marital instability to predict CS problems, suggesting that marital instability may be a risk factor in the development of CSDs, specifically as CS problems were not found to predict marital discord. However, CS was only measured from 9 months of age, where children are reported to have begun regulating their circadian rhythm and sleep throughout the night (Morrell & Steele, 2003). Therefore, the frequent awakenings over the first 6 months, which likely impacted parental sleep,

may have impacted upon marital relationships but were not considered in the study. Accordingly, the research on parental sleep, stress, and depression asserts a bidirectional link with CSDs (Rönnlund, Elovainio, Virtanen, Matomäki, & Lapinleimu, 2016; El-Sheikh, Kelly, Bagley, & Wetter, 2012; Martin, Hiscock, Hardy, Davey, & Wake, 2007; Meltzer & Mindell, 2007). This may suggest a circular causality whereby CSDs and parental stress, depression, and sleep impact one and other continuously, preventing a clear cause and effect from being established.

Negative parental perceptions of their child's sleep have also been linked to higher levels of parenting stress (Sinai & Tikotzky, 2012; Palka et al., 2016). This raises important concerns due to elevated parental stress being associated with harsh use of discipline, low levels of warmth and reciprocity (Haskett, Ahern, Ward, & Allaire, 2006). This finding is important to consider when acknowledging the importance placed on parental warmth and limit setting when regulating children's sleep behaviour (Price, Wake, Ukoumunne, & Hiscock, 2012). Therefore, it seems important to explore ways in which parents can be helped regarding their child's SDs, to benefit both the child and family by reducing parental stress and creating a more positive parent-child dyad.

4.5 Considering parental mindsets around CS

Due to the heterogeneous nature of parents, it appears important to consider parental differences when exploring ways of supporting them with their children's SDs, since this may impact the likelihood of reporting concerns (Morrell, 1999). Morell (1999) identified that parents who doubted their competency, ability to set limits, and cope with their infant crying, were more likely to report infant sleep problems compared to parents who did not report these concerns. Therefore, the interventions suggested below would be most effective if considered in line with the parent's mindset.

Accordingly, Hiscock (2010) suggested that parental cognitions should be explored regarding their child's sleep, to ensure the appropriate strategy is recommended. For example, the author advocates that the 'adult fading approach' (where the adult gradually removes her/himself from the child's room over time) may be more appropriate for parents who have difficulties setting limits, as it is less likely to result

in child protest. The author also explains the importance of parental anger being identified and explored to ensure the child's safety. Lastly, parental depression may result in parents doubting their competence, therefore they may benefit from additional support and goal setting whilst introducing behavioural strategies to help with their child's sleep.

4.6 Interventions to help CSDs

Strategies that have been reported to help a wide range of CSDs include: introducing a consistent bedtime routine (Mindell et al., 2009; Hale, Berger, LeBourgeois, & Brooks-Gunn, 2011; Mindell, Li, Sadeh, Kwon, & Goh, 2015); ensuring consistent wake times (Blader et al., 1997); avoiding caffeine in the evenings such as caffeinated soft drinks (Muller, Signal, Elder, & Gander, 2017); using bibliotherapy approaches where written materials are read to a child to help alleviate sleep related anxieties (Klingman, 1988; Moore, 2004), and rewarding positive bedtime behaviour (Burke, Kuhn, & Peterson, 2004).

As well as the aforementioned strategies to improve CS, the research posits sleep programmes that can be implemented within the home to help with child anxieties, frequent awakenings, and seeking parental attention during the night. In a recent review of sleep duration recommendations, the National Sleep Foundation published an updated recommendation for sleep across a 24-hour period (Hirshkowitz et al., 2015) which are summarised in Table 1.

Table 1. National Sleep Foundation sleep duration recommendations

Child age range	Sleep duration recommendation
0-3 months	14-17 hours
4-11 months	12-15 hours
1-2 years	11-14 hours
3-5 years	10-13 hours
6-13 years	9-11 hours
14-17 years	8-10 hours

These recommendations are reported to be an important tool when working with parents to establish the extent of the child's sleep problem, particularly when considering the results of studies which have suggested a lack of parental knowledge regarding recommended sleep durations (McDowall et al., 2017; Owens, Jones, & Nash, 2011; Owens & Jones, 2011). Therefore, it appears important to establish a clear picture of the child's current sleep behaviour to establish if s/he is experiencing limited sleep and which programme would be most appropriate. Nonetheless, one should remain cautious of parental reported sleep durations within the research as Richdale and Schreck (2009) highlight a potential lack of parental knowledge of night awakenings and delayed sleep onset. Consequently, asking the child for information about her/his sleep patterns and behaviours may support the validity of the information being gathered.

Galland and Mitchell (2010) describe sleep programmes for CSDs as including parental extinction, positive routines, and/or scheduled awakenings. Such programmes have been found to increase a child's ability to self-soothe independently and increase positive interactions between mother and child (Reid, Walter, & O'Leary, 1999; Mindell & Durrand,1993; Hiscock & Wake, 2002; Minde et al., 1994). Different programmes have been posited as being effective for differing needs. For example, gradual extinction is described as being beneficial for children displaying separation anxiety (Minde et al., 1994), and bedtime pass programmes (see Appendix B), are described as benefiting children who display bedtime resistance (Moore et al., 2007). Consequently, it seems important to explore the child's behaviour around bedtime when considering what programme to use.

Although sleep programmes are reported to be highly effective, research has suggested that they may not be appropriate or applicable for parents who co-sleep with their children or whose family schedules change frequently (Galland & Mitchell, 2010). Thus, it appears important to treat parents and children as a heterogeneous group whilst unpicking the sleep practices and behaviour within the household. Accordingly, a recent study by Jin and colleagues (2013), identified the importance of assessing possible factors that may be impacting CSDs. This allowed the authors to create individualised sleep programmes for parents after identifying what variables were causing the problematic sleep behaviour. In line with other findings explored

previously within this literature review, establishing a clear picture of the child's sleep behaviour, parental attitudes, and sleeping environment seems to be of great importance.

4.7 Sleep conditions

A noted contributing factor to CSDs is the environmental conditions a child experiences, with cramped, noisy and chaotic households reported as detrimental to CS (Stein, Mendelsohn, Obermeyer, Amromin, & Benca, 2001). Noise and light have both been found to increase the likelihood of SDs (Burke, Kuhn, & Peterson, 2004). A child sharing a room with her/his parents, falling asleep whilst the television is on, and sleeping in bright areas have also been linked to poor sleep quality (Chung et al., 2014). A study by Wilson, Miller, Lumeng and Chervin (2014) researched pre-school aged children's sleeping environments via parental questionnaires. The study found 20% of the 133 children to be sleeping in suboptimal sleeping environments, which were linked to shorter sleep duration and delayed sleep onset latency. However, when considering the use of self-report data and the lexical choice within the questionnaire describing conditions as 'too cold', 'too loud', and 'too bright', the wording may portray negative parenting practices to participants. Therefore, parents may have felt that such answers would portray themselves negatively, so may have not answered honestly. It also appears that 'too cold/hot/loud' is a subjective measurement which is likely to vary greatly across participants, and therefore may not give an accurate measurement of whether sleeping conditions are suboptimal or not. Thus, it is possible that the results are an underestimation of the percentage of children sleeping in suboptimal sleeping environments.

4.8 Technology

The access that a child has to technology before bedtime has been linked to a reduction in sleep (Calamaro et al., 2012). Bedtime resistance, shorter sleep duration, sleep anxieties, and sleep onset delay have all been linked to nighttime television viewing in 4-10 year olds (Owens et al., 1999). Research asserts that light in the short wavelength range (blue light found within laptops, tablets, and smartphones) has a direct negative impact on human melatonin secretion, alertness and cognitive functioning (Chellappa et al., 2013). However, limitations of the study should be considered. A small sample size of thirty adult participants limits the generalisability of

the findings. Additionally, participants were instructed to reduce their alcohol consumption prior to the study. Research into alcohol withdrawal's impact on sleep has suggested that withdrawing from frequent alcohol consumption decreases sleep duration, sleep efficiency, and percentage of time spent in slow wave sleep (Gillin, Smith, Irwin, Kripke, & Schuckit, 1990; Williams & Rundell., 1981). Therefore, it is unclear whether recent alcohol withdrawal or reduction may have impacted the duration and quality of the participants' sleep, highlighting difficulties with establishing cause and effect. Nonetheless, it seems important to consider the impact that variables within the home such as alcohol withdrawal and light exposure can have on sleep and to consider the impact of these within the research.

It is believed that exposure to blue light at night time can lead to an increase in the activity levels in the central and autonomic nervous system, as well as suppressing melatonin secretion, which is required when falling asleep (Higuchi, Motohashi, Maeda, & Ishibashi, 2005). A recent metanalysis study identified a strong correlation between media device use and: inadequate sleep quantity, excessive daytime sleepiness, and poor sleep quality (Carter, Rees, Hale, Bhattacharjee, & Parandkar, 2016).

The impact of screens on sleep seems important to consider when 75% of parents in an American national survey reported that their children had electronic devices in their bedrooms (National Sleep Foundation, 2014). On the contrary, establishing good sleep practices which include not allowing a television in the child's bedroom, has been associated with better sleep across several age ranges (Mindell et al., 2009). Hence, it would appear that parents may be able to help their child establish a good sleep routine by removing electronic devices from bedrooms.

5. Social Context

When considering the external social factors that impact CS, it is also important to acknowledge the bidirectional relationship between the social variables such as parental stress, parental sleep, and school demands, when considering CSDs. Much of the research asserts a circular causality between CSDs and the social context that children experience.

5.1 The link between CS and school performance

The area of poor CS and academic and behavioural functioning within schools has been studied extensively. The research asserts links between poor sleep and negative impacts on: cognitive functioning (Ravid, Afek, Suraiya, Shahar, & Pillar, 2009; Sadeh et al., 2003;), school performance (Lewin et al., 2017), internal and external behavioural difficulties (O'Brien et al., 2011; El-Sheikh, Kelly, Buckhalt, & Hinnant, 2010; Gregory et al., 2005; Paavonen et al., 2002), poor memory and recall (Hill, Hogan, & Karmiloff-Smith, 2007; Wilhelm, Diekelmann, & Born, 2008) and decreased learning and motivation in school (Meijer, 2008; Buckhalt, El-Sheikh, & Keller, 2007). Astill, Van der Heijden, Van Ijzendoorn, and Van Someren (2012) highlight an incongruity amongst the research with many different hypotheses proposing how sleep aids the aforementioned outcomes. Therefore, it appears that there is uncertainty within the field of how sleep may impact cognitions, emotional processing, and behaviour. However, Astill and colleagues (2012) note that despite differences in the scientific explanations of sleep, all propose that sleep plays an active role in the processing of information and is not just a state of rest. It appears that the literature lacks a mutual scientific understanding of the neural processes during sleep which impacts an individual's ability to process information and emotions. Consequently, the research within this area should be acknowledged with caution as a clear causality is yet to be established.

Nonetheless, a meta-analysis study reviewed the findings of 86 studies (involving 35,936 5-12 year olds) and found significant relationships between sleep duration and executive functioning, school performance and behavioural problems in schools. Sleep duration was found to have a significant positive correlation with cognitive performance and executive functioning, whilst shorter sleep duration was linked to more behavioural problems in children (Astill et al., 2012). Interestingly these negative outcomes have been found to occur when sleep is reduced by as little as 30 minutes a night (Sadeh et al., 2003), which lends to the importance of schools addressing ways they may be able to help support CSDs. However, the relationship between sleep duration and cognitive functioning was not identified in each measure of the study. Interestingly repeated measurement effects were apparent in all three groups of children who either slept for an hour more, an hour less, or the same as usual. Each group performed worse on the reaction time task when assessed for a second time. This would suggest that the amount of sleep the children had did not correlate with

reaction times, and perhaps the repetition of the task led to children disengaging the second time. Therefore, it is unclear whether reduced sleep can be correlated to all areas of school performance, as previously suggested by Astill and colleagues. Consequently, the methodology of studies should be considered carefully to identify if factors such as repeated measures may have impacted the results.

5.2 Why schools could help with CSDs

With research positing links between health conditions (Taheri, 2006; Banasiak, 2016) and developmental disorders (Krakowiak et al., 2008) impacting CS, it appears important for teachers to be aware of these associations. When such children display learning or behavioural difficulties it has been suggested that poor sleep is a possible contributing factor (Buckhalt, 2013). Buckhalt (2013) expands on this suggestion by proposing that sleep science and practice should be implemented in the training of teachers, school professionals, and psychologists. This training could facilitate professionals to work with parents on supporting SDs, as well as incorporating sleep improvement into children's education plans (Buckhalt, 2013). Lastly, it is postulated that teachers and parents work together to focus on sleep optimisation before exams and tests (Buckhalt, 2013).

As well as school staff working with parents on improving CS, research has advocated the importance of promoting good sleep habits and practice directly with children (Gruber, Somerville, Bergmame, Fontil, & Paquin, 2016). Running health related education programmes in schools has been noted as a cost-effective method that serves as a platform for educating large numbers of children and YP (Bundy & Guyatt, 1996; World Health Organisation (WHO), 1996). The results of a recent sleep-based education programme in schools demonstrated an increase in sleep duration, sleep efficiency, and an increase in academic grades (Gruber et al., 2016). The association between school sleep-based programmes and improvements in academic performance was also identified in an earlier study (Gruber et al., 2014). However, the link between parental education level and socio-economic status (SES) on CS outcomes should be considered when examining the results of Gruber et al's (2016) study. Low SES and parental education have been correlated with poor sleep outcomes in children (Stein, Mendelsohn, Obermeyer, Amromin, & Benca, 2001; McDowall et al., 2017). Therefore, the results of the aforementioned study should be

approached with caution due to the skewed sample consisting of highly educated parents (over 85% of mothers had a University education or higher) and over 70% of parents were within the top income bracket. Therefore, it is unclear whether the programme would have had similar outcomes in children from low SES families. An important issue to consider due to the higher rates of sleep problems within this demographic (Bøe, Hysing, Stormark, Lundervold, & Sivertsen, 2012; El-Sheikh et al., 2010).

5.3 EPs addressing CSDs

As well as school professionals promoting healthy sleep practices, it has been advocated that EPs should contribute to multi-agency interventions by providing training for teachers, parents, and YP on the issues surrounding sleep (Rydzkowski et al., 2016). It has been advocated that EPs could work with parents on the motivational factors of sleep, before implementing psychological interventions such as mindfulness and CBT. Such interventions have been linked to beneficial sleep outcomes (Britton, Haynes, Fridel, & Bootzin, 2010; Bei et al., 2013; Norell- Clarke, Nyander, & Jansson-Fröjmark, 2011). Additionally, EPs could support parents by utilising psychological tools that empower and explore an individual's ability to change. Such tools include solution focused approaches (SFAs), which are built upon solution exploration rather than focusing on issues and difficulties (Fernie & Cubeddu, 2016). It has been suggested that SFAs are favoured by EPs as they are easily incorporated into their work and can be used flexibly to create goals and explore an individual's intention to change (Pellegrini, 2009). This may allow EPs to further understand a parent's cognitions and perceptions of their child's SDs.

Buckhalt, Wolfson, and El-Sheikh (2009) posit the contribution that EPs could make towards school policies by incorporating SDs into crisis management plans with schools in the case of a traumatic event. This appears an important area to explore when considering the links between physical and sexual abuse (Glod, Teicher, Hartman, & Harakal, 1997), witnessing domestic violence (Lemmey, McFarlone, Wilson, & Malecha, 2001), impacts of terrorism (Klein, Devoe, Mirand-Julian, & Linas, 2009), and marital conflict on CSDs (El-Sheikh, Buckhalt, Cummings, & Keller, 2007). Again, reiterating how the social context a child experiences can impact her/his sleep.

Therefore, it appears important for professionals to be aware of the links between trauma and sleep when working with children that may be experiencing trauma.

5.4 School impacting CS

Research asserts that short sleep duration amongst adolescents has a negative impact on health, with resulting higher rates of obesity, anxiety and depressive symptoms (Alfano, Zakem, Costa, Taylor, & Weems, 2009; Verhulst et al., 2008).
It may be beneficial to consider ways of improving CS durations to work as a preventative strategy. Due to these adverse outcomes, the American Academy of Paediatrics (2014) advocate that health professionals should educate teachers among others on the importance of improving sleep. Furthermore, the American Academy of Paediatrics released a policy statement, urging middle and high schools in the United States to delay school start times.

The process of delaying school start times has been associated with longer sleep duration, improved mood, and reduced daytime sleepiness in adolescents (Boergers, Gable, & Owens, 2014). Thus, suggesting that the timings of the school day can impact sleep and daytime functioning. Biologically driven pubertal changes in adolescents' circadian timing systems are reported to result in later wake and sleep times (Short et al., 2013). Therefore, research has studied delaying school start times to increase adolescent sleep duration (Boergers et al., 2014; Short et al., 2013; Fogg & Johnson, 2015). A cross-cultural comparison study compared adolescents from the United States and Australia to identify cultural differences between sleep (Short et al., 2013). The findings reported that Australian adolescents obtained more sleep each night, were more likely to have parent-set bedtimes, had later school start times, and spent less time participating in extra-curricular activities after school compared to their American peers. Although there are difficulties establishing causality with respect to sleep duration, the findings highlight the impact of extrinsic cultural factors on sleep. It is also evident that the culture that one grows up in may contribute towards the policies such as school start times, and the focus on participation in extra-curricular activities, which have been found to impact sleep (Liu, Liu, Owens, & Kaplan, 2005).

Much of the research on the impact of school start times has taken place in the United States (Danner & Phillips, 2008; Wahistrom, 2002; Boergers et al., 2014; Wolfson &

Carskadon, 1998), making it difficult to generalise these results to the UK. However, a four year observational study was conducted in England (Kelley, Lockley, Kelley, & Evans, 2017). The study used an A-B-A design whereby it compared start times of 8:50 am, 10:00 am and then returned to 8:50 am over four years. The later start time correlated with a 50% decreased rate of student illness and an increase in academic progress. Interestingly these improvements decreased once the earlier start time was reintroduced, suggesting a correlation between delayed school start times and improved outcomes for students. Later school start times have also been linked to important outcomes such as reductions in depressed mood (Owens, Belon, & Moss, 2010) and lower rates of student driving accidents (Danner & Phillips, 2008). Despite the promising outcomes posited from Kelley et al. (2017), it should be acknowledged that sleep duration was not measured. Consequently, the results cannot assume a link between the findings and increased sleep duration, despite the expectation that later school times may increase sleep and coincide with adolescent circadian rhythms more efficiently. Nonetheless, it seems important to consider the benefit that delayed school start times can have on the health, academic outcomes, and the safety of adolescents.

5.5 The bidirectional relationship between parental sleep and CS

A view that permeates the literature is the impact CSDs can have on parental sleep (Boergers, Hart, Owens, Streissand, & Spirito, 2007; El-Sheikh, Kelly, Bagley, & Wetter, 2012). However, it appears that the relationship between parental sleep and CS may be reciprocal with both impacting each other. Research has linked poor parental sleep to many factors including: low SES (Bøe et al., 2012; Stein et al., 2001), caring for a child with developmental difficulties (Gallagher, Phillips, & Carroll, 2009), child behaviour difficulties (Mihaila & Hartley, 2018), and long work hours (Krueger & Friedman, 2009). However, many of these studies use subjective parental report data which may be impacted by bias, error, and overestimation (Rönnlund et al., 2016). Furthermore, research on adults with primary insomnia found participants to overestimate the time it took them to fall asleep and underestimate their total sleep durations (Tang & Harvey, 2004). This research reported that despite participants sleep duration falling in the typical range for adults, they demonstrated distorted views of their own sleep. Therefore, parental insomnia and cognitions regarding their own sleep may also impact their reported sleep quality and quantity, highlighting a limitation to consider in parental sleep studies where self-report data is used.

Recent research has addressed this issue by collecting parental report data as well as using an actigraphy to collect objective sleep data of 2-6 year olds. The study wanted to address whether parental sleep quality may impact the estimation of her/his child's sleep problems (Rönnlund et al., 2016). The results demonstrated that parental sleep problems were associated with more frequent reporting of CSDs compared to parents who slept better. However, interestingly the actigraphy results did not identify an increase in CS problems, suggesting that poor parental sleep quality may be associated with overreporting of CS problems. These findings gain support from the National Sleep Foundation (2004) who identified that parents who reported a CSD were more likely to report getting too little sleep compared to parents who did not report any CSDs. Such findings propose the importance of considering parental sleep quality when working with CSDs, as this may lead to overestimation or prevent parents from reporting any concerns.

6. Cultural Context

The cultural context influences individuals' expectations and perceptions about sleep, as well as what is appropriate as an intervention to aid SDs (El-Sheik & Sadeh, 2015). Some of the cultural influences that impact sleep include: co-sleeping, napping during the day, parental work dictating sleep times, and the effect of poverty on sleep (El-Sheikh & Sadeh, 2015). It is also important to consider the culture of the different systems around the child, and whether these encourage or promote healthy CS practices. Research has suggested that parents (Owens & Jones, 2011), teachers (Buckhalt, 2013), and EPs (Rydzkowski et al., 2016) lack the necessary knowledge and training on CS. This could suggest that the present culture within these systems is not one that promotes and understands how to aid CS. Therefore, warranting further investigation to garner the level of understanding of CS within these systems.

6.1 Co-sleeping

Sleeping arrangements are largely impacted by the cultural expectations and traditions that an individual experiences, and therefore parent and CS practices vary across cultures and countries (Smith et al., 2017). Co-sleeping, whereby the child sleeps in the bed with the parent, has been reported to differ greatly when studying Eastern and Western cultures (Mindell, Sadeh, Kohyama, & How, 2010; Iwata, Iwata, & Matsuishi, 2013). Mindell et al. (2010) reported that 57% of children studied in

Western countries sleep in their own beds, compared to only 4% of children in Asian countries. These findings are replicated by studies researching bed and room sharing in Japan, China, and Korea (Latz, Wolf, & Lozoff, 1999; Liu, Liu, & Wang, 2003; Yang & Hahn, 2002), which highlighted a high prevalence for co-sleeping amongst these cultures. Chung and An (2014) describe a possible reason for this difference in Western and Eastern cultures approach to co-sleeping. The authors describe how Western cultures emphasise the importance of developing emotional independence and autonomy in children which is encouraged through independent sleeping. On the contrary, Eastern cultures are reported to view solitary sleeping as a form of neglect, highlighting how a cultural norm can determine what is viewed as an 'appropriate' sleeping practice. However, an apparent issue within the co-sleeping literature is the frequent interchangeable use of 'co-sleeping' to refer to both room sharing and bed sharing. Therefore, it is important to acknowledge this overarching term which may be used to describe both sleeping practices. Thus, this literature review will use the terms bed sharing or room sharing to reduce ambiguity.

This is of particular importance when considering the link between bed-sharing and sudden infant death syndrome (SIDS) (Blair, Sidebotham, Pease, & Fleming 2014), when considering rates of SIDS when the child shares a room with a parent rather than a bed. Blair and colleagues (2014) studied the data from five English health regions and reported that 36% of SIDS infants were bed sharing with an adult at the time of death. Further research examining SIDS rates in Scotland, Ireland and the United States, reports that bed sharing accounts for 30-50% of all SIDS deaths (Tappin, Brooke, Ecob, & Gibson, 2002; McGarvey, McDonnell, Chong, O'Regan, & Matthews, 2006; Hauck et al., 2009). However, a case-controlled study researching SIDS cases across 16 European countries found SIDS was impacted by the mother's consumption of alcohol and/or cigarettes (Carpenter et al., 2004). Therefore, the link between bed sharing and SIDS may be heightened by parental substance use, rather than the act of sleeping in the same bed. This finding gains support from further studies (Scragg et al., 1993; Horsley et al., 2007) and it is recommended by the National Institute for Health and Care Excellence (NICE) guidelines that parents do not consume alcohol, drugs, or cigarettes if they choose to bed share with their infant (NICE, 2014).

Despite the evident concerns linked to bed sharing and SIDS, this sleeping practice has been postulated to improve the parent-child relationship and attachment (Chung & An, 2014). It is important to consider how bed sharing and room sharing may also impact CS. These sleep practices have been linked to a range of CS problems including frequent awakenings, bedtime resistance, dependency on parents, separation anxiety, and difficulties self-soothing (Hayes, Parker, Sallinen, & Davare, 2001; Cortesi, Giannotti, Sebastiani, & Vagnoni, 2004; Brazelton, 1992; Sadeh, Tikotzky, & Scher, 2010). Thus, a knowledge of the adverse symptoms linked to bed/room sharing may help parents to make an informed decision on their child's sleep arrangements.

The literature on bed/room sharing highlights the importance of understanding the differences between cultures, and the importance placed on different sleeping practices. Values within different cultures are reported to be reflected in the cultural expectations of infant sleeping patterns (Caudill & Plath, 1966). However, changes in sociodemographic conditions, such as advances in technology, shifts in cultural perspectives, and a focus on education are described as factors that can change the socialising practices within a culture, including parenting and sleep practices (Greenfield, 2009). Researchers have explored the notion of whether sociodemographic changes in Japan have influenced mother-infant sleeping practices (Shimizu, Park, & Greenfield, 2014). The researchers hypothesised that urbanisation, increases in wealth and education, and technological advancements would impact parenting values and decrease percentages of mothers bed sharing with their infant. However, despite sociodemographic changes in Japan, the research identified consistent bed sharing practices across three generations from the 1960s into the twenty-first century (Caudill & Plath, 1966; Ohkubo, 2005; Shimizu et al., 2014). Despite rates of bed sharing being reported as consistently high across three generations, it is important to acknowledge the expressed conflicts from modern mothers between social expectations of child rearing, and social expectations of modern women in Shimizu and colleague's study. Such results could suggest that parents can experience difficulties when faced with differing expectations from cultural changes over time, or when moving to a new country. Therefore, it appears important for professionals to be aware of cultural differences and conflicts when working with

parents who have concerns about their child's sleep, to ensure the support is culturally appropriate and in line with the parent's beliefs.

6.2 Medication

6.2.1 Melatonin prescription

Children with both a developmental disorder and a sleep disorder or difficulty are frequently prescribed melatonin medication to increase sleep latency and duration (Jan & Freeman, 2004). Melatonin plays a role in sleep initiation and is released into the bloodstream at dusk to signal to the brain and body that it is time to sleep. Once an individual is asleep, melatonin levels in the body decrease in concentration across the night and into the morning. When the individual is exposed to light, the pineal gland stops producing melatonin to signal wakefulness to the brain (Walker, 2017). At around 3 months of age melatonin levels rise at night and decrease during the day which aids the sleep-wake cycle (Rivkees, 2003).

Prescribed melatonin has been suggested to improve CS in such conditions as epilepsy (Jones, Huyton, & Hindley, 2005), ASD (Wright et al., 2011), ADHD (Hoebert, Van Der Heijden, Van Geijlswijk, & Smits, 2009) and Rett Syndrome (McArthur & Budden, 1998). With a number of studies also correlating improvements in CS with melatonin consumption (Smits, Nagtegaal, Van der Heijden, Coenen, & Kerkhof, 2001; Van der Heijden, Smits, Van Someren, Ridderinkhof, Gunning, 2007; Wirojanan et al., 2009). However, the research demonstrates conflicting views on the effectiveness of melatonin on improving CS, with results differing greatly across studies. A double-blind, randomised controlled trial compared the results of 3 months of melatonin prescription versus a 3 month placebo trial (Appleton et al., 2012). Melatonin medication did not lead to clinically significant improvements in sleep efficiency or total sleep duration. Additionally, the reported total sleep duration differed considerably between the subjective sleep diary and objective actigraphy measurement, with parents reporting longer sleep durations than the actigraphy measured. This highlights methodological issues of using subjective sleep diaries as it may be unclear when the child fell asleep, thus impacting sleep duration data.

Research also appears to highlight discrepancies between melatonin use and nighttime awakenings, with findings reporting melatonin to have no impact on reducing

awakenings (Dodge & Wilson, 2001; Coppola et al., 2004) and interestingly one study found melatonin to increase awakenings (Paavonen, Nieminen-von Wendt, Vanhala, Aronen, & von Wendt, 2003).

These variations in the findings of research on melatonin and CS may be explained by the individual differences of the child. Research has suggested that melatonin medication may only be suitable for circadian rhythm sleep disorders, as findings report that melatonin medication may not be suitable for children suffering from head injuries, tumours, orthopaedic problems, and pain disorders (Jan & Freeman, 2004). All of which are non-circadian sleep disorders, therefore melatonin levels may not impact the sleep of these children. This point would stress the importance of clinicians obtaining sleep histories to ensure that medication is only administered where appropriate. Conversely, the differing results may be explained by a proposed current uncertainty in the medical profession concerning appropriate dosages for child ages and health (Esposito et al., 2019). This suggestion seems appropriate when considering the considerable difference between dosages prescribed in all of the studies mentioned above, with child dosages varying from 0.5mg (Appleton et al., 2012) up to 24mg per night (Jones et al., 2005).

6.2.2 Discrepancy between medical professionals

There is a discrepancy within the literature regarding the practice of medical professionals when working with children with SDs or disorders. Jan and Freeman (2004) report that physicians are often inadequately trained on how to treat SDs in children with neurodevelopmental disabilities. The authors report that physicians often do not obtain satisfactory sleep histories, which raises issues when considering all of the variables that may impact a child's sleep. The practice of paediatricians in England has been studied to explore variations when working with CSDs (Herberholz & Ozer, 2015; Bajaj & Ozer, 2015). An online survey of community paediatricians in the East of England identified that the practice varied greatly in regard to the dose given, the length in duration of review dates set, and whether clinicians gave families leaflets or referred to specialist sleep clinics (Herberholz & Ozer, 2015). This variability amongst paediatricians was also highlighted in a study by Bajaj and Ozer (2015) who examined 17 cases where children with neurodevelopmental disorders were prescribed melatonin. The study found that in only one case was a detailed sleep history taken,

no sleep diaries were used, dosages varied greatly, and only 12% of families were given verbal advice on sleep hygiene. These studies would suggest that there is significant variability amongst paediatricians in England when working with children with SDs. Bajaj and Ozer (2015) suggest implementing the following methods to create a more consistent approach to CS. These include: developing and implementing evidence-based melatonin guidelines, introducing a tool kit to conduct more effective sleep interviews, and informing clinicians on sleep information to help families establish good sleep hygiene. This last point seems to be significant when considering the importance placed on incorporating sleep hygiene and a behavioural approach with melatonin medication (Jan & Freeman, 2004).

Mindell, Kuhn, Lewin, Meltzer, and Sadeh (2006) report that educating and teaching parents behavioural strategies is more effective than pharmacological interventions, as they are more accessible and acceptable for parents, children and clinicians. Hence, reinforcing the importance of clinicians administering information and advice on sleep hygiene and behavioural strategies. This seems particularly important when considering that parents are reported to frequently consult with clinicians when their child experiences SDs (Jin, Hanley, & Beaulieu, 2013).

It is also important to consider the apparent risks of administering melatonin medication to children with certain conditions. Whilst melatonin is reported to have a relatively low level of side effects (Wright et al., 2010), research has implicated negative impacts on certain conditions. Coppola et al. (2004) researched the impact of melatonin and a placebo drug on individuals with learning difficulties and/or epilepsy. Interestingly seizures reappeared in two participants whilst taking melatonin, and stopped after discontinuation of the medication. This could suggest that melatonin may not always be appropriate for children with epilepsy, and stresses the importance for clinicians to be aware of both the side effects of melatonin and the child's sleep history and health before prescribing medication. The study also found both melatonin and the placebo to significantly increase the duration of nocturnal sleep, potentially suggesting that the act of taking medication itself may improve sleep.

Difficulties in respiratory functioning in asthmatic individuals (Sutherland et al., 2002; Sutherland et al., 2003), increased seizure frequency (Sheldon, 1998), and increases

of dysphoric mood, anger, and depression (Carman, Post, Buswell, & Goodwin, 1976) have all been correlated with melatonin use. Conversely, melatonin administration has been linked to improved attention and socialisation (Jan & O'Donell, 1996), reduced tension headaches and migraines (Nagtegaal, Smits, Swart, Kerkhof, & van der Meer, 1998), and as a treatment for jet lag (Caspi, 2004). Therefore, the literature highlights the need for clear guidelines for when and why it is suitable and appropriate to prescribe melatonin due to the disparity between benefits and limitations of administering melatonin, the proposed inadequate training of physicians (Jan & Freeman, 2004), and variability of paediatricians when prescribing melatonin (Bajaj & Ozer, 2015).

The incongruity amongst the literature on using medicated melatonin highlights a clear variability in the prescription of the drug. It is important to note that the majority of the literature on melatonin and CS is conducted on children with developmental disorders. Therefore, the aforementioned points and research findings cannot be generalised to TD children. Thus, the inconsistency amongst the research on prescribing melatonin to children would suggest that medical professionals would benefit from clear research and guidelines on CS and the prescription of melatonin.

6.3 Current knowledge of CS amongst the systems

6.3.1 Parental knowledge of CS

Parental knowledge of sleep hygiene and CS requirements has been correlated with promoting positive sleep habits in children, including more consistent sleep and wake times throughout the week, longer sleep durations, and shorter sleep latencies (McDowall et al., 2017; Kanis, Schwerdtle, Kubler, & Schlarb, 2015). However much of the research on parental knowledge of CS displays considerable variability, with parents frequently underestimating CS duration requirements (McDowall et al., 2017; Owens & Jones, 2011) and holding beliefs about CS which are incorrect (Owens & Jones, 2011; Jones, Owens, & Pham, 2012).

McDowall and colleagues (2017) identified that parents with greater CS knowledge reported higher consistencies between weekday and weekend sleep routines and were more likely to report earlier bedtimes and wake times for their children. These

findings gain support from Mindell et al. (2009) who identified the importance of consistent sleep schedules promoting positive sleep behaviours in children. Consistent bedtimes have also been associated with better cognitive ability at 7 years (Kelly, Kelly, & Sacker, 2013). Conversely, the study highlighted that parents who underestimated their child's sleep requirements reported later weekday bedtimes and longer sleep latencies. Interestingly parents who overestimated their child's sleep requirements reported significantly longer sleep latencies which would suggest that the children may not be ready for sleep. Therefore, these findings would suggest that both overestimating and underestimating sleep duration requirements could lead to detrimental outcomes for CS. Similar findings were reported by Owens and Jones (2011) who identified that 76% of parents studied, underestimated the duration of sleep that their child required. The study also highlighted many detrimental parental practices in the home that have been linked to poor CS.

With both aforementioned studies linking parental knowledge of sleep to positive sleep practices, it seems important to question the best way of educating and informing parents on such matters. An intervention study that measured parental knowledge of sleep pre and post receiving an educational sleep brochure, highlighted variability amongst parental knowledge (Jones et al., 2012). At pre-intervention no parents were able to answer all sleep related questions correctly and 54% of parents answered more than half incorrectly, highlighting a lack of knowledge amongst the sample. At post measure there was a significant increase in sleep knowledge irrelevant of education levels of parents. Since previous research has asserted that higher educated parents are better informed about CS practices, it is important to ensure leaflets are appropriately worded to enhance accessibility for a range of education levels (Owens & Jones, 2011; McDowall et al., 2017; Kanis et al., 2015). This may help to bridge the gap between the sleep knowledge of parents across socio-economic statuses. Nonetheless, it is important to acknowledge that the leaflet did not impact the correct estimations of adequate CS durations, a finding which appears to permeate the literature. Additionally, it was unclear how explicitly the leaflet educated parents on sleep durations and whether this information was clear and accessible. Therefore, work needs to address CS age recommendations to help parents obtain clear information about their child's sleep requirements. The study also raises considerable validity issues as the data is prone to social desirability reporting. It is also important

to consider that despite parents reporting their intention to change unhealthy sleep practices in the home, this was not measured so it remains unknown what practice effects occurred.

6.3.2 School staff knowledge of CS

Although studies have been run in education settings whereby school staff teach children about healthy sleep practices (Ashton, 2017; Wilson et al., 2014; Gruber et al., 2016), there does not appear to be research that examines the current levels of sleep knowledge amongst teaching staff. Teacher knowledge of CSDs could help to identify and alleviate SDs. The early transition period where a child begins school has been described as an important time to identify threats to a child's functioning, such as poor sleep, as it may help to optimise a child's transition into education (Quach et al., 2011). Therefore, it may be important for school staff to be aware of symptoms of poor sleep to promote a child's readiness for school, particularly when considering that 40% of children are estimated to experience SDs during their early school years (Meijer, 2008; Meltzer & Mindell, 2008; Paavonen et al., 2002).

Due to the lack of literature exploring teacher knowledge on CS, it is difficult to draw conclusions as to whether schools require more support and education on healthy CS. Nonetheless, research has suggested that sleep is not prominent within the educational curricular for professionals who work in schools (Buckhalt, 2013). Buckhalt (2013) furthers this point by suggesting that sleep science should become "an integral part of training curricular for teachers and other school professionals" (p.9). By educating staff it is thought that school staff may be able to recognise SDs, work with parents to address these, and educate children about the importance of good sleep practices (Buckhalt, 2013). Furthering this point, school staff knowledge of CS may encourage teachers to explore CSDs before assuming a learning or behaviour difficulty. However, without literature exploring school staff knowledge on CS it is not viable to comment on the current knowledge level within schools.

6.3.3 EP knowledge of CS

Similar to teacher knowledge, at present there is no research on EP knowledge of CS. At present no studies have been identified as researching the EP role in relation to CS, or studying what the current knowledge or training is with EPs in the United

Kingdom (UK). One American journal reviewed sleep and its relationship to school achievement. It concluded by suggesting ways that school psychologists could work to address these issues (Buckhalt et al., 2009). Similarly, one British journal reviewed interventions for adolescents with insomnia and suggested ways that EPs could work to support CSDs or disorders (Rydzkowski et al., 2016). However, despite these recommendations that advocate the importance of EPs learning about and addressing CS issues, to date no studies have researched this.

Interestingly this area has been researched in relation to clinical psychologists and the lack of sleep education and training that is involved in the doctoral training programmes in the United States and Canada (Peachey & Zelman, 2012; Meltzer, Phillips, & Mindell, 2009). When researching accredited clinical psychology programmes as little as 5% of programmes offered academic training on sleep (Lichenstein et al., 1998; Meltzer et al., 2009). Peachey and Zelman (2012) implemented an online 10 week sleep course in the United States, which was found to improve sleep knowledge and student self-efficacy. An important finding to consider when 100% of the intervention group and 84.2% of the comparison group felt that training on sleep and sleep disorders was important for their future clinical work. Despite these findings not being comparable with British EPs in training, it seems important to explore whether such training is sought after by EPs, particularly given all of the aforementioned information regarding the impact SDs can have on children. Therefore, this gap in the literature warrants further investigation.

7. Gaps in the Existing Research Literature: Rationale for the Current Study

EPs play a role in promoting mental health and wellbeing in children and YP (Rydzkowski et al., 2016). However, when considering the many implications poor sleep can have on child outcomes it has been postulated that psychological interventions can be highly beneficial for both the child and family (Rydzkowksi et al., 2016). However, currently there has been no published research into the role of the EP in working with CSDs, and no literature has explored EP knowledge and/or training of CS. Researching this area could help to understand whether sleep is an issue that is currently addressed in the work of EPs across the UK, and to identify if EPs would benefit from training and/or knowledge of how to support CSDs with parents and

school staff. This research could then help to identify who may be best suited to provide support for schools and parents regarding CS.

In a recent review of interventions for adolescents with insomnia, Rydzkowski et al. (2016) proposed a significant role for EPs, parents and school staff. Although the paper focused on adolescents, it appears that these approaches could support a wider age range. The author's recommendations are displayed in Figure 2.

Figure 2: A proposed role for EPs, parents and school staff by Rydzkowski et al. (2016)

A greater knowledge of the impact that lifestyle can have on healthy sleep.
Schools to provide information to children and YP about sleep hygiene to prevent SDs.
EPs to use appropriate assessments to understand the nature of a child's SDs before delivering interventions or support.
EPs to explore motivational factors with parents before implementing strategies, and to include parents in the process.
EPs to contribute towards multi agency working by providing training on the development and psychology of sleep to parents, teachers and YP.
The need for a greater awareness amongst EPs, parents, professionals and the young person of typical and atypical sleep patterns.
Children and young people with ASD or developmental disabilities to be worked with on an individual level to explore routines, sensory difficulties and anxieties. These should be explored to ensure the individual is supported correctly and appropriate strategies are implemented.

These recommendations are based on a literature review of insomnia research with adolescents so are speculations of what EPs, school staff, and parents could be doing to support CS. Therefore, research is required to explore the current knowledge and views of these three groups to identify if such recommendations are required or necessary. Research has explored parental knowledge of CS (McDowall et al., 2017), but at the current time of writing, no studies on school staff knowledge of CS were identified. Therefore, there is a need for research to explore the knowledge, views, and experience of EPs, parents and primary school staff across the UK, to understand how CSDs are currently being approached and if there is scope for further support amongst the systems.

8. Current Study

The literature review has highlighted the significant impact that CSDs can have on a child and the systems around her/him. The literature also demonstrates a bi-directional relationship between CSDs and external factors such as parental mental health, physical sleep environments, marital discord and cultural norms such as school start times and sleep practices. Considering the depth of the research it is evident that sleep is extremely important for child development and daily functioning, and SDs can have a detrimental impact on numerous outcomes. Therefore, the exploration of the literature on CS has highlighted a need for research to explore whether there is a role for EPs in supporting parents and schools with CS. Studies have suggested positive outcomes when implementing school-based sleep education (Cain, Gradisar, & Moseley, 2011), educating parents on CS (Malow et al., 2014) and implementing practical sleep routines in the home (Eckerberg, 2002; Sadeh, 1994). Hence, it appears that both school and home based interventions may be appropriate ways of supporting and improving CSDs.

There is a significant gap in the literature of no studies exploring the EP role in relation to sleep, as well as no research exploring how CS is being addressed and understood by parents, EPs, and school staff in the UK. Accordingly, this study will aim to explore current views, perceptions, and knowledge of CSDs amongst the three participant groups to understand if EPs could be well placed to support and promote healthy sleep practices. This may allow for a more systemic view of how schools, parents, and EPs can be supported in helping CSDs. As a result, the research aims to:

Obtain an understanding of EPs, parents and primary school staff's views on CS.

Obtain an understanding of EPs, parents and primary school staffs' experience of CSDs.

Research the current knowledge base of CSDs in the EP, parents and primary school staff participants, including an understanding of age related sleep duration recommendations.

Explore who the different groups believe should be supporting CSDs and what each group consider that they and the other two systems could do to improve CS.

9. Key Research Questions

To achieve the aforementioned research aims, this study will explore the following research questions:

What is the current knowledge of CS (including sleep durations, practical behavioural strategies) of EPs, parents and school staff in the UK?

What is the experience of EPs, parents and primary school staff in working with and supporting CSDs?

Is there a role for EPs in supporting CSDs?

Who do EPs, parents and primary school staff feel is best suited to support CSDs?

Is there a desire or requirement for training on child sleep amongst the three participant groups?

Word count: 11,147

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Part 2: Empirical Paper

1.Abstract

The present study aimed to explore the current views, perceptions, and knowledge of child sleep difficulties amongst primary school staff, parents of primary school aged children, and educational psychologists. Three hundred and ninety-seven participants took part in the study who were aged eighteen or over and lived in the United Kingdom. Each participant took part in an online questionnaire to gather her/his views and experiences of child sleep and child sleep difficulties. A mixed method design was used to collect both quantitative and qualitative data, which allowed for the data to be compared extensively between groups. The data was analysed using descriptive statistics and thematic analysis. The results revealed variations of sleep knowledge and age related sleep durations across all three groups, with EPs over or underestimating by two and a half hours more frequently than any other group. A desire and requirement for sleep training was evident amongst all three groups, and EPs reported that very few educational psychology services or doctorate courses were providing such training. A high proportion of both EPs and school staff reported frequently encountering the result of sleep difficulties in their work. Correspondingly, a consensus for sleep information to be integrated into the curriculum was echoed across the three participant groups. The findings are discussed in relation to the current child sleep research and practical and future directions for the EP profession are proposed.

2.Introduction

Sleep is reported as essential for the development of a child's mood, health, performance, and behaviour (National Sleep Foundation, 2004). However inadequate CS has been linked to detrimental outcomes in: behaviour (Fallone, Owens, & Deane, 2002); academic performance (Curcio, Ferrara, & De Gennaro, 2006); cognitive development (Touchette et al., 2007); childhood obesity (Nixon et al., 2008); and child development and attention regulation (Skúladóttir, 2016). Research suggests that to maximise a child's potential and development, optimal sleep is essential (Galland & Mitchell, 2010).

CS is both impacted by and has an impact on the systems around the child. El-Sheikh and Sadeh (2015) describe the bi-directional interplay of the child, immediate, social,

and cultural contexts on sleep from a systems perspective. The authors highlight the complexity of systems impacting CS as well as sleep quality impacting upon the systems surrounding the child. Therefore, each of the four contexts will be explored in turn in relation to CS.

2.1 Child Context

Certain diseases and health difficulties have been linked to CSDs. Asthma has been correlated with reduced sleep quality (Banasiak, 2016) and therefore increasing rates of school absence (Diette et al., 2000). Similarly, eczema in children has been linked to sleep disturbances (Camfferman, Kennedy, Gold, Martin, & Lushtington, 2013), which in turn has been correlated with neurocognitive deficits in children (Camfferman et al., 2013). Numerous other health problems have been studied in their relation to impacting CS (Heng & Wirrell, 2006; Williams, Sears, & Allard, 2004). As well as a child's health being linked to SDs, extensive research has focused on the impact of developmental and genetic disorders and their impact on CS. Research evidences that between 50-80% of children with ASD suffer from SDs (Couturier et al., 2005; Krakowiak, et al., 2008; Souders et al., 2009), which are reported to occur ubiquitously across the spectrum (Baker, Richdale, Short, & Gradisor, 2013). Such SDs have been associated with social, behavioural and attention problems (Schreck, Mulick, & Smith, 2004; Goldman et al., 2011; Malow et al., 2006) in children with ASD. These findings suggest a correlation between SDs and daytime functioning, highlighting the importance for parents, school staff, and EPs being aware of the association and consequence of SDs amongst children with ASD.

2.2 Immediate Context

The immediate context that a child experiences is described as having a strong impact on CS. Parenting practices, sleep conditions in the home, and the technology to which the child is exposed (El-Sheikh & Sadeh, 2015; National Sleep Foundation, 2011), are all described as factors that can impact the quality of sleep significantly. Parenting practices that have been reported to help a child develop a consistent sleep-wake cycle consist of monitoring sleep and wake times, supervising light and technology exposure before sleep, and limiting caffeine consumption (El-Sheikh & Sadeh, 2015; Calamaro, Yang, Ratcliffe, & Chasens, 2012; Mindell, Meltzer, Carskadon, & Chervin, 2009). However, parental interactive behaviours such as rocking and holding a child

as s/he falls asleep, have been reported to promote infant sleep problems (Hiscock, 2010). These practices can create sleep associations for a child whereby s/he is unable to self-soothe and fall asleep independently. Research has suggested that educating parents on evidence-based sleep practices is more effective and acceptable for parents than medication (Mindell, Kuhn, Lewin, Meltzer, & Sadeh, 2006). Furthermore, it has been suggested that exploring parental perceptions around their child's sleep is important when supporting parents with CSDs (Hiscock, 2010). This may be important for EPs to consider if sleep were to become integrated into their professional roles.

Further factors that have been reported to impede CS are the sleep conditions experienced in the home. Cramped, noisy and chaotic households have all been reported as detrimental to CS (Stein et al., 2001). Multiple negative sleep practices have been linked to nighttime television watching in 4-10 year olds (Owens et al., 1999). Research asserts that the blue light released from screens reduces human melatonin secretion (Chellappa et al., 2013) which is required when falling asleep (Higuchi, Motohashi, Maeda, & Ishibashi, 2005). In line with these findings, Mindell et al. (2009) identified that not allowing a television in a child's bedroom was associated with better CS across several age ranges. Highlighting the impact that a child's physical environment can have on sleep quality and duration.

2.3 Social Context

The research posits a link between poor CS and academic and behavioural outcomes in school (Ravid, Afek, Suraiya, Shahar, & Pillar, 2009; Sadeh, Gruber, & Raviv, 2003). A meta-analysis of 86 studies found sleep duration to have a significant positive correlation with executive functioning and cognitive performance, whilst shorter sleep was linked to more behavioural problems in children (Astill et al., 2012). These outcomes have been found to occur when sleep is reduced by as little as 30 minutes a night (Sadeh et al., 2003), suggesting the importance of considering a child's sleep when discussing her/his behaviour or learning in school. Buckhalt (2013) furthers this idea by proposing that sleep science should be implemented in the training for teachers, school professionals, and psychologists. School based sleep interventions for students have also been correlated with an improvement in both sleep and academic outcomes (Gruber, Somerville, Bergmame, Fontil, & Paquin, 2016; Gruber

at al., 2014). Conversely, school itself has also been asserted to impact upon CS (Boergers, Gable, & Owens, 2014; National Sleep Foundation, 2014) with early school start times reported as detrimental for a child's sleep and therefore school outcomes (Danner & Phillips, 2008; Wahistrom, 2002; Boergers et al., 2014).

CSDs have been linked to poor parental sleep (Boergers, Hart, Owens, Streissand, & Spirito, 2007; El-Sheikh, Kelly, Bagley, & Wetter, 2012). However, the relationship between parental sleep and CS may be reciprocal with both impacting each other. Research has posited a link between poor parental sleep and overreporting CS problems (Rönnlund, Elovainio, Virtanen, Matomkai, & Lapinleimu, 2016). Such findings propose the importance of considering parental sleep quality when working with CSDs.

2.4 Cultural Context

The cultural context influences individual's expectations and perceptions about sleep, as well as what is considered an appropriate sleep intervention (El-Sheik & Sadeh, 2015). Co-sleeping, the use of medication to aid sleep, and the knowledge and value placed on sleep are cultural influences that can impact CS (El-Sheikh & Sadeh, 2015). It is also important to consider the culture of the different systems around the child, and whether these encourage or promote healthy CS practices. Research has suggested that parents (Owens & Jones, 2011), teachers (Buckhalt, 2013), and EPs (Rydzkowski, Canale, & Reynolds, 2016) lack the necessary knowledge and training on CS. This could suggest that the present culture within these systems is not one that promotes and understands how to aid CS. Therefore, warranting further investigation to garner the level of understanding of CS within these systems.

2.5 Gaps in the literature and current study

At present, there has been no published research into the role of the EP in working with CSDs, and no literature has explored EP knowledge and/or training of CS. However, in a recent review of interventions for adolescents with insomnia, it was advocated that EPs should contribute to multi-agency interventions by providing training for teachers, parents, and YP on the issues around SDs (Rydzkowski et al., 2016). Similarly, at the current time of writing, no studies on teacher knowledge of CS were identified. Therefore, there is a need for research to explore the knowledge,

views, and experience of EPs, parents, and primary school staff across the UK, to understand how CSDs are currently being approached and if there is scope for further support amongst the systems. This may allow for a more systemic view of how the three aforementioned groups can be supported in helping CSDs. As a result, the research aims to:

Obtain an understanding of EPs, parents and primary school staff's views.
Obtain an understanding of EPs, parents and primary school staffs' views and experience of CSDs.
Research the current knowledge base of CSDs in the EP, parents and primary school staff participants, including an understanding of age related sleep duration recommendations.
Explore who the different groups believe should be supporting CSDs and what each group consider that they and the other two systems could do to improve CS.

3. Methodology

3.1 Ontology and Epistemology

The epistemological and ontological position of this research is from a critical realist stance (Bhaskar, 1989). Critical realism depicts that there are realities within the world however, the nature of these realities differ across groups, cultures, and societies, preventing an objective and certain knowledge of the world from being achieved (Maxwell, 2012). This stance was adopted to ensure the researcher acknowledged the possible impact of cultural and social biases, whilst also exploring the differing layers of reality regarding CS amongst the participants.

Different theories and perspectives are therefore considered, and knowledge is viewed as "partial, incomplete, and fallible" (Maxwell, 2012, pp.5), in line with the critical realist stance. Therefore, this research aims to consider participant's objective reality and truth of sleep, whilst considering their subjective and differing experiences of CSDs within their professional or home lives.

3.2 Participants

A total of 397 participants were recruited for the study. The participants fell into three groups: EPs (n=142), primary school staff (n=113), and parents/carers of children currently attending primary school (n=142). In total 343 females and 49 males took part in the study and not all participants entered their gender. All participants were adults and aged 18 years or over. The EPs and primary school staff participants were recruited from all eleven geographical locations across the United Kingdom and were working in these locations at the time of completing this study. Parents/ carers were recruited from ten out of the eleven geographical locations in the United Kingdom. All participants completed an online questionnaire (Appendices I, K & M) about their knowledge and experience of CSDs. A convenience sampling method was used to recruit participants.

Table 2. Inclusion criteria for participants

EP inclusion criteria	**School staff inclusion criteria**	**Parent/ carer inclusion criteria**
• Male or female • Aged 18 or over • Working or training as an EP • Working in the UK	• Male or female • Aged 18 or over • Working in a primary school with children • Working in the UK	• Male or female • Aged 18 or over • Living in the UK • Parent/ carer of a child/ children currently attending primary school

3.3 Design

A mixed method design was used to collect both quantitative and qualitative data to understand the knowledge, views, experiences, and perceptions of CSDs amongst the three participant groups. A mixed method design allowed this information to be compared extensively between groups. It also facilitated an opportunity to explore both the knowledge base and experiences amongst groups using Likert scales and closed questions, as well as exploring participants' views and perceptions via open, long answer questions. The use of a mixed method design has been stated to strengthen studies and enhance validity (Breakwell, Smith, & Wright, 2012). Due to the critical realist stance of the research, it was important to collect qualitative data alongside quantitative, to allow triangulation and exploration of the differing layers of reality for the participants.

3.4 Ethics

Ethical approval was sought and granted from Cardiff University School of Psychology Research Ethics Committee. All data was collected anonymously via the online questionnaires and no identifying data was sought. An information sheet about the study was placed at the beginning of each questionnaire, which explained that participants had a right to withdraw from the study at any point when completing the questionnaire. This explained the parameters or the study and ensured all participants gave full informed consent by ticking a consent box before taking part. All questions were open, to prevent participants from having to answer any questions they did not wish to. Participants were given the researcher's and University supervisor's email address on the debrief form if they had any questions or queries after taking part. They were also signposted to a journal article on CS if they wanted to learn more and were given more information about the study.

3.5 Procedure

The research and analysis procedure is displayed below in Figures 3 and 4.

Figure 3. Research procedure

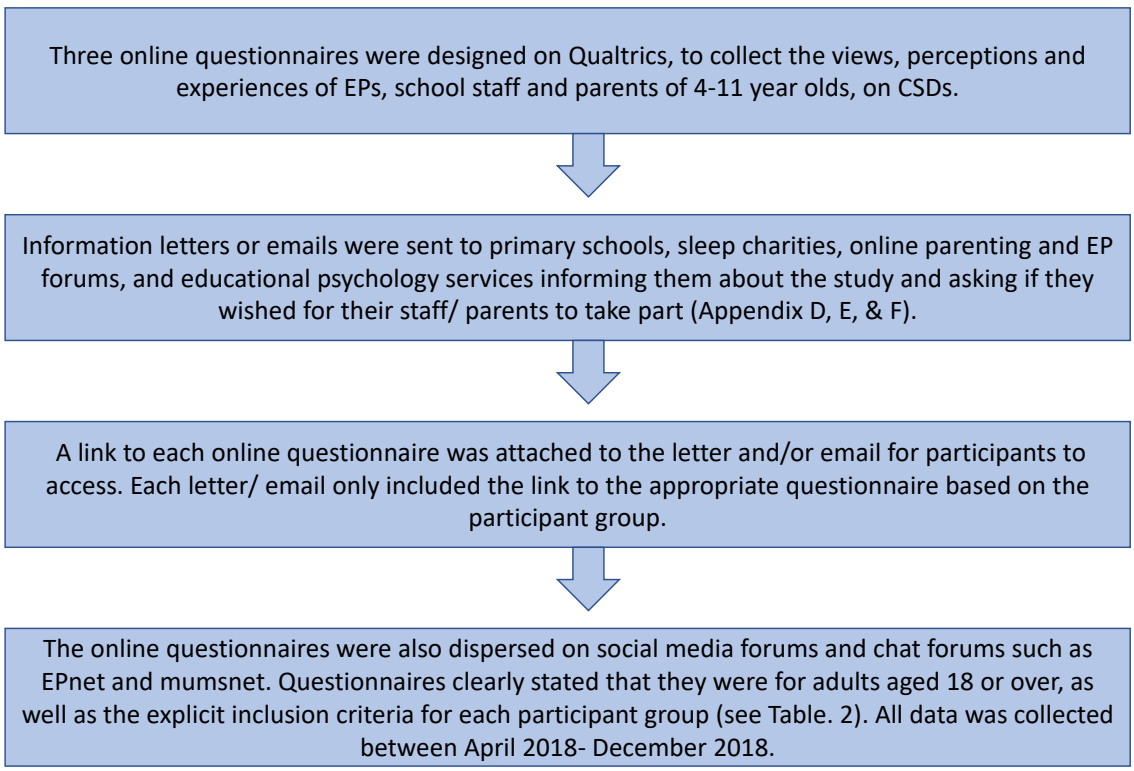
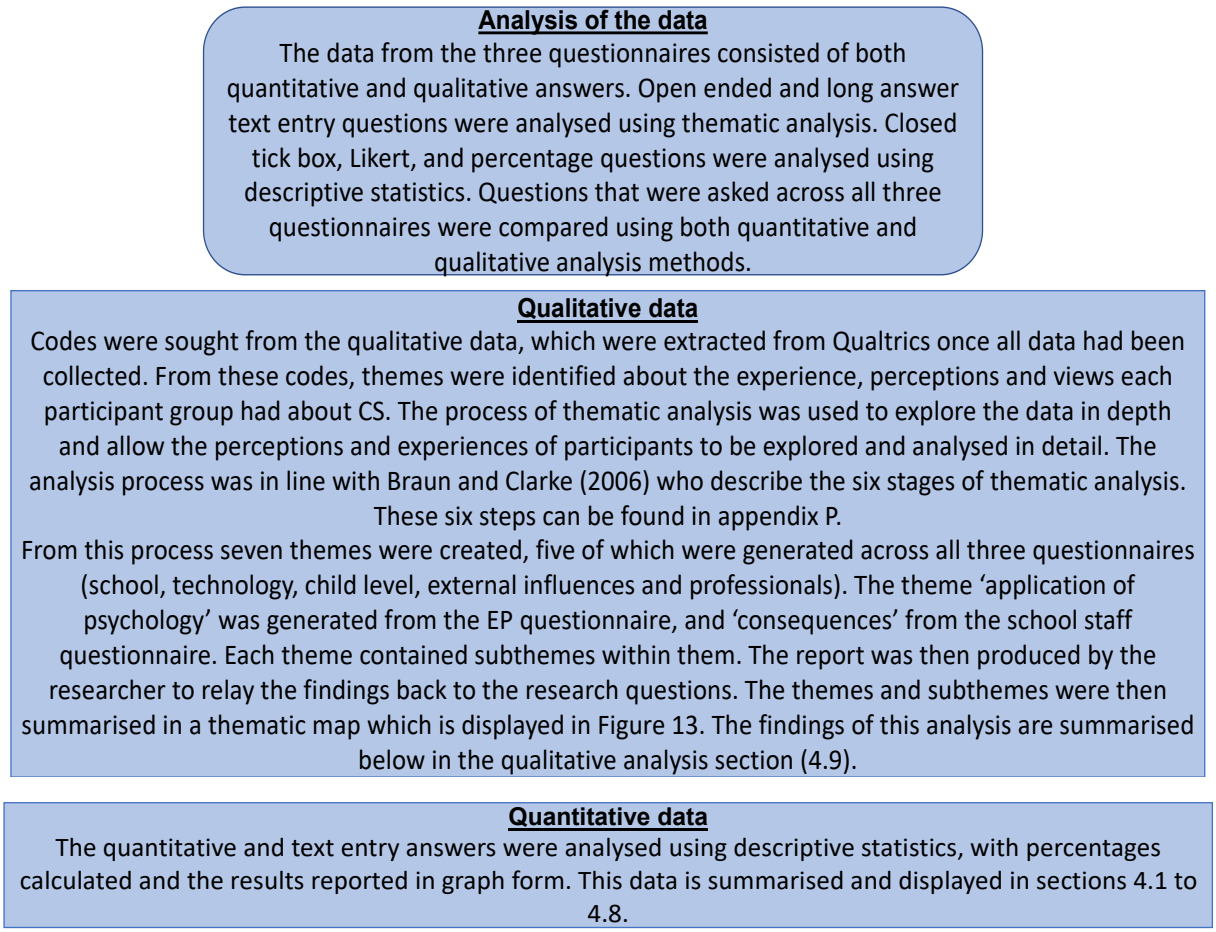


Figure 4. Analysis of the data



4. Results

4.1 Educational Psychologist descriptive statistics

Table 3. EP demographic and contextual information

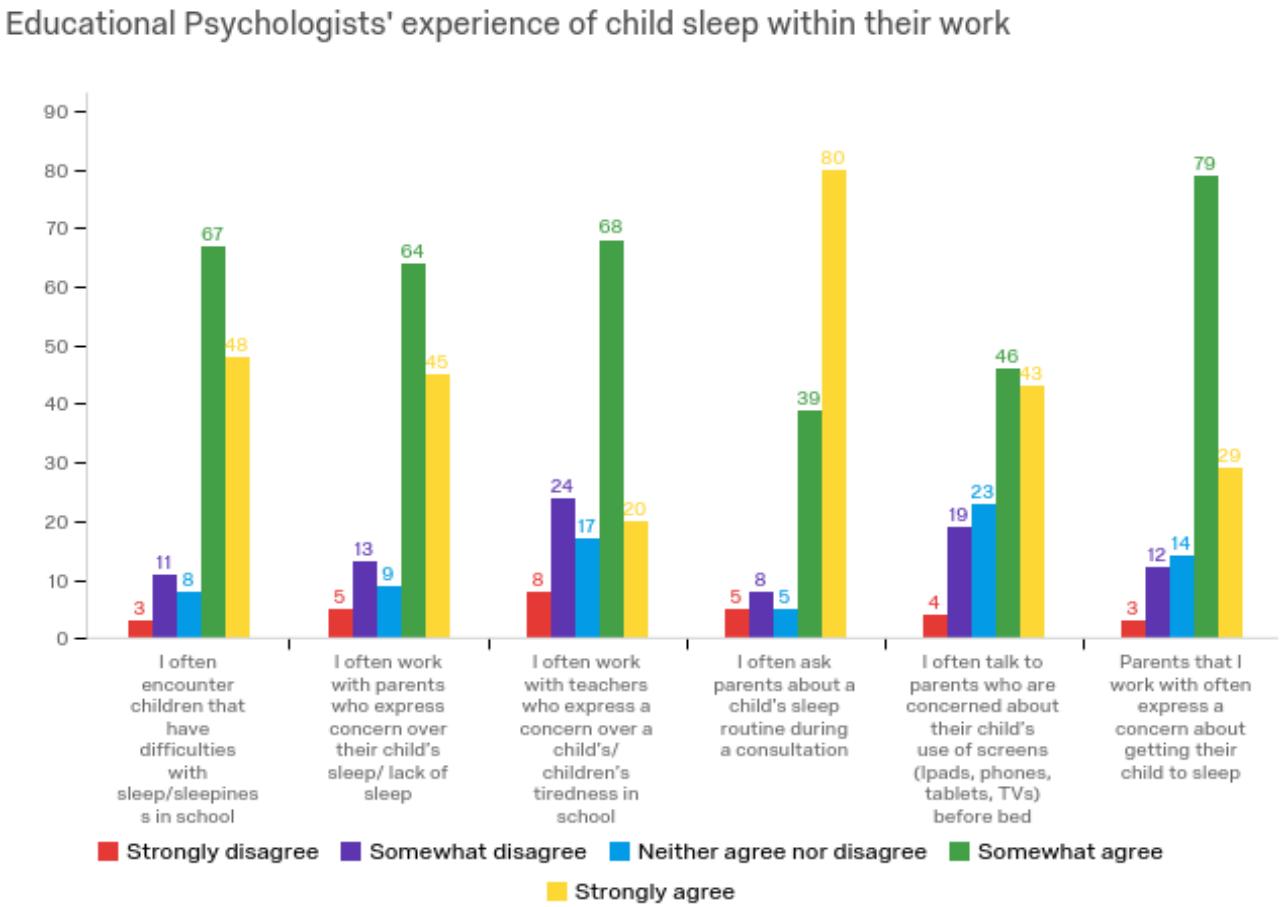
Number of participants	A total of 142 EPs responded to the online questionnaire however, all participants did not complete each question, including one participant not reporting her/his gender. When considering the number of EP responses in previous studies (Bourke, 2015; Callicott & Leadbetter, 2013; Hart, 2010), this study generated a large sample.
Gender distribution	In regards to the gender distribution of participants, 125 females (88.7%) and 16 males (11.3%) took part in this study. The gender imbalance within this sample is similar to previous studies (Woods & Farrell, 2006) and is similar to the current proportion of EPs practicing within the UK (Truong & Ellam, 2014).
Geographical data	Participants completed the questionnaire from all localities within the UK with the highest number of responses taking place in the

	South East of England (24, 17.5%). It is important to note that 79.5% of the sample worked within England, skewing the results towards a response from English working EPs. However recently published data on numbers of EPs working in Scotland and England show a similar distribution of EPs to that of the results in this study (Truong & Ellam, 2014; Thompson, 2017).
Level of EP training and professional roles	The highest level of training completed by participants was a doctorate with 78 (54.9%) obtaining this qualification, 29 (20.4%) completing the masters, 34 (23.9%) currently undertaking the doctorate qualification, and 1 (0.7%) participant reporting other. Professional roles also varied with the highest number of participants working as main grade EPs (72, 49.3%).
Years qualified as an EP	The number of years qualified as an EP ranged from not yet qualified to over 15 years of experience, with the highest percentage representing those still in training (38, 27.1%).

All demographic data for EPs can be found in Appendix S.

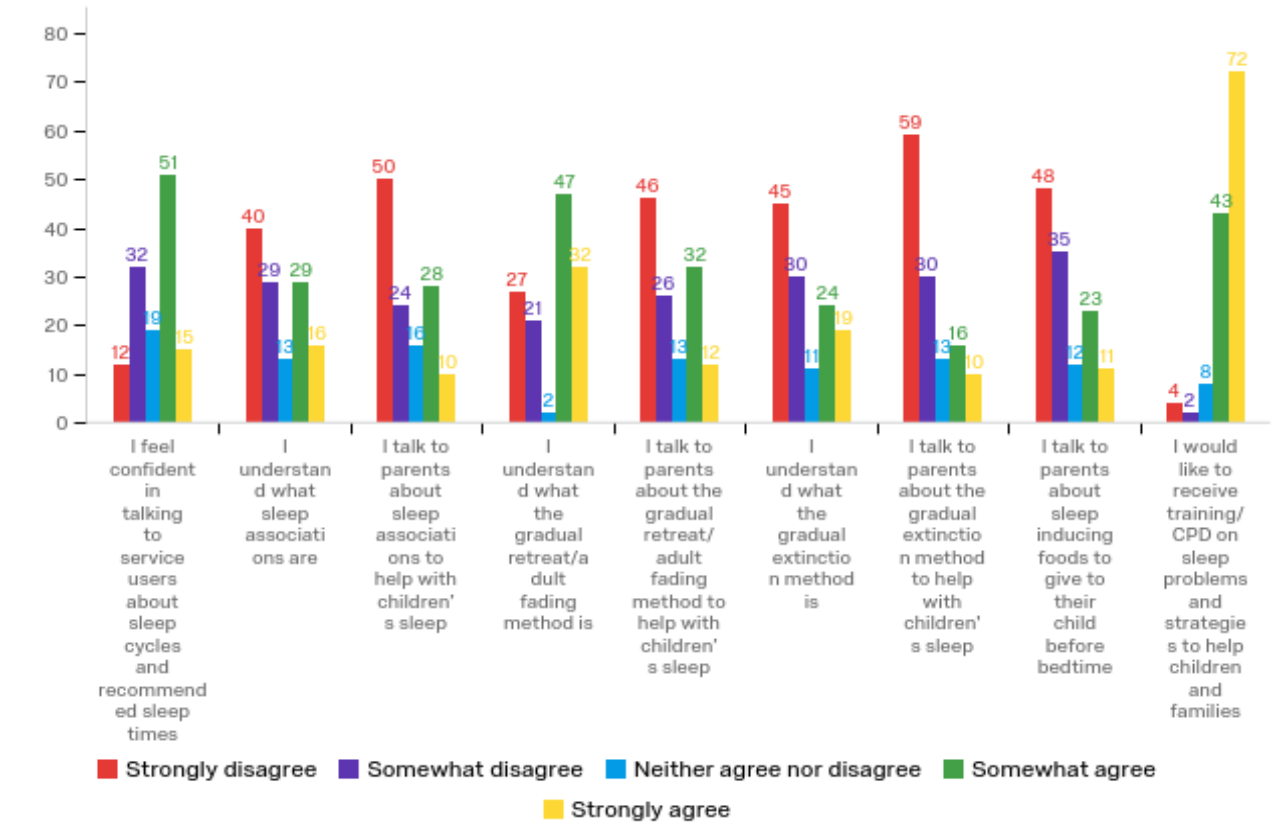
4.2 Educational Psychologist quantitative tables

Figure 5. EP's experience of CS



As displayed in Figure 5, the majority of EPs (83.9%) somewhat/ strongly agreed that they often encounter children that have difficulties with sleep/ sleepiness in school. It was also stated that EPs regularly work with parents who express a concern about getting their child to sleep, with over three quarters of participants (78.9%) selecting somewhat/ strongly agree to this statement. The data suggests that over half of the EP participants frequently ask about a child's sleep routine within a consultation with 58.4% selecting strongly agree.

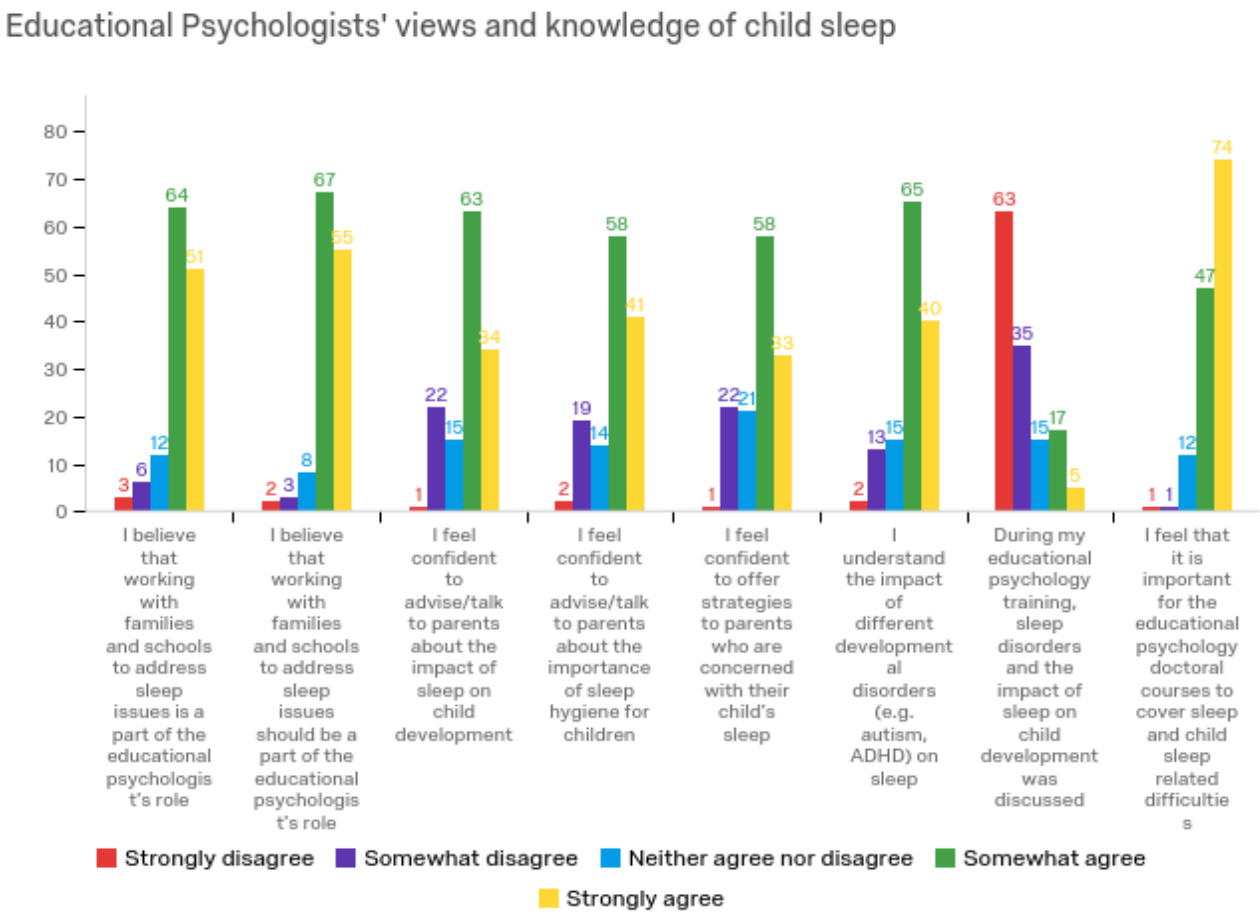
Figure 6. EPs' knowledge and application of CS



As reported in Figure 6 the understanding of the gradual retreat/ adult fading method was prevalent within 61.2% of the sample, however 55.9% strongly/ somewhat disagreed that they talk to parents about this method, suggesting that this information may not be shared with parents. Over half of the sample (54.3%) disagreed to understanding what sleep associations were, and in line with this 57.8% somewhat/ strongly disagreed that they talk to parents about sleep associations.

Over three quarters of the sample (89.1%) somewhat/ strongly agreed that they would like to receive training/ continual professional development (CPD) on sleep problems and strategies. Confidence in talking about sleep cycles and recommended sleep times varied across participants with 34.1% strongly/ somewhat disagreeing and 51.1% strongly/ somewhat agreeing, suggesting varying knowledge across the sample.

Figure 7. EPs' views and knowledge of CS



When questioned about the EP role and training received, as displayed in Figure 7, 46.7% strongly disagreed and 25.9% somewhat disagreed that CS was covered within their EP training, with only 3.7% strongly agreeing that their training covered this area. Accordingly 89.6% of partiticpants somewhat/ strongly agreed that doctoral courses should cover sleep and CS related difficulties. In relation to EP views on their profession and it's incorporation of sleep it was found that 84.6% somewhat/ strongly agreed that working with families and school to address sleep issues 'is' part of the EP role. Similarly, 90.3% felt that it 'should' be part of the EP role.

Figure 8. EPs' experience of CS in EPSs

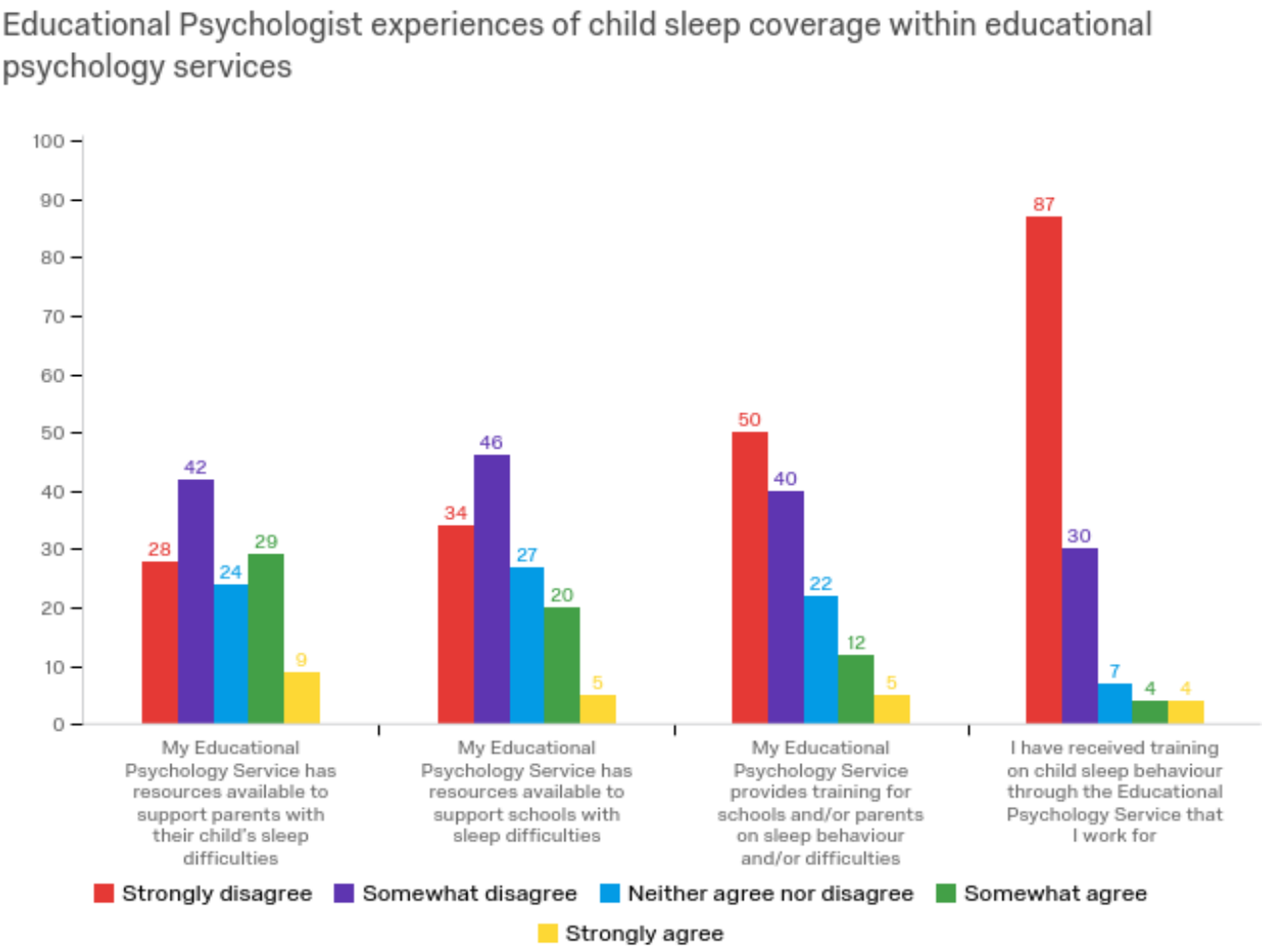


Figure 8 displays participant responses in relation to the EP services they work in. 88.6% of participants strongly/ somewhat disagreed that they had received training on CS beaviour from their EPS. A similar trend was reported for EPSs providing training for schools and /or parents with 69.8% somewhat/ strongly disagreeing that their EPS provides such training. More EPSs were reported to have resources availible to support parents (28.8% somewhat/ strongly agreed) compared to resources availible for schools (19% somewhat/ strongly agreed), however the majority of participants disagreed that their services provided such support.

4.3 School staff descriptive statistics

Table 4. School staff demographic and contextual information

Number of participants	A total of 113 school staff participants responded to the online questionnaire however, not all participants completed each question, including three participants not reporting their gender.

Gender distribution	100 females (90.9%) and 10 males (9.1%) took part in this study. The gender imbalance within this sample is similar to previous research (Maksimovic & Vuletic, 2017) and is similar to the current proportion of teachers working in primary schools within the UK (Department for Education, 2018).
Geographical data	Participants completed the questionnaire from all localities within the UK, with the highest number of responses taking place in the South East of England (30, 27%). It is important to note that 82.9% of the sample worked in schools within England, skewing the results towards a response from English schools.
Job role	The roles worked within schools varied with both teaching and non-teaching staff completing the questionnaire, however over three-quarters of the sample were teachers (84, 75.7%).
Years working in schools	The number of years working in schools ranged from 0 to over 12 years, with the highest proportion of participants working in schools for more than 12 years (45, 39.8%).

All demographic data for school staff can be found in Appendix T.

4.4 School staff quantitative tables

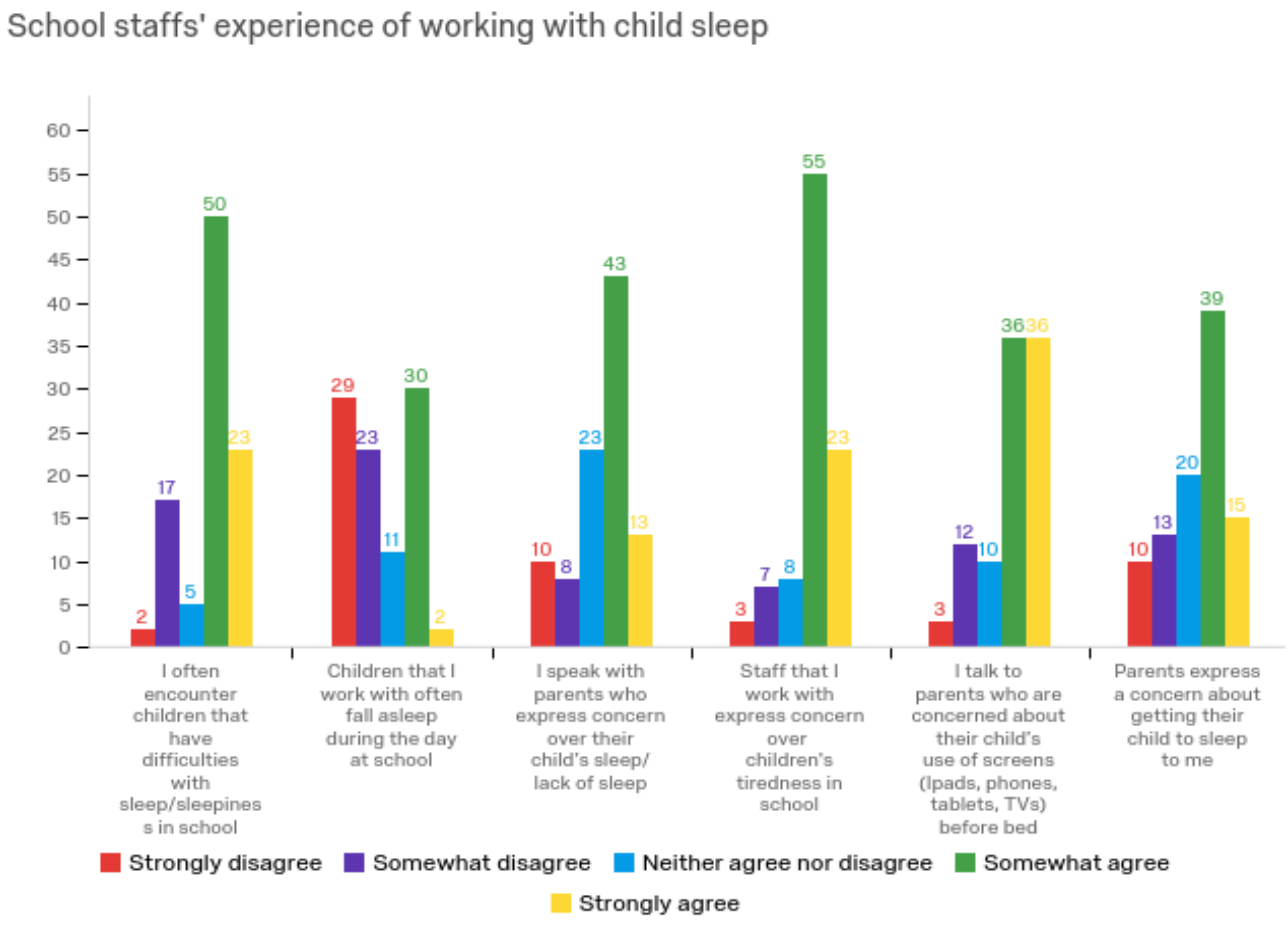
Table 5. School staff questions regarding experience of CS within schools

	Yes	No	Not sure
Have you ever contacted parents due to a concern over a child's tiredness level in school?	64%	36%	
Do you have experience of parents contacting yourself or the school due to concerns over their child's sleep at home?	44%	53%	3%
Does your school provide any support or advice for parents about child sleep difficulties?	36%	40%	24%
Does your school signpost parents to a service that helps with child sleep difficulties?	30%	36%	34%
Has your school received any advice on child sleep difficulties from any outside agencies?	10%	55%	35%
Has your school received any advice on child sleep difficulties from an educational psychologist?	12%	49%	39%
Would you be interested in receiving training on ways your school could support parents and children with sleep difficulties?	70%	3%	27%

	Yes	No	Sometimes
In your experience do you often notice children who appear tired in school?	77%	2%	21%

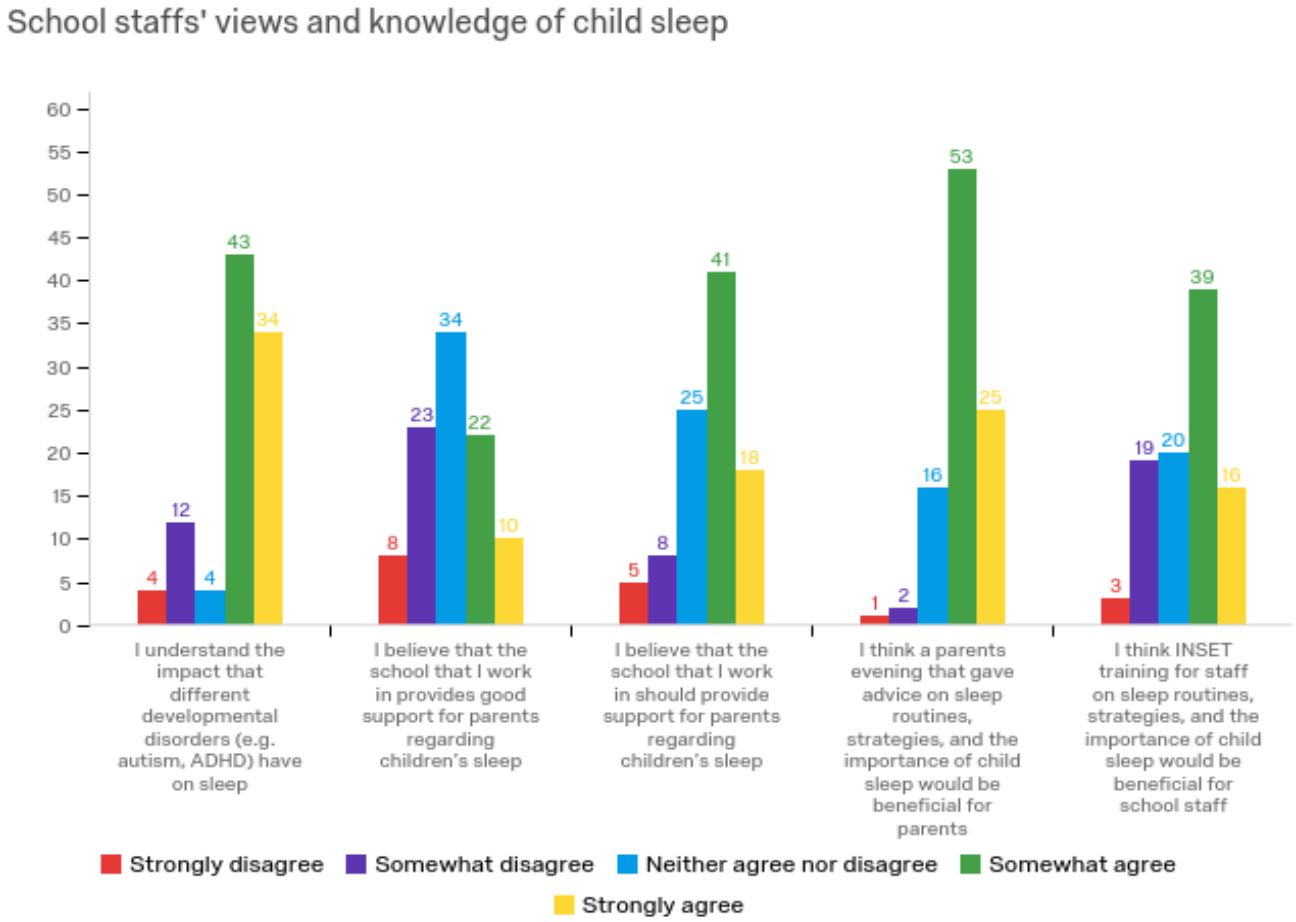
As noted in Table 5 the majority of participants (70%) were interested in receiving training on ways their school could support parents and children with SDs. A number of schools reported to provide advice or support for parents (36%) as well as signposting parents to other services (30%). 88% of the participants reported that they were either unsure, or had not received any advice on CS from an EP. However, it should be noted that the data did not obtain how many of the participants had worked with an EP. 64% of participants noted that they had contacted parents in regards to a child's tiredness, and 44% had been contacted by a parent due to similar concerns. The highest response from school staff on the percentage of children who appear tired, or complain of being tired in an average week, was 21-30% of children that participants work with. The responses ranged from 0-10% up to 81-90% of all pupils participants work with (see Appendix U).

Figure 9. School staff's experience of working with CS



A common theme amongst the data was adults expressing concern over children's tiredness, as displayed in Figure 9. 81.3% of the sample somewhat/ strongly agreed that staff that they work with express concern over children's tiredness in school, and 55.7% reported parents expressing a concern about getting their child to sleep. Accordingly talking to parents who are concerned with their child's use of screens before bed was highly reported with 74.2% either somewhat or strongly ageeing to this statement.

Figure 10. School staffs' views and knowledge of CS



As displayed in Figure 10 a mixed response was reported in relation to whether participants believed that their school provides good support for parents regarding CS. 35% neither agreed or disagreed, 32% strongly/ somewhat disagreed, and 33% strongly/ somewhat agreed, suggesting a variation in sleep related school support. Interestingly, despite a variation in whether schools provide support, 60.9% of participants somewhat/ strongly agreed that their school should provide sleep support for parents.

In accordance with this finding, over three quarters of participants (80.4%) somewhat/ strongly agreed that a parents' evening addressing sleep would be beneficial for parents. However fewer participants felt that an INSET training session for staff would be as useful (56.7% somewhat/ strongly agreed). The majority of the sample somewhat/ strongly agreed to having an understanding of the impact of developmental disorders on sleep.

4.5 Parent descriptive statistics

Table 6. Parent demographic and contextual information

Number of participants	A total of 142 parents responded to the online questionnaire however, all participants did not complete each question.
Gender distribution	118 females (83.7%) and 23 males (16.3%) took part in this study, and one participant did not report her/his gender. The gender imbalance within this sample is similar to previous studies (Denne, Hastings, & Hughes, 2017; Johnson & McMahon, 2008).
Geographical data	Participants who completed the questionnaire lived in England, Wales, and Scotland with the highest number of responses taking place in the South East of England (54, 38.6%). It is important to note that 81.4% of the sample lived in England, skewing the results towards a response from English parents.
Relationship to child	The relationship that participants had to the child/ children within their home consisted of 115 biological mothers (81.6%), 22 biological fathers (18.6%), 1 adoptive mother (0.7%), and 3 who selected 'other' (2.1%).
Age distribution of participants	Participants varied in age from the 18-25 age range, up to 50 years and over. The most highly represented age range was 31-35 years with 45 parents (31.7%) falling within this range.
Educational attainment	Level of education achieved varied from no qualifications to gaining a PhD/doctorate. The sample represents a range of educational levels, with 53.9% of the sample having a University degree or higher.

All demographic data for parents can be found in Appendix U.

4.6 Parent quantitative tables

The sample does not represent the views and experiences of parents who have a child with a Statement or EHCP. Only 3.7% of parents reported their children having a

Statement/ EHCP, and 2.2% were currently awaiting an answer to an application (Appendix W). 75.3% of parents reported that their child did not have a diagnosed disorder or disability, again highlighting that the sample is not representative of parents who have a child with a diagnosed disorder. Of those 19 parents who stated a diagnosed disorder or disability, the most commonly reported diagnosis was Autistic Spectrum Disorder (10.4%) (See Appendix X).

Due to only a small sample of parents reporting that their child had a Statement/ EHCP, no trends of sleep difficulties were identified in the data set however, each sleep difficulty was selected by parents. The most commonly reported sleep difficulty stated by parents whose children did not have a Statement/ EHCP was 'trouble falling asleep at night' (20.1%), followed by 'waking at night' (16.1%). The sample also highlighted that all nine sleep difficulties were prevalent within the sample (Appendix Z).

10% of the sample reported that they had sought help in regards to their child's sleep, whilst 5% had considered it. In a breakdown of this for 10% of the sample the most commonly sought help was from a doctor/ paediatrician (53.8%). A breakdown of who parents sought support from can be found in Appendix A.A.

Only 2% of parents reported that their child was medicated for sleep, with a further 2% of children previously being medicated, therefore the sample is not representative of parental views and experiences that have children who are medicated for sleep (Appendix B.B). Only 2% of parents reported that their child had been seen by an EP previously.

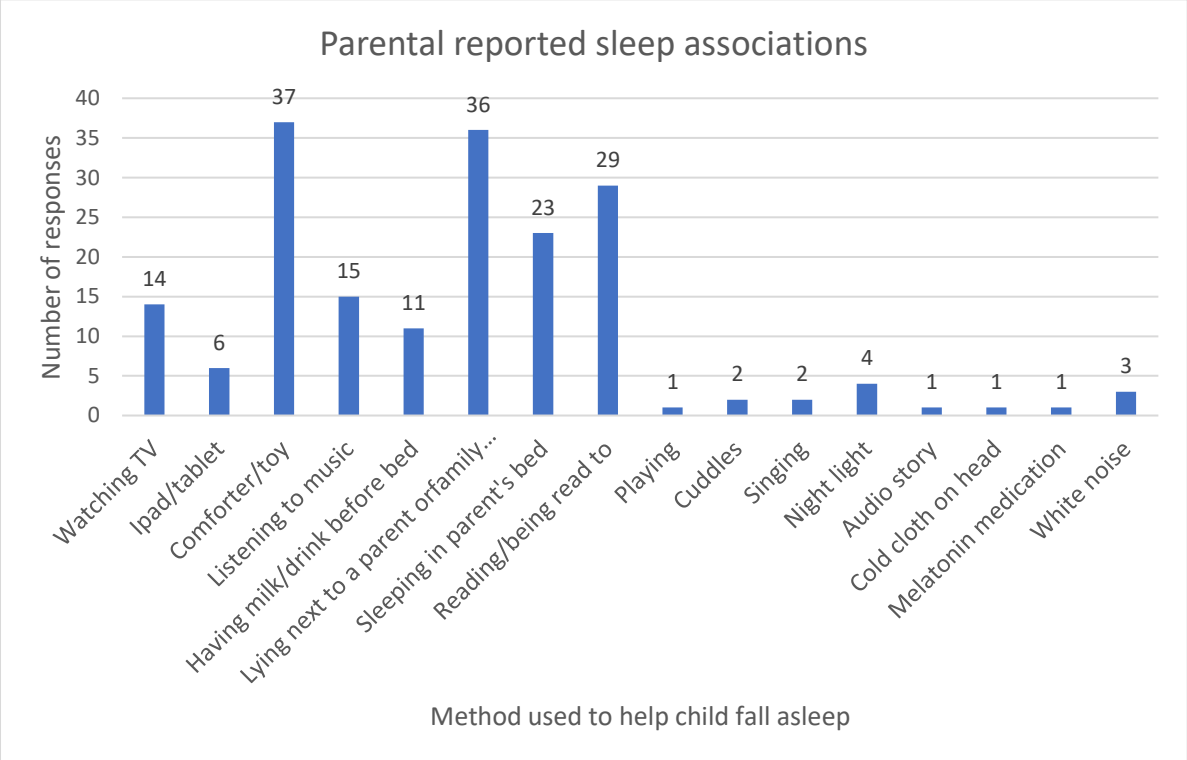
Figure 11. Parents' responses regarding sleep training and school contact

	Yes	No	Not sure
Does your child's school provide any advice on sleep routines and ways to help your child's sleep?	5%	71%	24%
If 'no' would you be interested in receiving advice on sleep routines from your child's school?	39%	38%	23%
Would you attend a sleep workshop on child sleep if it was made available to you?	42%	30%	28%

Has your child's school ever contacted you with concerns about your child being tired or falling asleep when at school?	4%	96%	

As reported in Figure 11, when questioned about school involvement with sleep, only 5% of parents stated that their child's school provides advice on sleep routines and ways to help with CS. 96% of the sample reported that their child's school had not contacted them with concerns about their child's tiredness/ falling asleep in school. However it is important to consider that due to a low number of parents seeking support, children taking medication, and schools contacting parents, the sample may not be representative of parents with CSDs and should be considered with caution. When asked which methods help their child to fall asleep, parents reported 16 catergories.

Figure 12. Parental reported CS associations



As displayed in Figure 12, the most frequently reported sleep association to help children sleep was a comforter/ toy (19.9%), followed by lying next to a parent or family member in bed (19.4%).

Figure 13. Parent reported average CS duration

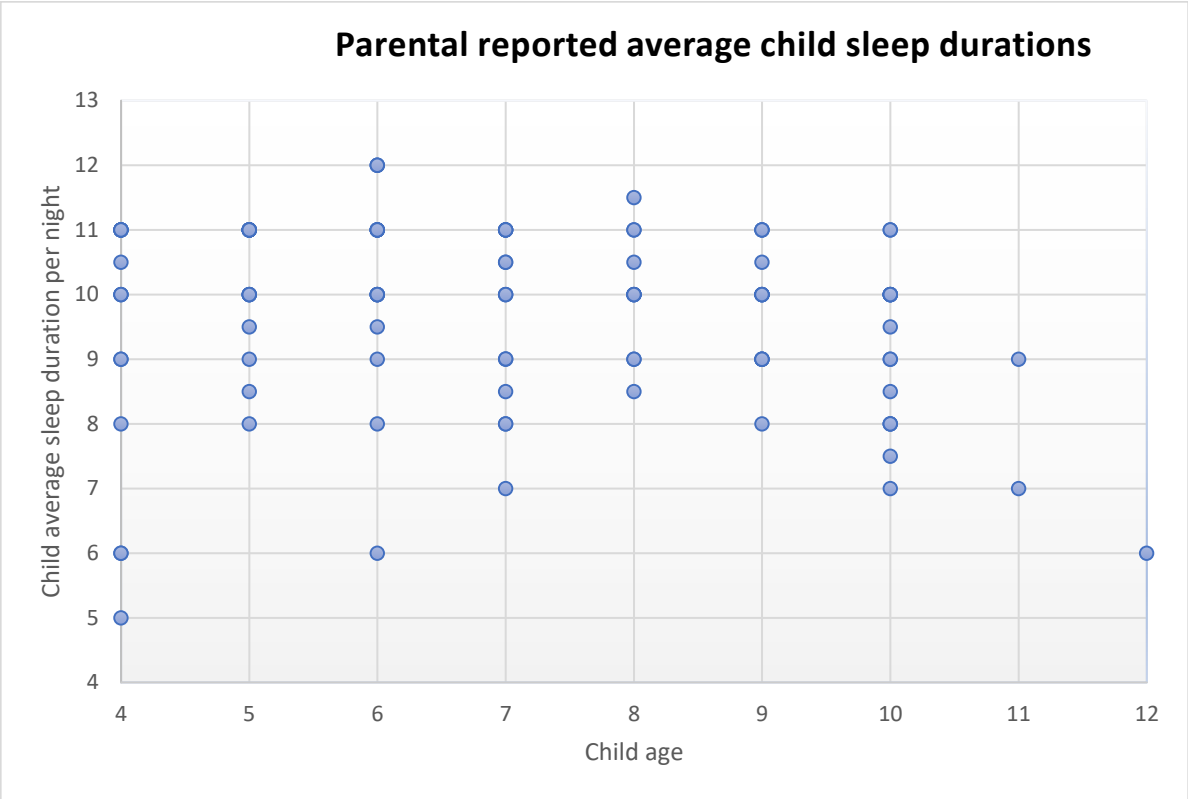


Table 7. Descriptive statistical breakdown of average CS duration data

Child age	Range of sleep duration	Mean reported sleep duration	NHS age recommended sleep duration	Deviation from the mean	Number of responses
4	5-11	9.39	11:30	-1.51	16
5	8-11	9.45	11	-1.15	19
6	6-12	9.44	10:45	-1.01	19
7	7-11	9.43	10:30	-0.47	16
8	8.5-11.5	9.45	10:15	-0.30	12
9	8-11	9.44	10	-0.16	15
10	7-11	9.45	9:45	0.00	18
11	7-9	8	9:30	-1.30	2
12	6-6	6	9:15	-3.15	1

Figure 13 displays the average nightly sleep duration estimates of children completed by their parents. As seen in Table 7, the range of sleep durations are greatest in the 4 and 6 year old children, with both generating a range of 6 hours from the lowest and highest sleep duration. When comparing the mean sleep duration for each age range to the NHS sleep recommendation data; 4, 5, 6, 11, and 12 year olds within the sample were all reported to sleep for at least one hour less than recommended by the NHS. All mean sleep estimates for age ranges were lower than the NHS recommendation, apart from the 10 year old subset whose mean was equal to the NHS sleep duration recommendation of 9 hours 45 minutes.

4.7 Comparison tables for EPs, parents, and school staff

Table 8. Participants' views of who parents seek support from and who is best suited to support CSDs.

	Educational psychologists		**School staff**		**Parents**	
	Experience	*Best suited*	*Experience*	*Best suited*	*Experience*	*Best suited*
Doctor	24.5%	18.6%	21.3%	25.9%	4.9%	23.9%
Health Visitor	15.8%	20.3%	8.9%	22.6%	16.3%	26.6%
School	3.7%	5.4%	12.7%	7.5%	4.1%	5.5%
Clinical Psychologist	3.5%	9.6%	0.3%	5.9%	0.8%	6.4%
CAMHS	9.3%	10.3%	3.6%	11.3%	1.6%	4.6%
Educational Psychologist	3.9%	18.6%	2.1%	8.8%	0.8%	2.8%
Internet page/group	11.7%	4.4%	13.6%	2.5%	9.8%	5.5%
Friends	11.9%	5.1%	19.5%	6.7%	29.3%	5.5%
Family	14%	5.1%	17.8%	8.4%	26.8%	10.1%
Other	1.6%	2.5%	0.3%	0.4%	5.7%	9.2%

Table 8 displays the three participants groups' responses to who they report parents seek support from for CS, and who they feel is best suited to support. Both EPs and school staff selected doctors as the source of support most commonly selected by parents in their experience. However, only 4.9% of parents selected doctors. Interestingly, when asked who they thought was best suited to support CS, 23.9% of parents chose doctors. However, this may highlight flaws in the unrepresentative sample as only 10% of the parent participants (Appendix Y) had sought help for their child's sleep. HVs were reported to be best suited by parents (26.6%) and EPs (20.3%). All three participant groups reported parents to seek support from friends and family in their experience, however it was clear that neither group felt that this was beneficial due to a large reduction in all three groups' percentages when asked who is best suited. The data suggests that EPs do not currently feel that parents are seeking support from their profession, with only 3.9% reporting that parents are seeking their support. However, the data suggests that some EPs feel that their role can support CS, as 18.6% selected EPs as best suited to support CS. The two most frequently selected professionals across all groups were doctors and HVs, suggesting a shared view that health professionals are best suited to support CS.

Figure 14. Sleep duration estimates for child ages across participant groups

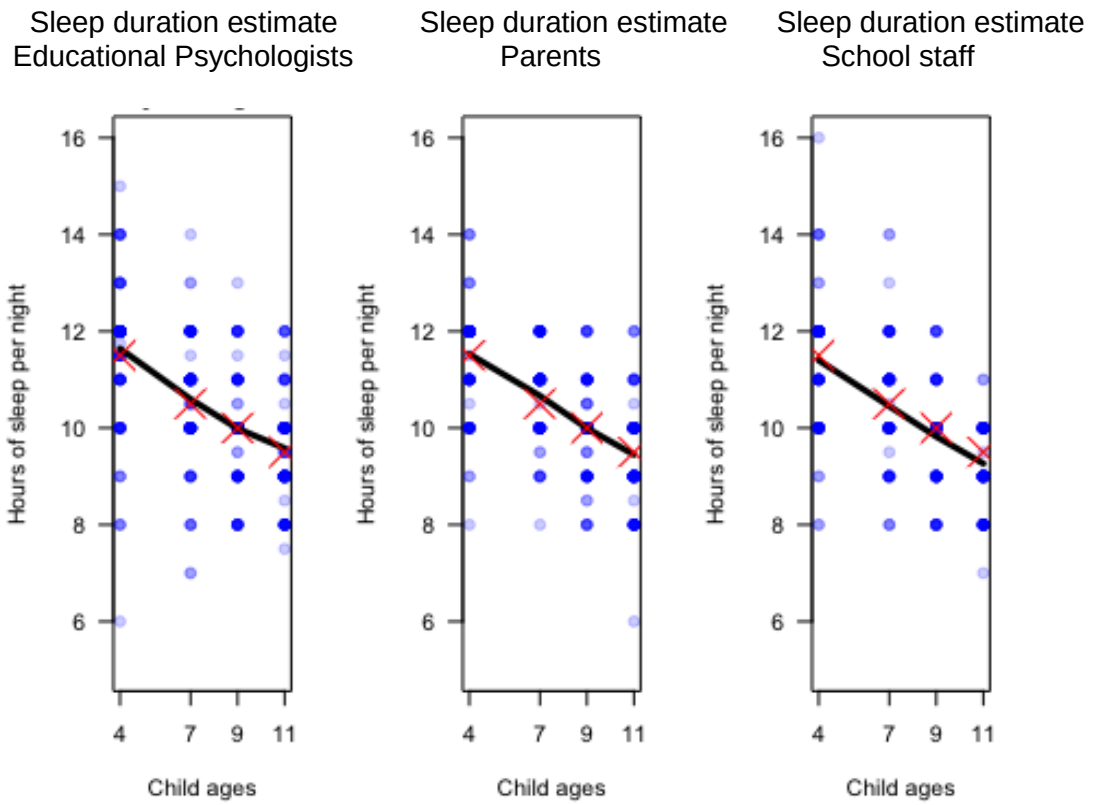


Table 9. Descriptive statistical breakdown of EP sleep duration estimations

Educational Psychologist sleep duration estimations					
Child age	**Range of sleep duration estimation**	**Mean sleep duration estimation**	**NHS age recommended sleep duration**	**Percentage of participants over/underestimating sleep duration by 1.5 hours or more**	**Percentage of participants over/underestimating sleep duration by 2.5 hours or more**
4	6-15	11:23	11:30	26.9%	11.8%
7	7-14	10:27	10:30	32.8%	7.6%
9	8-12	9:49	10	17.6%	0.8%
11	7.5-12	9:16	9:30	25.2%	4.2%

Table 10. Descriptive statistical breakdown of school staff sleep duration estimations

School staff sleep duration estimations					
Child age	**Range of sleep duration estimation**	**Mean sleep duration estimation**	**NHS age recommended sleep duration**	**Percentage of participants over/underestimating sleep duration by 1.5 hours or more**	**Percentage of participants over/underestimating sleep duration by 2.5 hours or more**
4	8-16	11:38	11:30	33.7%	9.5%
7	8-14	10:36	10:30	30.5%	6.3%
9	8-12	9:59	10	15.6%	0%
11	7-11	9:34	9:30	24%	2.1%

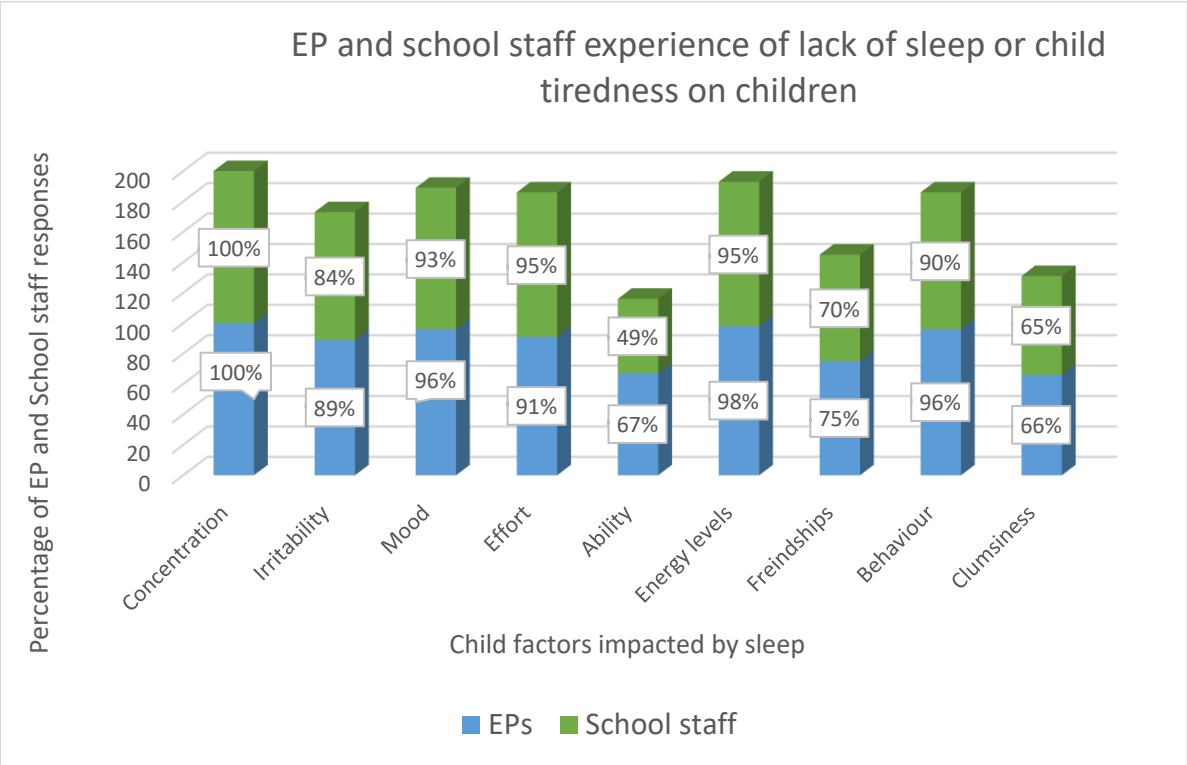
Table 11. Descriptive statistical breakdown of parent sleep duration estimations

Parent sleep duration estimations					
Child age	**Range of sleep duration estimation**	**Mean sleep duration estimation**	**NHS age recommended sleep duration**	**Percentage of participants over/underestimating sleep duration by 1.5 hours or more**	**Percentage of participants over/underestimating sleep duration by 2.5 hours or more**
4	8-14	11:31	11:30	21.8%	5.6%
7	8-12	10:40	10:30	26.4%	1%
9	8-12	10	10	12.3%	0%
11	6-12	9:27	9:30	26.7%	3.9%

Figure 14 and tables 9, 10, and 11 display the sleep duration estimates for each participant group, as well as highlighting the mean, range, NHS recommendation, and percentage of participants under/ over estimating sleep durations by both 1.5 and 2.5 hours. The mean sleep duration estimation was consistently close to the NHS recommendation across all age ranges in each participant group. However, the range of estimations varied considerably, with the largest range calculated at 6-15 hours for the EP estimation of 4 year olds. Over a quarter of EPs over/ under estimated sleep durations by 1.5 hours or more in three out of four age groups, whilst a quarter of both parents and school staff under/ overestimated sleep durations by 1.5 hours or more in two out of four age ranges. The most incorrectly estimated age group by 2.5 hours or more was 4 year olds, which was consistent across all three participant groups. Of the participants, EPs most frequently under/ overestimated by 2.5 hours across the four age groups, whereas school staff most frequently under/ overestimated by 1.5 hours across all age groups.

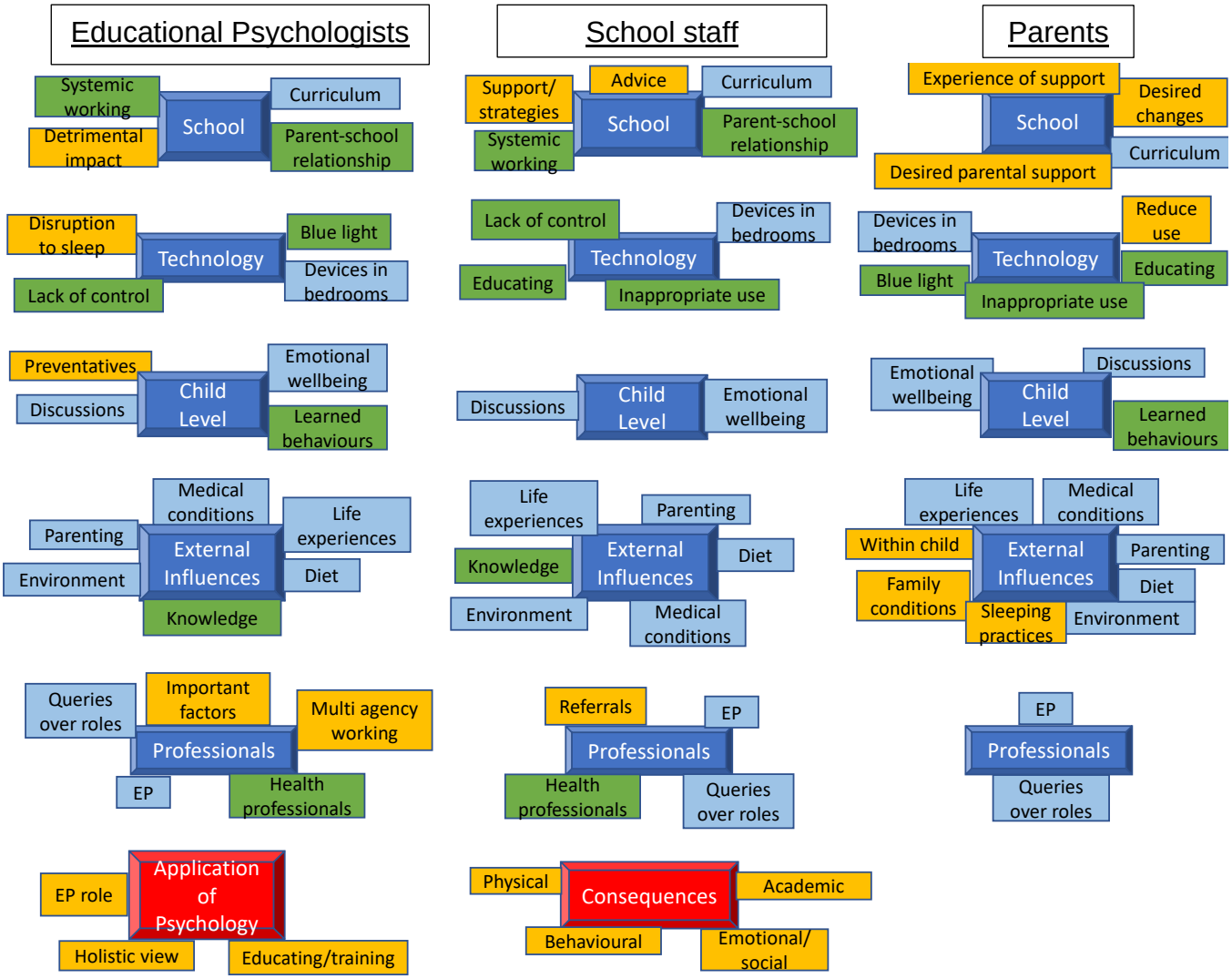
4.8 Comparison table of EPs and school staff

Figure 15. EP and school staff experience of lack of sleep on children



As displayed in Figure 15, all EP and school staff participants reported concentration to be impacted by sleep in children. The child factor reported to be the least impacted by sleep was clumsiness by EPs, and ability by school staff.

Figure 16. Thematic map



Key:

Theme identified in one group questioned

Theme identified across the three groups questioned (EPs, school staff and parents

Subtheme identified across the three groups questioned

Subtheme identified across the two groups questioned

Subtheme identified across one group questioned

Figure 17: Tables to demonstrate the themes and subthemes that emerged through thematic analysis

Table 12: School

Theme	Sub-theme	Participant	Illustrative quote
School	Curriculum	EPs	'Educate parents via the children about what a better sleep routine looks like; invite parents into school to share the children's learning' 'Sessions (maybe assemblies or as part of PSHE curriculum) with children raising awareness of benefits of good sleep / consequences of poor sleep, and what they can do' 'Encourage activity based play preferably outside / increase physical activity'
School	Curriculum	School staff	'Educate children about the importance of going to bed at a proper time (e.g. we already educate about care of teeth, healthy eating & exercise. Sleep should be included)' 'Workshops on sleep for pupils, ways to relax, importance of sleep and not using electrical devices in evening' 'Introduce 'switch off' time before they home where children can leave any worries about school, at School. 'We train students in yoga and mindfulness techniques that can help them settle to sleep'
School	Curriculum	Parents	'Teach children relaxation techniques such as meditation and mindfulness' 'Incorporating healthy sleep awareness into curriculum' 'More daily physical activity (e.g. Golden Mile). Talk to children about sleep routines and appropriate amounts of sleep/bedtimes for their age in PSHE lessons' 'By highlighting the importance of sleep and the many effects it has on child development. As healthy eating is promoted, healthy sleep routines could be - discussions, role play, charts, experiments at home'
School	Parent-school relationship	EPs	'Parent workshops can help to inform parents of the importance of sleep and the impact on their child's learning and well being' 'Providing booklets to parents; signposting parents; providing parents with advice about sleep routine'

			‘Supportive environments for parents generally to come and discuss any type of worry about their child so they can work in collaboration to think through some solutions. ‘Work with parents to talk about the hours of sleep per night that are recommended, and give examples of sleep routines. Work with parents to create personalised sleep timetables (following template of visual timetables in schools) for children who struggle to sleep.’
School	Parent-school relationship	School staff	‘If a child is eligible for TAC meetings then this issue can be raised during the meeting and the professionals around the table can make suggestions to the parents on how to help their child at bedtimes’ ‘Maybe during a parents evening as this is where we talk about their progression and part of it is their ability learn’ ‘I have had a home school book for some children where parents report if the followed instructions at bedtime. I have also had discussions about bedtime routines with parents and worked with them to set rules about this’
School	Systemic working	EPs	Whole class/school work. ‘Teachers and school staff to have greater awareness of sleep routines and their impact on c/yp’ ‘Talk to parents. Make sure all teachers know about it and impact of poor sleep hygiene’ ‘Training and consultation (to school staff, parents, young people, assemblies, whole classes, group work etc) on a whole school/whole class/group or individual level depending on needs in order to build capacity’
School	Systemic working	School staff	‘Offer support to parents and training for staff so a clear message of support is given and embedded through school that sleep is important for children’s progress’ ‘Provide training for teachers. Liaise with appropriate professionals more’ ‘Discuss strategies as teachers’
School	Detrimental impact	EPs	‘Breaking anxiety down for individual children for whom their anxiety impacts upon sleep quality and quantity could be due to: exam stress, bullying / friendship issues including online bullying’ ‘Social and academic pressures’

School	Advice	School staff	'We give general advice about setting routines and sticking to them and where necessary get professionals from nursing team' 'We did a home visit and recommended a better routine before bed, not using electronics near bed time. As a school we offer 'family breakfast' once a month and they all have different themes - one was based on sleep'
School	Support/ strategies	School staff	'Parents have asked me to support reward systems they use at home if child goes to bed on time' 'It usually for me as the teacher to encourage them to sleep in their own bed etc and rewarding them with a sticker. This a home School agreement that myself and the parent have made' 'We also are linked with a group of schools and offer workshops to parents about sleep. However, they are poorly attended' 'In the lead-up to SATS we host information evenings where we talk about how important it is that children get a good night's sleep' 'Providing workshops/ talking between parents. It would have to be in a non-critical environment without parents judging each other'
School	Experience of support	Parents	'Sleep week concentrates on importance of sleep etc - activities for kids and parents' 'Routine letters to all' 'Parent/carers coffee morning with different topics discussed
School	Desired changes	Parents	'Less stress on children such as tests, homework, less pressure for good results' 'More physical activity, pastoral care for anxious kids, less pressure for primary school kids' '[EPs] Supporting parents and schools to educate and suggest solutions. Impact on learning, the overall behaviour of the child'
School	Desired parental support	Parents	'Information on how many hours sleep your child should get would be helpful and hints to help improve it' 'Perhaps education for parents regarding the issues around screen usage and a consistent early bedtime, amount of sleep necessary for each age group' 'If there was a community of people being identified as having children who are not sleeping maybe creating a group meeting to

			support these parents and share ideas and suggestions' 'Organised chat by a professional or HV'

School theme summary:

There was a consensus across all three participant groups that sleep could be integrated into the school curriculum. Each group commented on educating children about the importance of sleep and addressing the impact that sleep can have on health and wellbeing. Both EPs and school staff commented on how the parent-school relationship could allow for parents to gain support and information on sleep. However, parents did not refer to this relationship explicitly, suggesting that parents had less of a focus on working with schools to aid their child's sleep. The importance of whole school awareness and/ or training on sleep was identified by both EPs and school staff to help address sleep within the school. The area of support and advice was commented on by parents and school staff, displaying ways schools and parents have been supported, ways advice has been delivered, and examples of support that parents desire.

Table 13: Technology

Theme	Sub-theme	Participant	Illustrative quote
Technology	Devices in bedrooms	EPs	'Too much stimulation (screen time) in the room or before bedtime' 'Poor sleep hygiene particularly gadgets used to pacify' 'Place restrictions on WIFI usage remove screens and distractions from the bedroom'
Technology	Devices in bedrooms	School staff	'Having electronic devices in their room and using them without parental awareness' 'Parents just leave them to do what they like in their rooms, some kids have TV/laptop/tablet/game console and can stay on it all night' 'Child fell asleep in class, after several previous occasions where they complained of being extremely tired due to staying up playing computer/iPad games'
Technology	Devices in bedrooms	Parents	'Using screens, screen available in the bedroom' 'No screens (including TV) at least 1 hour before getting reading for bed, no devices in the bedroom'
Technology	Blue light	EPs	'Technology - blue light, interest and attraction Parent boundaries around tech '

			‘Other contextual issues that are facing us currently are the concept of screen time and the impact of blue light technology upon circadian rhythms which can be worsened by a lack of parental management.
Technology	Blue light	Parents	‘Blue lights’ ‘Blue screens’
Technology	Lack of control	EPs	‘I do think that electronic devices have a big role to play. Many parents tell me they do not dare take phones/ x-boxes etc away from children at bedtime’ ‘The main strategy would be to introduce and consistently implement routines: the routine of (and modelling of this by parents too) turning screens off at least 1 hour before bed ‘ ‘Think about limiting access to electronic devices’ ‘Over use of technology - phones not monitored so disturbed by notifications through the night’
Technology	Lack of control	School staff	‘Lack of concentration as the parent said the child was on the Xbox too late and he would find it and play on it if it was hidden’ ‘Sometimes parents hadn’t realised they were still playing computer games at midnight’ ‘Increasingly, parents inability or unwillingness to manage access to electronic devices overnight, at the request of parents, I have occasionally confiscated mobile phones to keep in my safe until parents requested return’ ‘Keep it consistent and not using tv to fall asleep’
Technology	Educating	Parents	‘Inform parents of possible things to try talk about the stimulating effects of screens at bedtime. Provide support for parents who are struggling with the issue in a non-judgemental way’ ‘Educate on less time on tablets etc. Family time is important’
Technology	Educating	School staff	‘Workshops on sleep for pupils, ways to relax, importance of sleep and not using electrical devices in evening’ [EPs] ‘Explain relaxing is not playing computers games as your brain is as active and not snowing down ready to sleep’
Technology	Inappropriate use	School staff	‘Child falling asleep at desk. Disclosed nightmares about 18 films he was watching with mum’s boyfriend’ ‘One was playing computer games late and to top it all the games were age restricted and when they eventually got to bed they were too scared to sleep’

			'From my experience with children in my class, unsupervised use of computers and iPads at night is the main issue'
Technology	Inappropriate use	Parents	'Electronics and exposure to things i.e. media that they are not emotionally equipped to deal with'
Technology	Disruption to sleep	EPs	'Addiction to games and online Communities. Parents affected by same issues and therefore suffering from poor sleep hygiene themselves' 'Over stimulated brain and mind (too much passive input i.e. tv at night, hand held electronic devices in bed, computer games all day and all evening)'
Technology	Reduce use	Parents	'Cut down on screen time, make bedrooms a sanctuary, wind down before bed, enable and support children to be more independent at self-soothing and settling' 'No screen time at least 1 hour before bedtime Calmness for that hour before bed' 'Use less technology in schools. Children are dependent on technology today'

Technology theme summary:

There was an overarching view across the three groups on the detrimental impact of having electrical devices in bedrooms, and the impact of screens in general. EPs discussed the negative impact of using devices to aid sleep. Examples of parents feeling unable to remove devices from children, children accessing inappropriate media, and a lack of monitoring were mentioned as reasons for poor sleep across the three groups. An emphasis on the reduction of screen use both before bed and within schools was suggested by parents. In regard to educating on technology's impact on sleep, school staff commented on the benefit of educating children, and parents requested education for themselves. Technology was described to impact sleep by EPs describing over-stimulation, addiction, and social media as detrimental factors.

Table 14: Child level

Theme	Sub-theme	Participant	Illustrative quote
Child level	Emotional wellbeing	EPs	'Anxieties around general issues - family difficulties, difficulties in school etc. 'One 'main' reason for delayed sleep onset could be anxiety but breaking anxiety down for individual children for whom their anxiety impacts upon sleep quality and quantity could be due to: exam stress,

			bullying / friendship issues including online bullying, domestic abuse, body image concerns' 'Possibly attachment and relational difficulties within the family' 'Building close nurturing relationships with their children'
Child level	Emotional wellbeing	School staff	'Parents concerned that friendship issues were making the child anxious and not sleeping' 'One mother told me her son was getting really stressed over tests and missed lessons and could not sleep as a result' 'The child was suffering night terrors and was unable to sleep properly'
Child level	Emotional wellbeing	Parents	'My child is anxious and seems to find it hard to 'switch off'. It's worse when he's particularly worried about something. He doesn't like being alone and I often wait in his room for him to fall asleep' 'Separation anxiety Our culture obsessed with removing kids from family room at night. It is biologically not normal for children to be apart from their protectors in the night' Developing secure attachments from birth'
Child level	Discussions	EPs	'Trying to talk to their child and enable their child to have control about setting up the routine (within adult limits) so it is calming and a positive experience for them' 'Share the science with the pupil, ask them to check with their peers (how long they sleep, why sleep is important to them), establish routines with the pupil (this may require teaching i.e. when do you feel calm/ what kind of activities calm you or creating a diary- how many hrs sleep v how irritable/ concentration)' 'Teachers could open up a dialogue with children, groups of children or whole classes in relation to sleep routines and exploring what different young people do at night/in the morning, what some people find helpful/ unhelpful.'
Child level	Discussions	School staff	'Time to talk to their children about any worries'
Child level	Discussions	Parents	'Have quality time to discuss any concerns before sleep and read a story and have a cuddle' 'Talk to them about the importance of sleep and create a calm environment for them to feel relaxed enough to fall asleep' 'Talk about the day they have had. Reflection is important'

Child level	Learned behaviours	EPs	'Difficulties resettling once awake' 'Difficulty self-soothing/self-regulating' 'Negative sleep associations'
Child level	Learned behaviours	Parents	'Co sleeping as a baby Unable to self-settle Sleep association- using white noise, being with parents'
Child level	Preventatives	EPs	'There may be clinical sleep problems as a 'main' reason, from diagnosed/non-diagnosed sleep apnoea to nightmares or bed wetting disrupting sleep quality and quantity' 'Nightmares/unable to settle back to sleep sugary food/energy drinks' 'Anxiety, experience of trauma, chaotic home environment, feeling unsafe, lack of routine' 'Children having poor understanding of why sleep is needed'

Child level theme summary:

Whilst EPs focused on a more holistic view of exploring reasons behind a child's SDs, all three groups expressed a view that anxiety can impact sleep. Allowing time to talk to the child and reflect on her/his day and any worries s/he may have, was expressed as important across the three groups. EPs mentioned how both parents and schools can open up a dialogue about sleep with children. EPs and parents acknowledged learned sleep behaviours such as an inability to self soothe and developing sleep associations, however this was not mentioned by school staff. Only parents mentioned the impact that co-sleeping can have on a child's ability to self-soothe.

Table 15: External Influences

Theme	Sub-theme	Participant	Illustrative quote
External influences	Diet	EPs	'Consistent mealtimes and cut out junk foods and increase heathy foods ' 'Avoid caffeine in the afternoon/evening (or preferably all together), eat well and committing to helping them to sleep independently are all helpful'
External influences	Diet	Parents	'Sugar in the evening and screen time make it worse' 'Poor diet, sugar intake' 'Eating late'

External influences	Diet	School staff	‘Unhealthy diet’ ‘Get plenty of fresh air/exercise along with a good diet’
External influences	Parenting	EPs	‘Poor sleep hygiene. Lack of structure and boundaries. Too much time on screens’ ‘Parents not developing a good sleep routine early on. Parents not spending time reading to children before bed Parents not being consistent with bed times’ ‘Phones not monitored so disturbed by notifications through the night. TV’s in bedrooms. Addiction to games and online Communities. Parents affected by same issues and therefore suffering from poor sleep hygiene themselves’ ‘The main strategy would be to introduce and consistently implement routines: the routine of (and modelling of this by parents too)’ ‘Relaxing bed routine. Have set bedtimes Regular sleep - no change at weekend’
External influences	Parenting	Parents	‘Over stimulation, not having a set routine’ ‘Lack of routine and inconsistent parenting’ ‘Poor routines. Lack of parental experience or skill’ ‘Developing a consistent routine that empowers the child to make decisions re sleep’ ‘To lead by example, having a consistent family evening routine’
External influences	Parenting	School staff	‘Lack of routines at home. Longer working hours for parents meaning bedtime are rushed and not as precious or calming as they have been previously’ ‘Parents behaviour at home (alcohol, parties etc)’ ‘Read stories, make bedtime a calm and focused time. Strength of parenting skills and remaining calm and maintaining routines’ ‘One boy was doing far too many extra activities (lots of sport in the evenings etc). I told them he was really struggling in school as he was constantly tired and that his work was suffering’
External influences	Environment	EPs	‘There can be contextual 'main' reasons for example chaotic household settings and limited bed time / wake time routines, e.g. noisy neighbourhoods, no parental involvement in setting and managing a consistent bed time, night time

			‘Sharing a bed/bedroom with parents, siblings and/or pets which could all contribute to disturbed sleep or night time waking’ ‘Siblings (different routines and same rooms)’ ‘Lack of routines - or varying routines (e.g. children living across 2 households)’ ‘Ensure child falls asleep in bed, not elsewhere’ ‘Regular sleep - no change at weekend Have lots of physical activity during day. Cut down day naps. Restful bedroom’
External influences	Environment	Parents	‘Bedrooms not being places of rest’ ‘Not being comfortable in their surroundings’ ‘Sharing bedroom with multiple siblings/parents, change in environment (more than one home), disruption within the family, eating late’ ‘Installing blackout blinds and curtains to keep light at a minimum’
External influences	Environment	School staff	‘Too many siblings in each room, noise levels in house’ ‘Siblings- shared bedrooms with siblings who don’t sleep soundly or have additional needs’ In most cases in which I have done this, the child has been in child protection/child in need cases. They are not getting the basics at home - Sleep, food, love etc.
External influences	Medical conditions	EPs	‘Underlying medical or developmental conditions e.g. ASC, ADHD Anxiety’ ‘Neurodevelopmental difficulties as part of a sleep disorder associated with developmental or chromosomal disorder’ ‘ADHD medication disturbing circadian rhythms’ ‘Medical reasons (e.g. pain)’ ‘There may be clinical sleep problems as a 'main' reason, from diagnosed/non-diagnosed sleep apnoea’s to nightmares or bed wetting disrupting sleep quality and quantity’ ‘For children with development difficulties, unmet sensory needs can often play a role, while for children with an ASC, in particular, there may be more evidence of circadian rhythm disturbances, established bi-phasic sleep patterns and/or RMD. Restless legs and suspected sleep apnoea come up very occasionally’
External influences	Medical conditions	Parents	‘Autism plays huge role’

			‘Possibly biological - it can take longer for melatonin to be released in children with ASD’
External influences	Medical conditions	School staff	‘Medical conditions, disabilities’ ‘Autistic child I taught last year; mum spoke to me on numerous occasions about how to get him to sleep (average 3 hours sleep a night!)’ ‘Possibly because of concerns around ADHD and other concerns’
External influences	Life experiences	EPs	‘Trauma associated sleep difficulties (ACE's). Domestic abuse / noise from neighbours’
External influences	Life experiences	Parents	‘Abuse they witnessed against their mother’ ‘There has been a significant event in his life ie. new sister, moving house’
External influences	Life experiences	School staff	‘Domestic abuse/drugs in the home/alcohol in the home’ ‘Deprivation- may be going to bed hungry’ ‘Parental relationship breakdowns, family helping out a friend by having others temporarily move in with them, overcrowding, moving home, etc.); birth of a baby/young child in home who can't sleep; bereavement’
External influences	Knowledge	EPs	‘Lack of parental knowledge about how to support good sleep routines in the family and why, for example, it is a good idea to allow a baby the opportunity to learn to fall asleep by themselves, rather than being rocked etc’ ‘Learn about sleep hygiene, learn about importance of sleep, seek support from appropriate professionals, be able to access appropriate literature e.g. leaflets, websites, apps’ ‘More training for parents about the *REAL* importance of sleep and the real impact sleep reduction can have across a range of areas’ ‘I think there needs to be more training/courses available to educate parents, school staff and professionals on the impact of lack of sleep and strategies to develop better sleep routine. I would be very interested in attending training on this’ ‘If parents have a good understanding of how much sleep their child needs and the conditions under which our bodies' and brains can 'switch off' they can use this to create favourable conditions’
External influences	Knowledge	School staff	‘Lack of parenting skills/knowledge/ understanding’ ‘Parents not aware of what time their child should be in bed’

			'Parents lack of understanding about the effects of lack of sleep so their failure to provide their children with enough time to get enough sleep' 'Discuss the best time that children of certain ages should sleep'
External influences	Poor sleep	School staff	'I will also tell parents at the end of the day if I think their child has been particularly tired and the effect this has had on their behaviour/emotions/school work' 'Falling asleep in class/ dishevelled appearance. Late /unorganized. Frequent meltdowns' 'Parents were concerned that the child's behaviour would deteriorate in school as it had at home due to tiredness.'
External influences	Sleeping practices	Parents	'Over stimulation. Lack of parental experience or skill' 'Parent should form a routine from a very early age and stick with routine as much as possible, there will always be occasions where a routine is not possible but putting it back into place as quickly as possible is key' 'Enable and support children to be more independent at self-soothing and settling'
External Influences	Within child	Parents	'I think some children are naturally good or bad sleepers' 'Genetic/personality predisposition'
External Influences	Family conditions	Parents	Routine but this needs to be flexible with the family as life of other family members can cause disruption so children need to be able to adapt'

External influences theme summary:

Parenting practices were mentioned extensively amongst the groups, with a lack of structure, boundaries and consistency referred to as detrimental across the groups. Both EPs and parents mentioned the need for a bedtime routine to be modelled by parents, and school staff expressed a concern that too many extra-curricular activities can impact children's sleep and tiredness level. The environment a child experiences at home such as sharing a bedroom, busy households, or witnessing abuse or trauma were all expressed as having a detrimental influence on sleep across the three groups. EPs referred to the importance of sleep routines staying consistent over the weekends, which was not mentioned by the other groups. A differing view was expressed by a parent who felt children should adapt their sleep routine to fit in with family life.

All three groups mentioned the impact that neurodevelopmental disorders can have on child sleep, with EPs expressing how medication for such disorders may also impact sleep. The need for training on sleep across all three groups was expressed by EPs, who also mentioned the importance of being supported in implementing this work. EPs and school staff mentioned the need for knowledge of sleep duration recommendations, however this was not expressed by parents. Poor sleep itself was highlighted as an external influence on a child's ability to access school work successfully by school staff. The only group to comment on sleep difficulties as a 'within child' issue were parents, who expressed that genetics and being a 'good or bad' sleeper could impact a child's ability to sleep.

Table 16: Professionals

Theme	Sub-theme	Participant	Illustrative quote
Professionals	Queries over roles	EPs	'GPs etc are useless when it come to sleep in my experience. They just refer for medication' 'Whilst EPs can suggest advice, we are not experts on sleep' 'The school staff come into contact with all parents where this information could be shared; EPs only come into contact with a small percentage of children/families' 'Who can offer advice is dependent on the training and knowledge of the individual' 'In general, professionals who have both the training and the time to support families to implement sleep programmes are best suited.' '[EPs] Just a better generic understanding of sleep hygiene and ways children can be best supported' 'Most GPs and CAMHS services and Health Visitors have not had access to training and therefore are unable to offer comprehensive advice. GPs do not have time to do thorough assessments' 'I acknowledge that given the prevalence of the issue training needs to be provided to other professionals so more preventative strategies can be implemented first (e.g. by EPs, school staff etc)'
Professionals	Queries over roles	Parents	'Schools shouldn't need to help. Sleep routines should be in place well before school,

			if help is required, this needs to be done before school' 'It is parents who need to take responsibility. Schools can only give generic advice designed to fit all circumstances. Because of that the advice will necessarily be self-evident and obvious. Because of that it will be worthless' 'I think you would need to have a child with very severe sleep trauma to need a psychologist. If that child has that sort of trauma, the sleep issue will be the symptom rather than the cause of the underlying issue which needs fixing' 'Not sure as it's very hard to get children referred to see one [EPs] with major educational problem's'
Professionals	Queries over roles	School staff	'They [EPs] currently do not have time to deal with anything but the most severe cases, so I don't see how they could. However, support on establishing routines and persevering through the difficult phases' 'From experience, our school doesn't have enough time with educational psychologists to even begin to cover our SEN learning needs so I can't imagine ever being granted time to discuss sleep with them' 'I think it is mainly a parental issue. The school can make a parent aware there is an issue and possibly advise one people to talk to about it, but ultimately, steps have to be taken by parents' 'I think schools can continue to signpost parents to support. I don't think schools can offer the support themselves'
Professionals	EP	EPs	'A psychologist is generally the most useful approach as many sleep issues can have a psychological aspect' 'Educational Psychologists and school staff are the best placed professionals to engage in dialogue with parents and young people about sleep habits, issues and concerns. I believe they are best placed because they are the link between education and community' 'I've done sleep training and am qualified sleep practitioner. I find I am in a good position to advise and help parents about sleep during consultations. In general, professionals who have both the training and the time to support families to implement sleep programmes are best suited'

			‘Schools have limited time with their EP so if EPS could liaise with the facilitators of the sleep clinic to educate the whole school community that would be a great outcome’ ‘Use research on sleep to Show /clarify evidence base for sleep interventions with children. Provide training in Relaxation and Mindfulness Techniques’ ‘I think we can offer advice as part of our assessments and reports, if and when we suspect that poor sleep may be contributing to the child's barriers to learning’ ‘Training and signposting for parent/carers and school staff Exploring with children and young people any worries/ anxieties they may have’ ‘Run sleep clinics’ ‘Helpful resources for parents and children to take home with them to use, plan-do-review approach with them so that a solution is found as not all strategies will work for all children’
Professionals	EP	School staff	‘Advice on how lack of sleep is affecting the child and insight into why the child might not be getting enough sleep. Parents may listen to advise more from the EP rather than us’ ‘Providing advice to parents & children about healthy lifestyle + sleep’ ‘Give practical ideas in workshops’ ‘At home visits to assess barriers to sleep’ ‘Parent and family sessions’ ‘Giving resources and information. A professional convincing the parent that 12 hours' sleep is actually beneficial to the child's health, wellbeing and emotional/physical development as well as their education’
Professionals	EP	Parents	‘Helping parents understand why their child is having sleep problems and addressing it’ ‘Educate parents on how to create an environment and routine that suits the child Work with the child on calming techniques if needs be’ ‘By referring them to a course or workshop or for professional advice’ ‘Discuss and home visits to witness difficulties parents can go through at bed time’

			‘Supporting parents and schools to educate and suggest solutions. Impact on learning, the overall behaviour of the child’ ‘By making it part of the work/therapy - food as medicine, sleep as medicine. Being able to give families strategies in which to help children sleep’ ‘Educate mums and dads on what affects sleep and how. Create bespoke workshops where parents are set to see the difference between achievements of children who function on proper sleep and those who don't get enough sleep. Build confidence in parents that being smothered doesn't help a child into a good bedtime routine’
Professionals	Health professionals	EPs	‘Ease of contact - GP and HV Informal easily accessed support’ ‘I think a GP is a good first step in case there are physical issues affecting sleep, however a combination of support from a health professional and a psychologist is generally the most useful approach’ ‘GP - would provide general advice and signpost to further support services where necessary’ ‘I believe that our health colleagues should be taking on more responsibility for children's difficulties in school’
Professionals	Health professionals	School staff	‘I took one child to the school nurse as I was worried about her level of energy and was concerned that she was developing a virus or illness. She had no fever or other signs of illness but was sent home for rest’ ‘School nurse sessions, support from FLO, signposting to community paediatric services’ ‘I ran regular sessions and involved the school nurse or health visitor to give guidance and support for parents’
Professionals	Important factors	EPs	‘Specialist knowledge and expertise’ ‘I think those that are more likely to have regular contact with the child, and who are likely to see the impact of sleep problems are those best suited to help parents to manage the condition’ ‘The professionals are responsible for giving advice based on evidence’

			'I have selected health visitors because the earlier parents can get support with regard to positive & successful sleep routines the better' 'Problem solving consultations with professionals to enable increased Consistency, better understanding of what helps to calm children physiologically before bed, what works for their family'
Professionals	Multi-agency working	EPs	'All have different "slants" on the issue and could probably provide valid, helpful advice from their different perspectives' 'It often requires a multi-agency approach with support for child and family members who are often sleep deprived themselves'.
Professionals	Referrals	School staff	'We refer to sleep clinics with specialist health visitors' 'We have a home school liaison officer and we make referrals to family workers and educational psychologists' 'Referrals to Health Visitor, sleep clinics, workshops'

<u>Professionals theme summary:</u>

Each group expressed concerns over whose role it is to support CSDs. EPs queried that GPs may not be suitable as they may not have had appropriate training on sleep, and just administer medication. It was proposed that HVs may be appropriately placed to provide support due to frequent and early contact. However, it was stressed that HVs would require appropriate training. The theme of training was reinforced by EPs who expressed that those who have been trained and who have time to support sleep may be best suited. Some EPs also queried their own role in supporting sleep, feeling that they were not sleep experts or were limited by time constraints. Similarly, school staff referred to limited time with their EPs reducing likelihood of EPs being able to support sleep. Nonetheless, a number of EPs reported the importance of considering the psychological aspects of sleep, utilising multi-agency working, and that EPs and school staff may be best placed to provide support. Parents also demonstrated confusion over the EP role expressing that they would only see children with severe trauma. Some parents and school staff felt that it was not the school's role to address sleep issues and should be addressed at home. There was a diverse view of how the EP role could support CS, with each group mentioning training and advice, and parents and school staff suggested running parent workshops.

EPs referred to the importance of considering experience, knowledge, and evidence-based practice when considering who should support CSDs, as well as referring to the importance of applying a holistic approach to the work.

Table 17: Application of Psychology

Theme	Sub-theme	Participant	Illustrative quote
Application of psychology	EP role	EPs	'Share a Psychological perspective, equipping staff and parents with tools manage sleep better' 'Information as part of EP website for parents, something like 'The Basics: what you need to know'; ask about sleep during Consultation if does not come up' 'Include it in consultations as a normal part of factors that impact on children's attention, behaviour and learning' 'Inform schools about impact on learning and memory as well as on behaviour. Routinely ask parents the question and provide resources' 'CPD to raise EP knowledge and how to work with CYP and families to help sleep patterns improve' 'EP - for those who are referred for EP support, I think that sleep should always be a question at consultation, with school staff, parents and the CYP themselves. EPs are well positioned to provide general advice and strategies, and also any reported sleep difficulties should be considered in conjunction with the referred issue(s), as sleep difficulties may be a casual or contributory factor' 'I have chosen to undertake accredited training as a sleep practitioner. Sleep difficulties are often part of a much wider picture and the holistic approach taken by EPs makes them well-placed to understand the context' 'Position to offer a consultation to think about sleep together not just advice giving, make it personalised'
Application of psychology	Holistic view	EPs	''Sleep difficulties are often part of a much wider picture and the holistic approach taken by EPs makes them well-placed to understand the context' 'Talk to the child about what might help them/ what is stopping them sleep. Gather background information about events that

			could have triggered the sleeping difficulty. Talk to parents about what sleep is and it's importance. Talk to parents about how they could affect change in their children's sleep routine and what is possible. Plan strategies jointly. Review after 6 weeks to find out whether the strategies have worked or whether there were barriers' 'To work with the family to explore what is currently happening at home, any changes that can be made or worked towards and/or offering an evidence based sleep programme with support. Also information sharing'
Application of psychology	Educating/ training	EPs	'Research effective strategies for managing poor sleep, training and consultation (to school staff, parents, young people, assemblies, whole classes, group work etc) on a whole school/whole class/group or individual level depending on needs in order to build capacity, place a value on sleep and ask about it, consult about sleep with people and open up dialogue about what is helpful/unhelpful' 'Delivering training Supporting family support workers to support families through supervision etc Advising families directly' 'Evidence-based information e.g. about the impact of poor sleep on development and functioning' 'Do research into this area and produce evidence-based guidance' 'Staff training on specific diagnoses (Autism, ADHD etc) and sleep implications' 'Whole class/school work. Social stories for individuals (cowritten with parents and the child) re evening routines'

<u>The application of psychology theme summary:</u>

The application of psychology in supporting CS was only referred to by the EP participant group. EPs addressed the importance of using a holistic stance when working with sleep, to gather information, unpick the issue, and work collaboratively with parents. EPs described how their profession could utilise psychology to explore SDs by sharing a psychological perspective, addressing sleep in consultations, running sleep clinics, and educating about the impact that sleep can have on a range of competencies and behaviours.

EPs also expressed a desire to gain training and continuous professional development in sleep to help them utilise this knowledge in their work. In relation to ways EPs felt they could support SDs, a range of ideas were expressed with many commenting on running training, workshops, utilising a whole school approach, and both reading up on and completing research into sleep. Training other professionals who work more closely with families and parents was expressed as a way to support sleep, as well as running training on neurodevelopmental disorders and their impact on sleep.

Table 18: Consequences

Theme	Sub-theme	Participant	Illustrative quote
Consequences	Emotional/ social	School staff	'Meltdowns/highly emotional/ overeacting/ irritable/ short tempered' 'Difficulty regulating emotions' 'The children are more emotional and more sensitive what happens during the day' 'Mood affected, often tearful or grumpy' 'Lack enthusiasm, become tearful easily, have friendships issues from being 'grouchy' 'Bad tempered, don't form friendships as easily' 'Get upset quickly and easily, more likely to be involved in arguments/fighting'
Consequences	Academic	School staff	'Lack of concentration Low work ethic A struggle to participate with class discussion' 'Children cannot focus on the task they are doing, they cannot complete the task. Concentration levels are low' 'Some children show a major change in ability and attention some days when they are tired' 'Inability to concentrate, grumpiness, not producing same standard of work they normally do' 'The child was not working to their full potential and missed key learning strategies during the teaching input. The child also had difficulty completing independent tasks set and needed constant encouragement or had

			to stay in during their own time e.g. lunchtime or break' 'I have known children to fall asleep in lessons and miss chunks of their learning'
Consequences	Behavioural	School staff	'Primarily impacts behaviour and relationships with other children' 'Additionally with younger children it really effects their behaviour and they become agitated and aren't easily adaptable to changes of routine' 'Irritability and rudeness. Less impulse control' 'Irritability, behaviour issues, tears, emotional, fights etc' 'May cause additional problems such as violent episodes'
Consequences	Physical	School staff	'Another student would fall asleep in lessons so called home to discuss taking him to the doctors' 'Child falling asleep at desk' 'Some actually falling asleep this is happening more regularly' 'No energy for physical activity'

Consequences theme summary:

Due to school staff working closely with pupils on a daily basis, the participant group referred to the many consequences they have experienced in relation to child tiredness/ lack of sleep. Experiences of children appearing to have less control over their emotional state and mood were referred to frequently. Poor sleep was referred to as impacting academic ability consistently throughout the data, particularly impacting learning, retention, concentration, and understanding. Many participants mentioned children falling asleep in school, appearing lethargic and having low energy levels. It was also felt that a lack of sleep greatly impacts children's behaviour with examples of dangerous behaviour, fighting, relationship difficulties, and a loss of control being reported.

5. Discussion

This study explored CSDs from the perspectives, knowledge, and experience of EPs, parents, and primary school staff. The results of this study will be explored in relation to the five research questions and current CS literature. The strengths and limitations will then be discussed, along with implications for EP practice and future research.

5.1 What is the current knowledge of CS amongst the three systems?

5.1.1 EPs

Knowledge of CS durations varied greatly amongst the sample. The largest range of estimates varied by 10 hours, which raises concerns regarding the consistent level of sleep knowledge amongst EPs in the UK. Correspondingly, a quarter of EPs over or underestimated sleep durations by 1.5 hours or more across three of the four age groups: a concerning finding seeing as a reduction of sleep by 1 hour has been suggested to impact child neurocognitive functioning (Molfese et al., 2013). Furthermore, the data highlighted that the EP participants over or underestimated by at least 2.5 hours, more frequently than any other participant group. Such findings raise concern when previous literature suggests that EPs should be providing training on the psychology of sleep to parents, teachers and YP (Rydzkowski et al., 2016). Therefore, such findings advocate a need for training and CPD that educates EPs on CS if they are to advise or support CS in their work.

In line with the aforementioned findings, EP knowledge of sleep strategies and sleep associations also varied across the sample. 54.3% of EPs did not understand what sleep associations were. An important finding to acknowledge due to research linking such associations with difficulties falling asleep, nighttime awakenings, and preventing a child from learning to self-soothe. (Hiscock, 2010; Morrell & Cortina-Borja, 2002; Sadeh, 2004). As no published research has previously studied EP knowledge of CS, these results propose a possible benefit of EPs accessing training and increasing their knowledge of sleep durations and strategies. Nonetheless, the findings are not representative of all EP views and therefore cannot be generalised to the current knowledge level amongst the UK. However, this is particularly pertinent since EPs responded from each geographical region so the findings are not skewed by any specific authority or EPS view on sleep.

5.1.2 School staff

Similarly to EP knowledge of sleep durations, school staff estimations varied considerably with the largest range of estimations totalling at 9 hours. Such findings may indicate a disparity of sleep duration knowledge amongst school staff. Therefore, it could be argued that schools would benefit from training and an awareness of how much sleep children should be getting, to promote positive outcomes in schools.

On the contrary, the majority of school staff reported an understanding of the impact developmental disorders can have on sleep. However, due to the nature of the question, the level of understanding and accuracy of such information was not measured. Therefore, it is unclear what level of understanding school staff have. Nonetheless, as the literature highlights an important link between ASD and ADHD and CS (Cavalieri, 2016; Stein, Weiss, & Hlavaty, 2012), such results are encouraging when considering high prevalence rates of SDs in children with ASD (Couturier et al., 2005). Similarly sleep restriction has been shown to exacerbate inattention and cognitive symptoms in both children with and without ADHD (Gruber at al., 2011). Thus, in the context of the research findings, it seems important to gauge a clear understanding of school staff knowledge of developmental disorders and their impact on sleep. Such data could allow for school based training to be tailored to promote the importance of CS and how it can both impact upon and improve symptoms in children.

5.1.3 Parents

A variation in sleep duration knowledge was also evident amongst the parent participants however, the range of estimations was lowest in this group. Equal to the school staff participants, over 25% of parents over or underestimated by at least 1.5 hours in two of the age ranges. These findings are consistent with previous research that found a quarter of parents to underestimate their child's sleep duration requirements (McDowall, Campbell, & Elder, 2016).

Incorrect estimations by 2.5 hours were lowest in the parent group. Such findings may suggest a more prevalent knowledge and/or experience gap in EPs and school staff than parents. Thus, despite previous studies highlighting a lack of parental knowledge of their child's sleep needs (Owens & Jones, 2011; Jones, Owens, & Pham, 2013), such findings appear to be applicable to both EPs and school staff. Thus, warranting

further investigation to assess whether this proposed knowledge gap requires addressing.

Some parental quantitative responses alluded to an acknowledgment of the impact co-sleeping can have on a child's ability to self-soothe and sleep independently. Furthermore, parents also commented on the benefit of removing electrical devices from children one hour before sleeping. As well as the removal of devices before bedtime, much of the literature suggests the general reduction of time exposed to electrical devices (Falbe et al., 2014; Christensen et al., 2016; Carter, Rees, Hale, Bhattacharjee, & Paradkar, 2016).

5.1.4 Common themes

The common theme of reducing screen time was prevalent across all three groups, and was considered an area parents could support and a reason for poor sleep amongst children. Therefore, the participants shared the view that screens can have a detrimental impact on sleep. This knowledge of screen impact on sleep may be due to the frequent media exposure on the issue across recent years (Cooper, 2015; Davis, 2019; Fleming, 2018; Barnett, 2012). Therefore, one could argue that education on sleep durations and strategies could be distributed to the general public in a similar manner through media outlets to educate and raise awareness in those who live and/ or work with children.

Interestingly none of the participants mentioned the benefit of using mobile applications to assist sleep. In a review of 51 sleep applications available to download on mobile devices, a number were found to provide strategies to get to sleep (Ong & Gillespie, 2016). These included: educating about sleep disorders; producing white noise to aid sleep; and informing about the impact of daily habits such as exercise, caffeine consumption, and stress on sleep. Nonetheless, the accuracy of these applications remains unclear. A recent study by Bhat et al. (2015) compared the sleep readings of a mobile sleep application to a polysomnography reading when measuring participants' sleep. The results found no significant correlation between the application and polysomnography readings for light and deep sleep percentage, sleep efficiency, or sleep latency. The authors concluded that the application had poor specificity in detecting sleep. Consequently, it appears that the applications may lack scientific

rigour in providing accurate sleep data. Nonetheless, benefits may be achieved through an increased awareness of one's own sleep behaviours and the impact of lifestyle factors on sleep, as promoted by certain sleep applications (Ong & Gillespie, 2016). Thus, such applications may be appropriate for parents to monitor their own sleep considering the link between parental sleep and CS (Boergers et al., 2007). However, considering the literature correlating screen presence in the bedroom and poor CS (Mindell et al., 2009), the applications may not be an appropriate tool in promoting optimal sleep in children.

5.2 What is the experience of EPs, parents, and primary school staff in working with and supporting CSDs?

5.2.1 EPs

Responses alluded to the majority of EPs often encountering children with SDs or sleepiness in school. Such findings appear to be prevalent across the globe with 75% of adolescents from the United States (National Sleep Foundation, 2006) and over 90% of Japanese (Ohida et al., 2004) and Korean (Do, Shin, Bautista, & Foo, 2013) adolescents sleeping for shorter durations than recommended for their age. However, despite this evident issue experienced in schools by EPs, this does not seem to be an area that is being addressed within EPSs. Training and resources for parents and schools on CS were not highly prevalent within the sample. However, producing resources for parents was most frequently reported which suggests that some EPs place value on informing parents about CS. EPs reported a lack of sleep to impact many outcomes, with all participants reporting concentration as being hindered by reduced sleep in their work. This potentially highlights concerns when EPs are using assessments to gauge a child's learning or understanding if they are sleep deprived. Buckhalt, Wolfson, and El-Sheikh (2009) address this concern by suggesting that EPs should consider a child's sleep, including duration and quality, when using assessments or diagnostic tools.

5.2.2 School staff

Approximately a third of participants reported that their school provides support, advice, or signposts parents to other services to gain support for CSD. The results also suggested a high prevalence of school staff both contacting and being contacted

by parents, to discuss sleep related concerns in school. Therefore, it would seem appropriate for school staff to be aware of sleep research and strategies to facilitate a supportive and evidence-based discussion with parents, and potentially signposting them to sleep workshops in school. These results would suggest that school staff are well placed to offer such support, due to the frequency in which they communicate with parents about sleep issues.

The majority of the sample agreed that staff they work with often express concern over child tiredness, which could be indicative of a systemic sleep issue within primary schools in the UK. Participants also reported frequent parental concerns about their child's use of screens before bed. This was supported by a large number of anecdotal experiences of screens leading to sleep deprivation, sleepiness in school, and nightmares and anxiety from highly inappropriate viewing. This echoes previous research findings that report detrimental outcomes of screen use on sleep and daytime sleepiness (Carter, Rees, Hale, Bhattacharjee, & Paradkar, 2016). Similarly, viewing violent content has been linked to an increase in CS problems (Garrison, Liekweg, & Christakis, 2011). Thus, the impact of both the blue light and viewing inappropriate media on CS may be an important issue to address with parents.

All school staff participants reported concentration to be impacted by sleep in their experience. Interestingly, less than half thought that a lack of sleep impacted children's ability. A finding which does not gain support from previous literature on attention, working memory, and executive functioning (Lo, Ong, Leong, Gooley, & Chee, 2016). Consequently, it could be proposed that school staff are made aware of links between poor sleep and child academic outcomes, to reinforce the importance of sleep across the school system.

5.2.3 Parents

The most commonly reported CSD by parents was trouble falling asleep, which was followed by nighttime awakenings. Both of which have been linked to children developing sleep associations and an inability to self-soothe (Morrell & Cortina-Borja, 2002; Sadeh, 2004). In line with these findings, having a comforter/toy and lying next to a parent or family member were the most commonly reported sleep associations. A prevalent finding considering that sleep associations are suggested to be one of the

largest causes of CSDs (Hiscock, 2010). Average CS durations which were reported by parents highlighted that 5/9 age groups were sleeping for at least one hour less than recommended. This potentially highlights a lack of knowledge of CS durations amongst the parents, a finding which is consistent amongst other studies (McDowall, Elder, & Campbell 2017; Owens & Jones, 2011).

Interestingly some parental views went against the consensus within the CS literature. One parent felt that children needed to adapt to family life and change their sleep pattern to adhere to this, however numerous studies have advocated the benefit of having the same sleep and wake times across the week (Mindell et al., 2009; Kelly, Kelly, & Sacker, 2013). Other parents alluded to CSDs being a within child issue which could suggest that parents with this view may be less open to engaging in discussions or interventions regarding the sleep hygiene experienced at home, due to beliefs that the child is biologically predisposed to sleep a certain way. Considering this point, it appears important to explore the nature of the child's sleep, alongside the parent's perceptions and beliefs, as this could facilitate a more individualised approach to supporting the SD. Such an approach may impact the nature or level of parental engagement and potentially allow parents to consider the different factors that may support or hinder CS.

5.2.4 Common themes

All three groups expressed a view that child anxiety can impact sleep. This finding supports Hansen, Skirbekk, Oerbeck, Richter and Kristensen's (2011) research findings that linked child anxiety disorders to problematic sleep behaviours. This prevalent view amongst the three groups may suggest a need to work with the home and school systems, but to also address worries or anxieties with the child. Approaches such as mindfulness and CBT may be appropriate tools to alleviate anxieties and sleep problems, as both have been linked to improvements adolescent sleep (Bei et al., 2013; Norell-Clarke, Nyander, & Jansson-Frojmark, 2011).

5.3 Who do EPs, parents and primary school staff feel is best suited to support CSDs?

5.3.1 EPs

The majority of participants felt that addressing SDs should be part of the EP role. This was furthered by ideas that EPs can explore psychological aspects of sleep, and EPs and school staff are best placed to engage with parents and children. Nonetheless, concerns were raised regarding EPs having limited time with schools, therefore it was posited that EPs could link with sleep clinics to educate the whole school community. Literature that supports the notion of a whole school approach to addressing sleep has identified positive outcomes in CS (Paul et al., 2016; Wilson, Miller, Bonuck, Lumeng, & Chervin, 2014). Therefore, it may be advantageous and time appropriate to implement whole school approaches in supporting CS.

EPs selected HVs as the best suited source to provide support to parents and children. Participants commented on the benefit of trained HVs helping to provide support and routines from an early age, as well as the benefit of frequent contact. However, a caveat was raised in that those providing support must have specialist sleep knowledge, provide evidence-based advice, and have received appropriate training. These results again highlight a query over who would be best to provide such training to other professionals. One participant reported that EPs can provide sleep advice but are not experts in sleep. However, considering the literature on a lack of knowledge (Owens & Jones, 2011) and training (Faruqui, Khubchandani, Price, Bolyard, & Reddy, 2011) amongst doctors, and this study's findings on varying knowledge amongst EPs, a question is raised of 'are any professionals experts on sleep?' If no professional group is advocated as 'sleep experts', then an evident role needs to be filled to ensure parents and children are supported holistically with sleep. Multi-agency working was also advocated as a beneficial approach to working with CS, as this can provide support to both the child and parents. The importance of supporting parents is echoed by previous studies that link stress, depression, and marital discord with CSDs (Lam, Hiscock, & Wake 2003; Minde et al., 1993; Morrell & Steele, 2003). It is therefore advocated that professionals consider the impact of CS on the family system, and work to support parents with this. This seems of particular significance when considering findings that link improvements in bedtime routines and CS to significant reductions in parental fatigue, anger, and tension (Mindell et al., 2009).

5.3.2 School staff

60.9% of participants agreed that their school should provide sleep support for parents, which could include: discussing strategies amongst staff; discussing sleep during multi-agency meetings; and running parent workshops. Therefore, suggesting that schools may be open to working with EPs or other professionals in facilitating discussions around sleep and supporting parents. School staff chose doctors as being best suited to provide support, followed by HVs. This was a finding that was replicated amongst all three groups, with participants selecting doctors and HVs as the two-best suited sources of support. A consistent view amongst school staff was the importance of parents taking ownership of their child's sleep, suggesting that school staff may not feel that external (school) involvement is needed. Participants emphasised the importance of parents modelling routines, setting rules, and keeping to a set bedtime routine daily. This is consistent with research that emphasises the importance of parental sleep practices in the home (El-Sheikh & Sadeh, 2015). However, when considering this study's findings that parents would value support and advice, it seems important for parents to have access to such information.

5.3.3 Parents

Parents reported HVs and doctors to be the best suited at supporting CS. This is consistent with the findings of Jin, Hanley and Beaulieu (2013) who identified that parents frequently consult clinicians regarding CSDs. EPs were reported to be the least well suited by parents. However, due to only 2% of parent's children having been seen by an EP, there may not be a clear consensus of the EP role amongst participants. Similarly, parents reported that EPs 'would only treat severe sleep trauma or major educational problems' which would suggest an incorrect view of how EPs work. Therefore, it would be of benefit to explore the views of parents who have had contact with an EP, to identify if this would impact their suitability response.

The views of parents differed amongst the sample. Many felt that a routine, boundaries, and rules around sleep should be implemented by parents and that this should begin from an early age. This view was furthered by participants who felt it was not in the school's remit to support sleep. However, other responses demonstrated a desire for parental support in school through talks or workshops by professionals. Some parents felt that EPs could help by supporting both parents and teachers in

educating them about sleep and suggesting solutions. This variation in views and opinions is likely to reflect the differences amongst the sample. It could be argued that due to the range of views on parental support with CS, schools and EPs could explore the needs of parents and use this information to tailor the support given.

5.3.4 Common themes

There was a consensus across all three participant groups that sleep education could be integrated into the school curriculum. Each group commented on educating children about the importance of sleep and addressing the impact that sleep can have on health and wellbeing. This finding is in line with the research of Gruber et al. (2016) who identified the benefit of promoting good sleep habits and practice with children in schools.

5.4 Is there a desire or requirement for training on CS amongst the three participant groups?

5.4.1 EPs

The prevalent view amongst EPs was a need and desire to receive training on sleep. The majority of participants believed that doctoral training courses should cover sleep and CS related difficulties. However, almost three quarters disagreed that CS had been discussed during their training. Such findings are similar to those of clinical psychologist doctorates where only 5% of courses were found to offer any academic training on sleep (Lichstein et al., 1998). However, no research has explored the number of UK EP doctorates that incorporate CS into the teaching curriculum, so it is unclear how many trainee EPs are currently being educated on CS. Despite this, the majority of participants reported that they would like to receive such training. Consequently, an apparent need for sleep training across doctoral courses and EPSs is postulated.

5.4.2 School staff

In line with EP views, school staff also expressed an interest in receiving training on ways they could support parents and children with SDs. Conversely, it seems important to consider how this would be delivered as more participants favoured a parents' evening session (80.4%) over a school INSET for staff (56.7%). Thus, it may

be important to gauge what support or training is sought after and therefore what delivery method would be most appropriate. This finding may also suggest that school staff feel parents are more in need of receiving such training than themselves. 36% of the sample reported that their school is currently providing support or advice to parents however, it is not known what this information looks like. When considering this study's findings on school staff knowledge it appears essential for this information to be evidence-based and accurate.

When asked how EPs could help support CS, school staff suggested training for parents, school staff, and children, and for the importance of sleep to be conveyed throughout the school. This finding is consistent with research that advocates EP involvement in systemic sleep training in schools (Rydzkowski et al., 2016).

5.4.3 Parents

A less consistent response was identified by the parent participants. The majority of parents reported that their child's school did not offer any advice on sleep routines, and 39% of those reported that they would be interested in receiving advice on sleep from their child's school. A similar number (42%) said they would attend a workshop on sleep if it was made available to them. It is difficult to obtain whether such views are representative of parents of children with SDs. As an opportunity sample was used, many parents may not have had issues regarding their child's sleep. This is reiterated by only 10% of parents seeking support for CS and only 2% of parents reporting their child as receiving medication for sleep. Therefore, it would be beneficial to obtain the views of parents who report their child's sleep as an area of difficulty. Additionally, the parent sample suggested that EPs could support CS by educating school staff and running parent workshops. Such findings potentially highlight both a want and need for information and support on CS from both parents and school staff.

5.4.4 Additional comments

When considering who is best suited to provide support, an EP response on suitability for supporting sleep highlights an important consideration. "Professionals who have both the training and the time to support families to implement sleep programmes are best suited", this view is consistent with this study's findings on sleep knowledge. Whilst EPs may be suitably placed to provide support to children, parents, and school

staff, it is highly important that EPs gain knowledge and/or training themselves to ensure they are following British Psychological Society's (BPS) code of ethics and conduct (BPS, 2018). As noted in BPS guidelines, psychologists should be aware of advances in the evidence base, be cautious in making knowledge claims, and be aware of the limits of their competencies. Therefore, to ensure EPs are practicing ethically it seems appropriate for both doctoral courses and EPSs to provide appropriate teaching and training on CS.

5.5 Is there a role for EPs in supporting CSDs?

EP responses alluded to the majority feeling that addressing sleep both is and should be, part of the EP role. Over half of the participants reported to ask about a child's sleep during a consultation and over three quarters noted that parents reported concerns about getting their child to sleep. Thus, it could be argued that EPs are well placed to inquire about sleep in their work. Additionally, sleep behaviours could be unpicked, and appropriate strategies explained and discussed during consultations. EP responses alluded to a view that the profession could provide training to parents, school staff and other professionals. This may be suitable when considering that home visits were suggested by parent and school staff participants. It may not be appropriate for EPs to visit homes due to time restrictions, however providing training to professionals that frequently visit households (such as HVs), may be an appropriate way of upskilling professionals and supporting and educating parents. Research by Sutton (2011) advocates the role of HVs in preventing SDs with parents. However, the author places importance on gaining knowledge of sleep theory and receiving specialist training. Therefore, it may be appropriate for EPs to provide training and supervision for HVs in supporting and preventing sleep difficulties in the home, if they have received appropriate training to do so.

In line with training being advocated as part of the EP role, all three groups suggested that EPs could run parent workshops. Previous research on ASD based sleep workshops for parents identified positive outcomes on CS and child and family functioning (Malow et al., 2014). The study also found no difference between individual or group led sessions, proposing that group workshops could be advantageous in schools. A further study that was run by a sleep specialist, paediatrician, and educational consultant had similar positive outcomes (Reed et al., 2009). Such

findings could propose the benefit of a multi-agency approach to training and educating parents on sleep.

Interestingly, EPs focused more on general advice and strategies, however parents felt it would be beneficial to learn about the impact sleep has on learning and behaviour, as well as gaining information on what impacts sleep. Therefore, it seems important to consider what parents would want from a workshop, or EP sleep session, to ensure the information is accessible and relevant to parental needs. School staff also felt that having information or advice delivered by an EP was likely to increase the parents' engagement with the information. This raises questions over the status of the professional running training and whether this impacts credibility or attendance.

5.6 Strengths, limitations and future research

Table 19. Strengths and limitations of the research

Strengths	Limitations	Future research
The mixed method design allowed for a greater depth of data to be obtained and enabled the researcher to triangulate the findings (Onwuegbuzie Leech, 2005).	An evident limitation of the study was its use of an opportunity sample. This resulted in a number of generalisability issues within the data. The majority of all participants across all three groups were female, meaning the results cannot be generalised to both sexes' views on CS.	It would be beneficial for future research to study the experiences and knowledge of parents who have concerns about their child's sleep by recruiting parents who meet the criteria of CSDs. It would also be of benefit to explore whether parents' views of the EP role in supporting sleep would vary in those that have had involvement with an EP. This seems important when considering that many parental responses alluded to a misunderstanding, or confusion of the role.
This research was the first to explore EPs knowledge of sleep durations, which proposes important	Due to the use of an opportunity sample, it was not clear how many parents had concerns around their child's sleep. Therefore, this	Another interesting direction for future research would be using a questionnaire that contains statements about sleep,

implications if EPs are to support CS in their practice.	was likely to skew the views, experiences, and suggestions for how CS could be supported.	where participants select true or false. This could explore a clearer understanding of sleep amongst the three groups. Due to the nature of questions used in this study, participants selected whether they agreed or disagreed with statements along a scale. However, this did not provide an objectifiable understanding of each group's true understanding of sleep.
A strength of the study was in the large and geographically representative sample, preventing a particular local authority approach to sleep from impacting the data and views of participants.	In line with the aforementioned limitation, only 10% of parents had sought support for their child's SDs, and only 2% of parents reported that their child had had previous EP involvement. Such a finding is likely to impact the parents' understanding of the EP role and is also unrepresentative of parents whose child has difficulties with sleep.	The study may have also been impacted by social desirability bias. Thus, using a questionnaire to assess participants' knowledge, as done so by McDowall et al., (2017) with parents, could produce a clearer understanding of the level of knowledge between groups and eliminate social desirability biases from impacting the data.
	Participants responses to the open-ended questions placed at the end of the questionnaire may have been influenced or impacted by the previous questions. Therefore, the structure and design of the questionnaires may have impacted participants' views and beliefs about sleep.	As posited in the discussion, no current literature has explored the current teaching of sleep amongst UK based EP doctorates. Therefore, to further explore the current level of knowledge and need for sleep training amongst EPs, it would be highly beneficial to gauge if and how sleep is taught on doctoral courses. Future research could send a

		questionnaire to programme directors across the 14 courses in England and Wales, to identify if sleep is being covered, and if there is a want or need for it amongst doctoral courses.

5.7 Implications for EP practice

This research evokes several implications for EPs at both an individual and systemic level. The findings propose that EPs could be well suited to enquire and educate about sleep during consultations and to promote the importance of sleep amongst the systems they support. It may also be appropriate for EPs to work with individual children and YP on addressing reasons behind SDs. It has been proposed that CBT, mindfulness and relaxation techniques could be utilised by EPs in their practice when working with children who have SDs (Rydzkowski et al., 2016).

The research highlights both a desire and requirement for sleep training amongst EPs, parents and school staff, with many participants feeling EPs would be most suitable to deliver such training. However, it is important to consider the BPS ethical code of conduct, to ensure that EPs are aware of sleep research and cautious in making knowledge claims when delivering such training. Therefore, it is posited that for EPs to support schools, parents and other professionals in enhancing the knowledge base of sleep, EPs should be able to access high quality training on CS themselves. Thus, it seems important to question whether it would be appropriate for doctoral training courses and EPSs to provide such training. If importance is placed upon the knowledge of sleep amongst EPs, and therefore knowledge and competence is increased within the profession, EPs could be well placed to explore, educate and train others on CS and it's many implications.

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Child sleep: A systemic exploration of the knowledge and experience of educational psychologists, parents and primary school staff.

Part Three: Critical Appraisal

(Word count: 6,554)

Part A: Contribution to knowledge

1.Introduction

This critical appraisal will explore the contributions this research has made to the knowledge on child sleep (CS) and how this may impact the different systems studied. It will also critically explore the account of the research practitioner by considering the epistemological stance and the methodological approach taken, and why other approaches were not felt to be suitable.

This study aimed to research the knowledge and experience of EPs, parents and primary school staff in relation to child sleep difficulties (CSDs), to understand the perceptions of the different systems and whether future work is required to increase knowledge, and support systems with CS. The study used a mixed method design to allow triangulation of the data and to fully explore participants' knowledge of CS and their experiences and perceptions. Online questionnaires were used to collect data from the three participant groups.

2. Development of the research question

Professional experiences working as a trainee EP generated a question of whether sleep should be an area that is explored and considered by the EP profession. Observing children who were previously labelled as 'unable to learn', generated questions about the child's sleep durations, hygiene, and routine. Through exploring this topic in consultations, it was evident that sleep may have been impacting a child's ability to learn and focus however, the issue had not previously been addressed by school staff or parents. Consequently, such questions also facilitated personal reflection on my lack of knowledge and training on CS. This lack of knowledge encouraged me to reflect on the British Psychological Society's code of ethics and conduct (BPS, 2018). As noted in the BPS guidelines, psychologists should be: aware of advances in the evidence base; be cautious in making knowledge claims, and be aware of the limits of their competencies. Therefore, considering a personal lack of knowledge on CS and children frequently appearing tired during observations, it felt imperative to research and upskill my knowledge and competence in regard to CS and how it may impact children in school.

This encouraged me to read around the CS literature, exploring the recommendations for parental practices, sleep durations, and sleep hygiene. The literature on CS and the impact poor sleep can have on many child related outcomes (National Sleep Foundation, 2004; Sadeh, Gruber, & Raviv, 2003; Touchette et al., 2007) highlighted a link between poor sleep and child related factors in school. The promotion of optimal sleep for children is echoed throughout the CS literature (Galland & Mitchell, 2010) and conveys the importance of parents, school staff, and EPs being aware of optimal sleep practices (Rydzkowski, Canale & Reyolds 2016). However, it was evident that no published research had explored the EP role in relation to sleep. Similarly, no research could be identified that collated the knowledge and experiences of school staff. Therefore, it was unclear whether EPs and school staff within the UK were supporting CSDs in schools and what the current knowledge of CS was. Thus, I began to develop research questions to explore what the current knowledge and experiences were of EPs and school staff in working with CSDs.

Much of the literature had explored parental interventions (Mindell, Kuhn, Lewin, Meltzer, & Sadeh, 2006; Paul et al., 2016), to enhance parental knowledge of CS due to a frequent finding that parents incorrectly estimate child sleep needs (McDowall, Campbell, & Elder, 2017; Owens & Jones, 2011). However, no research appeared to examine if this was a similar issue with school staff or EPs. When considering the nature of EPs and school staff working with children and parents, it seemed important to explore whether either were appropriately placed to support CS. Additionally, it was necessary to research the current knowledge held by the participant groups, as well as exploring if training was required or requested by participants.

3. Rationale for this study and its relevance to systems

Previous research has advocated that EPs should support CS at a systemic level, through training and working with parents, children, and school staff (Rydzkowski et al., 2016). Due to no published literature exploring the EP role and sleep, this research aimed to add to the CS literature, by offering EP views on whether the role would be suited to provide the support that has been advocated previously. It appeare important to collate the views of school staff and parents, due to the systemic impact that CSDs have been suggested to create in the home and school environment (Weinraub et al., 2012; Gruber, Somerville, Bergmame, Fontil, & Paquin, 2016). This seemed of noted

importance considering that the literature advocating the EP role was written from a psychological perspective. Thus, the view that EPs could be appropriately placed to support CS may not be evident amongst those that would receive such support. Therefore, a clear understanding of the current knowledge, experience, and need for training amongst the three participant groups, was felt to be an important addition to the CS literature.

4. Gaps in the literature/ literature review process

An apparent query was how to structure and write the literature review. The purpose of a literature review is to provide the reader with a comprehensive overview of the literature and to objectively report the current knowledge on a topic (Green, Johnson, & Adams, 2006). Due to different types of literature reviews being used within journals, I believed it was important to research these to ensure my approach was best suited.

Narrative literature reviews collate a vast amount of information to give a general overview of a topic, whilst allowing the researcher to refine, develop, and generate hypotheses from the literature (Green et al., 2006). I felt this approach was best suited once I had performed a preliminary search of the CS literature, due to the many outcomes linked to CSDs. It was also evident that cultural differences impacted sleep approaches and strategies (Mindell, Sadeh, Kohyama, & How, 2010), and that poor sleep was both impacted by, and impacted upon the systems surrounding the child. Therefore, due to the complexity and depth of the data, I felt a narrative approach was best suited to ensure the literature review provided a broad perspective of the sleep literature (Day, 1998). However, issues can arise from using a narrative approach. Consequently, I felt it was important to be aware of potential researcher bias when writing my review (Hutchinson, 1993) and to ensure that I remained critical and objective of the research throughout.

Strengths have been advocated in utilising a systematic literature review (Green et al., 2006), and it has been described as an appropriate method when faced with studies that are similar in nature and construction. However, issues arise when studies are not similar enough to draw conclusions from (Chalmers, 1998). I didn't feel that a systematic approach would be suitable due to significant gaps in the literature making comparisons between studies inappropriate.

Within the sleep literature, there were evident cultural differences in people's perceptions and beliefs about sleep, which are important to consider due to EPs working with many cultural backgrounds in the UK. From reading literature on how CS can impact the many systems around the child, it seemed important to explore the literature from an ecological systems perspective. Such an exploration of the data lends to a narrative approach due to the breadth of exploration it allows. The process of writing the literature review allowed me to refine the topic of CS as I had generated many research questions and hypotheses before beginning the process. Additionally, this process highlighted evident gaps in the literature and a need to generate an understanding of EPs' knowledge and experience of CS.

Through reviewing the CS literature, I could not identify any studies that researched the EP's role or knowledge of CS. Similarly, there was no published research looking into EP training on sleep, which created questions of whether CS was being taught in Universities or educational psychology services (EPS). Due to this gap, I felt it was important to explore the current knowledge level, experience, and training of EPs on sleep throughout the UK. Nonetheless, during the recruitment process, I was contacted by an EP who had written her doctoral thesis in 2018 on adolescent sleep, researching cognitive and learning outcomes in relation to reduced sleep. This suggests that sleep and the EP role may be an emerging topic of interest amongst trainee EPs (TEPs).

As research had advocated that EPs should address CS in their work (Rydzkowski et al., 2016), I decided it was also important to explore parents and school staffs' knowledge and experience of CS, as well as whether they had, or would benefit from training. I felt that collecting data from the different systems that EPs work with would allow triangulation of the data and generate a clearer image of how the systems are currently working to support CS, and whether they would benefit from a more systemic approach. As many studies have focused on parental knowledge of CS (McDowall et al., 2017; Owens & Jones, 2011) an evident gap in the literature was apparent. No studies had collected both the views and knowledge of CS from the systems around the child, to identify how sleep is currently being supported and whether those systems have the appropriate knowledge and skills to support.

5. Contribution to knowledge for systems

Given the coverage of the importance of CS in the media over recent years (Cooper, 2015; Fleming, 2018; Davis, 2019), this study provided an insight into how the different systems around the child wish to be supported and how they feel they can support CS. This is an area that hasn't been explored previously, and despite an abundance of literature highlighting issues with poor sleep (Sadeh et al., 2003; Skúladóttir, 2016; Gregory & O'Connor, 2002; Fallone, Owens, & Deane, 2002), it seemed unclear as to who is best suited to provide support and address the issue.

The literature review highlighted evident concerns with doctors working inconsistently in addressing and treating CSD (Herberholz & Ozer, 2015), and a lack of medical training (Jan & Freeman, 2004). The findings reported suggest that professionals may be unclear as to what is suitable and appropriate advice in relation to CSDs. This appears to propose the importance of parents being able to access correct and consistent advice easily, without necessarily having to visit doctors who may be uncertain themselves. Therefore, a shift towards training and increasing knowledge and awareness of CS with the professionals that work with and support children, may help to increase professionals and consequently parents' knowledge and access to support and advice.

5.1 EPs

The results of this study highlighted a variation in knowledge of age related sleep durations across all of the three participant groups. However, EPs over or underestimated by 2.5 hours or more, more frequently than parents or school staff. These results highlight a concern regarding EP knowledge of CS durations. This is of concern as the EP role is described as one that utilises evidence-based resources and knowledge to support areas that adversely impact learning, behaviour, and emotional wellbeing (Price, 2017). All of which have been suggested to correlate with poor sleep in children (Sadeh et al., 2003; Fallone et al., 2002; Gregory & O'Connor, 2002). Therefore, it is postulated that EPs across the UK would benefit from an awareness of the CS duration evidence base. In line with these findings, it was also evident that the majority of participants had not received any training or coverage of CS in their doctoral training or from their EPS. Nonetheless, the majority of participants felt that

doctoral courses should cover sleep, and reported frequent encounters with children with SDs or sleepiness in school.

Despite these findings, it is unclear as to how many of the educational psychology doctoral courses across the UK cover sleep as this information was not obtained. Such findings would suggest a need to explore the coverage of CS on doctoral courses through future research. Thus, considering these results it is postulated that a systemic shift to incorporate and value CS as part of the EP role may be both beneficial and welcomed by the profession.

In line with sleep duration knowledge, the awareness of sleep strategies varied across participants. This is consistent with the aforementioned suggestion that EPs would benefit from training on CS. These research findings add to the contribution of knowledge for EPs, due to no research previously exploring the knowledge or understanding of CS. Therefore, to ensure EPs are working within the BPS (2018) guidelines, if professionals are to offer advice, discuss sleep, or provide training the knowledge level and competencies need to be addressed within the profession.

EPs selected health visitors (HVs) as the best suited professionals to support parents with CS. This was a similar theme across the participant groups, and it has been advocated by previous research (Sutton, 2011). However, as noted by EP participants in this study, it is important that whoever delivers the support has received appropriate training themselves. Therefore, EPs could be well placed to work collaboratively with HVs to apply psychology to home visits and explore sleep in the home if they receive training themselves.

5.2 Parents

Parental reports of their child's sleep durations highlighted that 5 out of 9 age groups were sleeping for one hour less than recommended. Similarly, over 25% of parents incorrectly estimated CS durations in two out of four age groups. Such findings echo previous research that found parents to incorrectly estimate their child's sleep duration requirements (McDowall et al., 2017; Jones, Owens, & Pham, 2012). When considering the adverse effects of reducing CS by one hour (Molfese et al., 2013), it seems important for parents to have access to correct sleep duration information.

Due to a variance in beliefs and perceptions about sleep in the parent sample, it seems important for professionals to be aware of cultural differences and the need for an initial exploration of the sleep situation. An individualised approach to supporting parents may allow suitable strategies and support to be put in place. This exploration of the issue and importance placed on exploring parents' cognitions about sleep has been advocated by Hiscock (2010).

An evident confusion regarding the EP role was apparent from the parent participants. This may suggest a need for the role to be clarified to schools and parents, which may facilitate more open discussion about sleep and encourage parents to talk to the school or EP about concerns. Additionally, all three systems suggested the benefit of sleep workshops for parents and the importance of reducing screen time in the home. Therefore, these areas may be important for all systems to work on collaboratively to facilitate training and support a reduction in screen exposure.

5.3 School staff

In line with the findings amongst the other two groups, school staff sleep estimations also varied considerably. Thus, training on CS needs seems a necessity across all three groups to ensure a more consistent understanding of CS requirements. Approximately a third of school staff reported that their school currently provides advice or signposting to parents to support CS. Although it is unclear how many schools this equates to, or what this support looks like, it suggests that some schools place value and importance on supporting parents with sleep. In line with this finding, the majority of school staff participants felt that their school should provide support for parents. Thus, implementing a whole school awareness and promotion of CS may be an appropriate way of supporting both parents and children. In line with this suggestion, all three groups placed value on incorporating sleep into the school curriculum, which gains support from research that links child sleep education to improved sleep outcomes (Gruber et al., 2016).

6. Contribution to knowledge as a researcher and practitioner

Throughout the research process I frequently considered ethical and methodological issues that may arise, to ensure that the research was both ethically and

methodologically sound. I learnt the importance of thoroughly researching the current literature, to aid my own understanding of limitations within the data. Frequently studies focused on obtaining the views of parents from one school or geographical area (McDowall et al., 2017), and EP view or perception studies were often conducted within one local authority (Atkinson, Corban, & Templeton, 2011; Doveston & Keenaghan, 2010). This allowed me to consider the limitation of recruiting participants from one geographical area, as it can limit the extent to which responses can be generalised; and prevent a more general view from being obtained from the three groups. I considered the benefit of recruiting a large and nationwide sample when researching an under-researched topic area. As no published research had explored the EP role and CS, it seemed important to reduce responses from one specific area which may view and support sleep in a particular way, causing the results to be unrepresentative of that system's view or understanding of sleep.

I reflected on difficulties with recruitment and how this can hinder a researcher's ability to understand how a profession currently works. Therefore, I researched different methodological strategies and decided an online questionnaire could increase both recruitment and participation due to ease and convenience for participants. Originally, I had considered using semi-structured interviews. However, limitations were evident in the number of responses I would be able to collect due to time constraints of meeting with each individual. This would not have been possible with the 397 participants that took part in this study. Nonetheless, it was important to consider the potential benefit of interviews allowing for more in-depth information to be obtained. The use of online questionnaires also limited ethical issues from impacting participation, due to the anonymity of the questionnaires. I also considered that using online questionnaires may limit demand characteristics and researcher bias from impacting the data, which I have experienced when using semi-structured interviews previously.

Throughout the process of familiarising myself with the CS literature, I developed a greater understanding of the importance of unpicking research, cautiously reading research findings, and being more critical of approaches and results. This allowed me to reflect on my own study to try and reduce limitations. It encouraged me to remain critical of findings, particularly when they may not be generalisable to particular age

groups, cultures, or professions. Thus, when analysing my data, I ensured that I applied this strategy to my own analysis to limit researcher bias.

The research process developed my knowledge and understanding of CS and allowed me to reflect on my own practice and how I could incorporate sleep into my professional role. Before beginning the research I had not considered the impact a child's health may have on sleep, or how behaviours such as being rocked by parents could impact sleep. Therefore, whilst conducting this research and writing the literature review, I began to think about sleep in a more holistic manner, focusing on the many ways sleep can be impacted and improved. A suggestion by Hiscock (2010) that promoted working with parents to unpick cognitions about sleep, also reframed my thinking on the importance of professionals gaining information about the current sleep behaviours and patterns in the home, as well as listening to parent's concerns. Consequently, I began to apply this idea to my consultations and exploring the parent's thoughts about the issue, as this would likely impact the approach needed, and thus the intention to engage in the change process.

Reflecting on responses that advocated the importance of training and knowledge over a specific job role, encouraged me to focus on the importance of upskilling and being appropriately trained in a topic area. This seemed of great importance when considering the disparity in the knowledge of CS amongst EPs in this study. Therefore, I reflected on my own professional practice and how it is imperative to ensure that I am aware of the limitations of my knowledge, and that I continue to keep informed with up to date evidence bases.

Finally, the literature review process highlighted differing views about sleeping practices across cultures, with expectations of infant sleep patterns reported to be reflected in the cultural expectations and values of a country or culture (Caudill & Plath, 1966). Therefore, it seemed appropriate to note where the research took place and whether cultural expectations or norms impacted the methodology, analysis, and conclusions reported. This made me question whether it was appropriate to label sleeping practices as 'good' or 'bad' and encouraged me to question the appropriateness of changing sleeping practices when they are culturally appropriate. For example, the literature on co-sleeping varied greatly in Eastern and Western

cultures (Mindell et al., 2010). The perceptions of why co-sleeping is used vary greatly between cultures and are viewed more favourably in Eastern societies. Therefore, I reflected on how cultural values and approaches to sleeping should be approached sensitively and respectfully. Rather than focusing on changing sleeping practices so they follow in line with 'Western norms', it seemed of great importance to respect and understand the current sleep behaviour and work alongside parents to unpick difficulties and focus on culturally appropriate strategies.

7. Further research

During data collection and analysis, I noticed limitations in my design and reflected on how I would change these to improve the data source. One limitation was the closed nature of questions asking about participants' knowledge of sleep. These allowed participants to state whether they agreed or disagreed to statements about their knowledge of different sleep strategies or approaches. However, due to previous research finding parents to have incorrect views about sleep practices for their children (Owens & Jones, 2011), and the results from this study generating a range of results across the sample, it would have been beneficial to measure this knowledge more explicitly. Asking participants to agree or disagree to statements did not provide an objectifiable understanding of each group's true understanding of sleep, which could have also been impacted by desirability bias. Therefore, on reflection asking 'true' or 'false' questions about factual sleep statements as done previously by McDowall et al. (2017), may have produced a clearer understanding of sleep knowledge amongst the groups. This may have also clarified a need for sleep training on specific areas amongst the different systems studied.

A methodological issue that became apparent during my analysis was the use of a leading question in my school staff questionnaire. The question '*In your experience do you often notice children who appear tired in school?'* may have caused participants to feel that they should respond in a certain way due to the leading nature of the question, assuming that teachers do experience pupil tiredness in school. Additionally, the ambiguity of the word 'notice' may have been perceived differently by participants, so therefore the results of this question are difficult to unpick and generalise as participants understanding of 'noticing children' may have varied greatly. Thus, in

future research it would be important to consider the wording of questions to avoid leading or ambiguous questions.

As posited in the discussion, no current literature has explored the present teaching of sleep amongst UK based EP doctorates. Therefore, to further explore the current level of knowledge and need for sleep training amongst EPs, it would be highly beneficial to gauge if and how sleep is taught on doctoral courses. Future research could send a questionnaire to programme directors across the 14 courses in England and Wales, to identify if sleep is being covered, and if there is a want or need for it amongst doctoral courses.

Furthermore, when analysing the data it became apparent that all three groups viewed doctors and HVs as being best suited to support CSDs. Therefore, I reflected on my initial choice of participant groups being those that I felt were most likely to encounter SDs, which demonstrated how my perceptions of the issue shaped the research process. Therefore, a pilot study obtaining views from a small number of EPs, parents and school staff before conducting my research, may have impacted my research design and selection of participant groups. At present, it is unclear whether HVs receive training on CS, and the data speculates little training on sleep within medical training in the UK (Bajaj & Ozer, 2015; Herberholz & Ozer, 2015). Therefore, it is felt that future research could explore health professionals' knowledge and involvement with CS to identify if training is required and if these professions could help to support SDs. It is also important to consider that SDs extend well past the age at which HVs are usually engaged with the family, so despite being appropriately placed to support children in infancy, they would not be suitably placed to support families with older children (Patience, 2013).

Finally, another limitation within the data was the opportunity sample used which created issues with clarifying how many parents felt that their child had a SD. On reflection, a question asking if parents felt their child had difficulties with sleep would have been beneficial. Additionally, to generate a clearer picture of the views and experiences of parents with children with SDs, future research could use explicit inclusion criteria to gain a clearer understanding of parents facing sleep issues in the home. I initially hoped to recruit parents whose children had SDs by contacting

charities and support groups who provide parental sleep support however, this was often met with no response. Thus, it may be of benefit for future research to work with a sleep clinic, charity, or health practice to recruit parents who are seeking support for their child's sleep.

Part B: Critical account of the research practitioner

8. Quantitative and qualitative design

Despite some researchers arguing that quantitative and qualitative methods should not be used together due to representing different research positions (Robson, 2015), I felt that utilising both methods in my research supported the research questions that I was developing. The depth and breadth of the CS literature highlighted the many ways sleep can impact both the child and surrounding systems, thus I felt it was essential to explore both the knowledge and experiences of participants. This was of particular importance when considering that this research was the first to explore the role of the EP and CS. Therefore, it was important to collect both quantitative and qualitative data to allow a deeper understanding of the ways participants viewed CS and their experiences and knowledge of the topic area.

Quantitative research is reported to represent a positivist epistemology as it focuses on generalising conclusions, prioritising objectivity, and measuring data to identify norms (Makrakis & Kostoulas-Makrakis, 2016). In line with my research questions, I felt quantitative data collection would identify sleep knowledge amongst systems and what percentages of participants had and/or wanted to receive training. I used Likert scales and tick box questions to generate percentages within the participant groups to explore what conclusions could be made about the participant sample.

Qualitative research, on the other hand, is often linked to interpretivist or constructivist epistemologies, where views are interpreted and subjective (Braun & Clarke, 2013). I felt it was important to use qualitative measurements which included open long answer questions that allowed participants to express their perceptions, views, and justifications of thoughts. This allowed me to generate themes from the data source and explore individual and group experiences of sleep in far more detail. Using open ended questions allowed me to explore how participants have experienced CS, how they have been supported, and how they would like to be supported in the future.

Despite criticisms of a mixed method approach, it has been suggested to provide a comprehensive view of situations (Howe, 1988), and allow for the triangulation of data which can improve validity and allow for better exploration from the researcher (Breakwell, Smith, & Wright, 2012). Therefore, I felt that a mixed method design would allow for a more holistic view of the three systems' knowledge, experience and views on CS, which supports the critical realist epistemological position of this research.

9. Research positioning

It has been posited that a researcher must acknowledge her/his ontological and epistemological position as one that is in line with the methodology chosen (Darlaston-Jones, 2007). Due to my view of sleep being an occurrence that every human experiences, however the nature of this reality evidently differs across groups, cultures, and societies; I felt that a critical realist stance was most relevant for my research. Due to this critical realist view of sleep, I felt it was important to employ a mixed methodology approach to gather both knowledge and perceptions from the participants. In line with this, critical realism has been stated to be one of the most inclusive ontological positions, as it allows for differing views from many complex positions (Bhaskar & Danermark, 2006). I felt that this approach would prevent me from relying singularly on quantitative or qualitative data, instead focusing on triangulation of the data to demonstrate the themes, knowledge, and perceptions of the participants. This resonated with me when conducting my literature review as I encountered an abundance of literature exploring how sleep can impact many systems around the child. It also became evident that people's views and understanding of sleep varied greatly amongst professions, cultures and age ranges. Therefore, I felt that a critical realist position was best suited to the research as it would allow an exploration of the objective reality and truth of sleep amongst participants, whilst also considering the subjective and differing experiences of individuals.

Whilst reading the CS literature and planning my literature review, I considered different research positions to ensure I was exploring which stance would be best suited for the research questions I was developing. Due to sleep being a physical requirement for human functioning (McEwen & Karatsoreos, 2015), I initially questioned a positivist stance. Such a position views reality as universal and quantifiable, with a focus on an individual having a passive experience of reality.

However, when considering the research on how systemic change from parents, school, government policies, technology, education, and health can impact sleep across multiple levels, it was apparent that people and systems can impact the sleep situation. Therefore, a positivist stance did not fit with this research as it did not consider the many levels in which people can change and alter sleep, and how individual differences (for example child health, or parental cognitions) could impact CS.

A research positioning that is in opposition to positivism, is social constructionism. This approach views individuals and groups as constructing their own meaning, suggesting that no meaning or reality exists objectively but it is constructed to make sense of experiences (Burr, 2003). I considered how this approach may fit with my research as it demonstrates how different professions, cultures, and systems may view sleep. However, it was not felt to be appropriate due to the process of sleep itself being a reality that is required for survival, which does not fit with the constructionist view of reality being constructed. Therefore, considering the limitations identified with both positivism and social constructionism, I felt that critical realism acknowledged areas from both approaches.

Critical realism embodied the positivist stance of there being a reality of sleep and that it is a process that all humans require. It also accepted the concept that social and cultural differences would impact participants' perceptions and views, which was in line with social constructionism. Therefore, I felt that critical realism embodied the research position that was best suited to the research questions I was creating and the methodology I was going to use.

Additionally, Critical realism assumes that reality is composed of different levels which cannot be measured directly, which include the biological, psychological, social and cultural levels in which we experience (Wikgren, 2005). Such an idea that social phenomena cannot be described by processes at one level, tied in with my literature review drawing on a developmental ecological systems perspective and exploring the bi-directional impact that CS and the surrounding systems can have on one and other. This allowed me to explore the different social structures and interpretations around sleep whilst considering the different levels that impact an individual's experience.

10. Methodology

Whilst writing the literature review I debated which methodology I was going to use and how I would collect my data. Initially, I read a large number of studies focusing on parental stress associated with CSDs (Lam, Hiscock, & Wake, 2003; Morrell & Steele, 2003; Moore, Gordon, & McLean 2012). Consequently, I felt it may be appropriate to use the Parenting stress index-short form (Abidin, 1995) to measure parental stress associated with CSDs. However, over time I began to notice gaps in the literature with no research collecting the views and experiences of CS from EPs or school staff. Therefore, I felt that it would be more beneficial to use a mixed method design to collect the views, experiences, and knowledge of the three systems around the child that EPs encounter in their daily work. I reflected that focusing on parental stress was an area that had already been explored and it would limit the data and research to one specific area. I also reflected on how findings on parental stress could influence and impact the EP role, and felt that a more general understanding of the systems' experience, views, and knowledge would allow for a better understanding of how EPs could potentially support CS.

During the process of writing my literature review, I began to devise research questions that I wanted to explore. I designed my own questions as I could not identify a questionnaire that would gain a broad understanding of participants' views and experiences, and I did not want to limit my data. I also felt that using a pre-devised questionnaire would go against my epistemological stance as it could prevent participants from explaining the reasons behind their views and limit the generation of themes. Nonetheless, I was aware that using a standardised questionnaire is considered to be a reliable and valid measurement tools (Dardas & Ahmad, 2014). Therefore, I kept the reliability and validity limitation in mind when designing my own questions to try and prevent leading questions from impacting responses.

On reflection, I think it would have been advantageous to have used factual statements about sleep and asked participants to select whether they thought these were true or false. This could have limited social desirability bias of participants selecting advantageous responses, and therefore gained a more accurate understanding of the participants' knowledge and understanding of sleep. This style of Likert questions did not objectively measure participants' knowledge about sleep, instead identifying

whether they felt they understood the questioned area of sleep. This created validity issues as participants may have felt knowledgeable, but due to previous studies identifying limitations in parental knowledge of sleep (McDowall et al., 2017), and issues arising with the sleep duration knowledge within this study, it is important to consider that the results from these statements cannot be measured objectively.

11. Data analysis

When considering data analysis, I wanted to explore the different techniques, considering strengths and limitations as well as which was most in line with my epistemological stance. I first decided that I would use descriptive statistics to analyse my quantitative data. When considering what it was I hoped to measure, how my questionnaire would be structured, and what my research questions were, I noted that my focus was to describe the research findings within each participant group. I wanted to generate percentages and descriptive statistics that clearly represented the number of participants from each group that had experienced each statement or held a certain view. Through using descriptive statistics, I was able to notice patterns and compare these between the different participant groups. As no data had explored these three participants groups' views and experiences of CS before, it seemed important for descriptive statistics to clearly provide an overview of the knowledge base, views, and thoughts about CS within each group.

Additionally, qualitative data was collected for this study to provide a more subjective exploration of individual's thoughts and experiences. I decided to use thematic analysis due to its flexible approach and ability to identify, analyse and report patterns within the data set (Braun & Clarke, 2006). Importantly, thematic analysis has also been described as an adaptable tool that can be used flexibly across epistemological positions (Braun & Clarke, 2006). This was important for me as I wanted to ensure that the method of data analysis was in line with my critical realist positioning. I took an inductive approach to the analysis as I was interested in what themes and ideas emerged from the data and was governed by the literature review and research questions I had generated. I was also interested in identifying new information that had not been identified in the literature review, particularly as this area had not been researched before. Therefore, I felt an inductive approach was best suited due to no existing theory or research exploring this area. In relation to the analysis used when

identifying codes, I analysed the codes at a semantic level due to my interest in generating and summarising participants' experiences, views and beliefs. I wanted to present the findings as a descriptive account of the participants' experiences and views about sleep so felt that semantic analysis would allow me to clearly represent and generate the ideas from within the data. I did not feel that latent analysis would be appropriate or in line with my ontological stance, as it focuses on the researcher making assumptions about the data and inferring reasoning (Foltz, 1996). I did not feel that this was appropriate as I was unable to verify these inferences or meanings with participants.

Thematic analysis was also felt to be appropriate due to the large number of participants recruited which generated a large amount of data. I felt that an analysis method such as Interpretive Phenomenological Analysis (IPA) would not be appropriate due to the focus on unpicking individuals' personal perceptions and experiences and exploring how each participant makes sense of her/his personal and social world (Smith & Osbourn, 2015). This would have not been appropriate due to the large number of participants (397) preventing time for in-depth exploration of each participant's experience, and an online questionnaire format would not allow for deeper exploration of participant perceptions. I felt that this approach would be more appropriate if using semi-structured interviews with a small number of participants to explore their experience of sleep. However, using IPA and semi-structured interviews would not allow for an in-depth exploration of both quantitative and qualitative data as mentioned previously, due to IPA being linked to an interpretivist epistemology (Glaser, 1992), and semi-structured interviews collecting qualitative data. Therefore, on reflection, I felt that thematic analysis was suitably chosen in line with my research aims and positioning.

Due to having three separate questionnaires for my three participant groups, I individually coded each questionnaire, question by question. This allowed me to fully immerse myself in each data set and therefore generate codes and themes for each participant group, which in turn could be compared and contrasted between groups.

12. Summary

In summary, conducting this research greatly enhanced my knowledge of CS with a particular focus on how I could incorporate this knowledge and understanding into my role. It also allowed me to consider ways that school staff and parents wish to be supported and how they hope for this support to look. This caused me to consider the importance of identifying how systems want to be supported when working with them and asking what the systems' goals are from the outset. The process of conducting research also encouraged me to value the research process in stimulating thoughts, reflecting on findings, and continuing to learn and expand in the EP profession. I have learnt the importance of immersing myself in the literature when researching a topic, to clearly identify gaps and therefore, generate research questions and aims. This process has allowed me to focus on research as an extensive process that develops over time, and not one to be pre-planned before a holistic understanding of the existing literature has taken place. My initial ideas about research questions, epistemological stances and methodologies all changed over time as I narrowed and refined my research questions, to ensure all reflected my chosen epistemology.

On reflection. I thoroughly enjoyed the process and feel strongly that research is an important part of the EP role which not only leads to the researcher learning and reflecting on her own practice, but can also generate questions that may lead to systemic shifts within the profession.

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14.Appendices

Appendix A. Literature search process

Database	Topic area	Key words	Results	Process	Refined by
Articles & more	Child sleep generally	Child AND Sleep AND Primary School AND Sleep deprivation OR Sleep difficulties	152	Read through abstracts of article titles that were appropriate and made notes on child sleep in general. Also made notes of further studies that were mentioned that were of interest and relevant to proposed research questions.	Refined by 1998-2018 to acquire journals written in the last 20 years (139). Read and made notes on studies that focused on child sleep or how child sleep impacts upon or is impacted by school (82).
Articles & more	Child sleep including teachers and/or parents	Parents OR Teacher OR Parental AND Child AND Sleep AND Primary School AND Sleep deprivation OR Sleep difficulties	63	Read through abstracts in which titles included child sleep and parent or teacher and added relevant journal references to my excel spreadsheet to read and make notes on.	
Articles & more	Child sleep and educational psychologist	Educational psychologist OR EP OR School Psychologist AND Sleep deprivation OR Sleep difficulties	48	Read through titles and abstracts to identify any studies that linked or studies child sleep and the EP or school	Refined to two studies that were both reviews (one British and one American).

		And Child AND sleep difficulties		psychologist role.	

Initially I took a systematic approach to my data gathering when first reading around the topic of child sleep. At first I searched for journals that focused on child sleep and school to get a general understanding of the literature around child sleep and the link this may have to schooling and education. Next I performed another search looking at the above search terms alongside parents and teachers to explore the research on child sleep and any links or explorations with parents and schools. Lastly, I wanted to find out what previous research had explored the EP or school psychologist role and child sleep. It was evident through my searches that no research studies had explored this area, instead two review papers had advocated the potential role of the EP and school psychologist supporting child sleep.

Through this systematic search I refined the search down using data from the past two decades and ensured the journals were relevant to child sleep and ways that schools, parents or EPs could support or understand child sleep further.

From this list of journals I then compiled a bank of journal articles in an excel spreadsheet that were ordered by topic area such as parental mood and child sleep. I then familiarised myself with the data source and journals I had found through my original search and added references to the excel spreadsheet through both a backward and forward referencing search.

Due to the large number of topic areas linked to child sleep, of which many appeared to be linked to the systems around the child, it seemed important to apply a structure to the literature I had compiled. Therefore, I was inspired by El-Sheikh and Sadeh's (2015) developmental ecological system's theory approach to child sleep, as it was apparent that there were multiple levels at which sleep could impact a child and the systems around her/him. The abundance of data and fact that no research had been conducted on EPs and child sleep lent to a narrative and explorative approach, to ensure that a wide exploration of the data could be utilised and reported. Therefore, I used a backward chain approach to ensure I became fully immersed in the data set and was able to research and learn about areas that I may not have found using a systematic search method which may have limited my reading.

Appendix B. Explanation of bedtime pass

Bedtime pass programmes are used to encourage a child to sleep in their own bed and work towards them being more independent during the night. As described by Moore, Friman and Fruzzetti (2007) a child is encouraged to get into their own bed and is given a card which they can use to exchange for one trip out of their bed in the night for an acceptable request such as a hug or a drink. The child then surrenders the pass and returns to their own bed.

Appendix C. Information sheet for educational psychologists

This research project is interested in obtaining the perceptions of educational psychologists on child sleep difficulties in primary school aged children, to find out your views and experience of working with children who present with sleep difficulties. You will be presented with questions regarding your experience and views of working with child sleep difficulties.

Findings from the research will be reported in a research paper that will be available to participants on request. The research findings of this study may be published.

The study should take you around 20-25 minutes to complete, and is for educational psychologists (including trainee educational psychologists) . If you would like to contact the researcher to discuss this research, please e-mail FurlongSG@cardiff.ac.uk.

By clicking the button below you agree to the following:

- I am aged 18 years of age or older
- I understand that my participation in this project is voluntary and that I may withdraw from this study at any point whilst completing the questionnaire. However I understand that I will be unable to withdraw my data once I submit my responses due to the anonymous nature of the data (the data will not be able to be traced back to me).
- I understand that I do not have to answer any questions that I do not wish to.
- I understand that the information provided by me will be held anonymously (none of the information I give will be able to be traced back to me) as no names will be collected for this research.
- I understand that this research is being conducted through Cardiff University and may be published.
- I understand at the end of the study I will be provided with additional information and feedback about the purpose of the study.

Please note that this survey will be best displayed on a laptop or desktop computer. Some features may be less compatible for use on a mobile device.

Appendix D. Information sheet for school staff

This research project is interested in obtaining the perceptions of primary school staff on child sleep difficulties in primary school aged children, to find out your views and experience of working with children who present with sleep difficulties. You will be presented with questions regarding your experience and views of working with child sleep difficulties.

Findings from the research will be reported in a research paper that will be available to participants on request. The research findings of this study may be published.

The study should take you around 20-25 minutes to complete, and is for school staff who work with primary school aged children aged 4-11 years. If you would like to contact the researcher to discuss this research, please e-mail FurlongSG@cardiff.ac.uk.

By clicking the button below you agree to the following:

- I am aged 18 years of age or older
- I understand that my participation in this project is voluntary and that I may withdraw from this study at any point whilst completing the questionnaire. However I understand that I will be unable to withdraw my data once I submit my responses due to the anonymous nature of the data (the data will not be able to be traced back to me).
- I understand that I do not have to answer any questions that I do not wish to.
- I understand that the information provided by me will be held anonymously (none of the information I give will be able to be traced back to me) as no names will be collected for this research.
- I understand that this research is being conducted through Cardiff University and may be published.
- I understand at the end of the study I will be provided with additional information and feedback about the purpose of the study.

Please note that this survey will be best displayed on a laptop or desktop computer. Some features may be less compatible for use on a mobile device.

Appendix E. Information sheet for parents/primary caregivers

This research project is interested in obtaining the perceptions of parents/ primary caregivers on child sleep difficulties in children aged 4-11 years, to find out your views and experience around your child's sleep behaviour. You will be presented with questions regarding your experience and views of child sleep difficulties.

Findings from the research will be reported in a research paper that will be available to participants on request. The research findings of this study may be published.

The study should take you around 20-25 minutes to complete, and is for parents/ primary caregivers of children aged 4-11 years. If you would like to contact the researcher to discuss this research, please e-mail FurlongSG@cardiff.ac.uk.

By clicking the button below you agree to the following:

- I am aged 18 years of age or older
- I understand that my participation in this project is voluntary and that I may withdraw from this study at any point whilst completing the questionnaire. However I understand that I will be unable to withdraw my data once I submit my responses due to the anonymous nature of the data (the data will not be able to be traced back to me).
- I understand that I do not have to answer any questions that I do not wish to.
- I understand that the information provided by me will be held anonymously (none of the information I give will be able to be traced back to me) as no names will be collected for this research.
- I understand that this research is being conducted through Cardiff University and may be published.
- I understand at the end of the study I will be provided with additional information and feedback about the purpose of the study.

Please note that this survey will be best displayed on a laptop or desktop computer. Some features may be less compatible for use on a mobile device.

Appendix F. Gatekeeper letter for Principal educational psychologists to recruit EPs

Dear (Insert Name),

I am a trainee educational psychologist who is currently studying on the Educational Psychology doctorate at Cardiff University. As part of the doctorate, I am researching educational psychologists' perceptions and experience of child sleep difficulties in primary school aged children. I am writing to enquire whether you would be willing to give me permission to recruit educational psychologists from your service to be involved in this research.

The aim of this research is to understand the perceptions and experience of educational professionals, parents and educational psychologists on child sleep difficulties in primary school aged children. Three online questionnaires will obtain the views and experience from the three groups of participants.

The research would involve educational psychologists completing the online questionnaire which should take between 20-25 minutes to complete. The information will be confidential due to no identifying information being collected.

I would be really grateful if you could please inform your staff about this research to identify if any educational psychologists would be willing to take part. To this end I have enclosed the link to the questionnaire in the email. Findings from the research will be reported in a research paper available to all participants on request, but will be anonymised so that participants' views cannot be traced back to them.

Many thanks in advance for your consideration of this project. Please let me know if you require further information.

Kindest Regards,

Sylvie Furlong

Names of Researchers	Sylvie Furlong
Address	School of Psychology, Cardiff University, Tower Building, Park Place, Cardiff, CF10 3AT
Contact Number	02920 876497
Email	Sylvie Furlong: FurlongSG@cardiff.ac.uk
Research supervisor	Dr Simon Claridge: ClaridgeS@cardiff.ac.uk
Cardiff University Ethical Commitee	The research project has been approved by the ethics committee at Cardiff University. Any complaints should be made to: Secretary of the Ethics Committee, School of Psychology, Cardiff University, Tower Building, Park Place, Cardiff, CF10 3AT Contact Number: 02920 870 360 Email: psychethics@cardiff.ac.uk

Appendix G. Gatekeeper letter for headteachers to recruit educational professionals and parents/primary caregivers

Dear (Insert Name),

I am a trainee educational psychologist who is currently studying on the Educational Psychology doctorate at Cardiff University. As part of the doctorate, I am researching educational professionals' perceptions and experience of child sleep difficulties in primary school aged children. I am writing to enquire whether you would be willing to give me permission to recruit staff from your school, and parents of the children that attend your school to be involved in this research.

The aim of this research is to understand the perceptions and experience of educational professionals, parents and educational psychologists on child sleep difficulties in primary school aged children. Three online questionnaires will obtain the views and experience from the three groups of participants.

The research would involve school staff that work with primary school children and their parents completing an online questionnaire which should take between 20-25 minutes to complete. The information will be confidential due to no identifying information being collected.

I would be really grateful if you could please inform your staff and parents about this research to identify if any of your school staff or parents would be willing to take part. To this end I have enclosed the link to both questionnaires in the email. Findings from the research will be reported in a research paper available to all participants on request, but will be anonymised so that participants' views cannot be traced back to them.

Many thanks in advance for your consideration of this project. Please let me know if you require further information.

Kindest Regards,

Sylvie Furlong

Names of Researchers	Sylvie Furlong
Address	School of Psychology, Cardiff University, Tower Building, Park Place, Cardiff, CF10 3AT
Contact Number	02920 876497
Email	Sylvie Furlong: FurlongSG@cardiff.ac.uk
Research supervisor	Dr Simon Claridge: ClaridgeS@cardiff.ac.uk
Cardiff University Ethical Commitee	The research project has been approved by the ethics committee at Cardiff University. Any complaints should be made to: Secretary of the Ethics Committee, School of Psychology, Cardiff University, Tower Building, Park Place, Cardiff, CF10 3AT Contact Number: 02920 870 360 Email: psychethics@cardiff.ac.uk

Appendix H. Gatekeeper letter for admin/websites to recruit parents/primary caregivers

Dear (Insert Name),

I am a trainee educational psychologist who is currently studying on the Educational Psychology doctorate at Cardiff University. As part of the doctorate, I am researching educational professionals' perceptions and experience of child sleep difficulties in primary school aged children. I am writing to enquire whether you would be willing to give me permission to recruit parents for this research through your website/chat forum.

The aim of this research is to understand the perceptions and experience of educational professionals, parents and educational psychologists on child sleep difficulties in primary school aged children. Three online questionnaires will obtain the views and experience from the three groups of participants.

The research would involve parents of children who are currently attending primary school completing an online questionnaire which should take between 20-25 minutes to complete. The information will be confidential due to no identifying information being collected.

I would be really grateful if you could please allow me to post the link to the online questionnaire on your website/chat forum to recruit parents to take part in this research. To this end I have enclosed the link to the questionnaire in the email. Findings from the research will be reported in a research paper available to all participants on request, but will be anonymised so that participants' views cannot be traced back to them.

Many thanks in advance for your consideration of this project. Please let me know if you require further information.

Kindest Regards,

Sylvie Furlong

Names of Researchers	Sylvie Furlong

Address	School of Psychology, Cardiff University, Tower Building, Park Place, Cardiff, CF10 3AT
Contact Number	02920 876497
Email	Sylvie Furlong: FurlongSG@cardiff.ac.uk
Research supervisor	Dr Simon Claridge: ClaridgeS@cardiff.ac.uk
Cardiff University Ethical Commitee	The research project has been approved by the ethics committee at Cardiff University. Any complaints should be made to: Secretary of the Ethics Committee, School of Psychology, Cardiff University, Tower Building, Park Place, Cardiff, CF10 3AT Contact Number: 02920 870 360 Email: psychethics@cardiff.ac.uk

Appendix I. Consent form for EPs

This research project is interested in the perceptions of educational psychologists on child sleep difficulties in primary school aged children. You will be presented with questions regarding your experience and views of working with children with sleep difficulties. The study should take you around 20-25 minutes to complete, and is for educational psychologists (including trainee educational psychologists) . If you would like to contact the researcher to discuss this research, please e-mail FurlongSG@cardiff.ac.uk.

By clicking the button below you agree to the following:

- I am aged 18 years of age or older
- I understand that my participation in this project is voluntary and that I may withdraw from this study at any point whilst completing the questionnaire. However I understand that I will be unable to withdraw my data once I submit my responses due to the anonymous nature of the data (the data will not be able to be traced back to me).
- I understand that I do not have to answer any questions that I do not wish to.
- I understand that the information provided by me will be held anonymously (none of the information I give will be able to be traced back to me) as no names will be collected for this research.
- I understand that this research is being conducted through Cardiff University and that the findings will be reported in a research paper that will be available on request. The research may be published.
- I understand that at the end of the study I will be provided with additional information and feedback about the purpose of the study.

  Please note that this survey will be best displayed on a laptop or desktop computer. Some features may be less compatible for use on a mobile device.

○ I consent, begin the study

Appendix J. Questionnaire for EPs

Perceptions of educational psychologists on child sleep difficulties in primary school aged children

Q2 Please indicate your highest formal EP training

- ○ Doctorate of Educational Psychology (1)
- ○ Masters of Educational Psychology (2)
- ○ In training (3)
- ○ Other (4)

Q3 What is your gender?

- ○ Male (1)
- ○ Female (2)

Q4 What is your current professional position?

- ○ Trainee year 1 (1)
- ○ Trainee year 2 (2)
- ○ Trainee year 3 (3)
- ○ Educational psychologist working privately
- ○ Top up doctoral student (4)
- ○ Qualified main grade educational psychologist (5)
- ○ Senior educational psychologist (6)
- ○ Principle educational psychologist (7)

Page Break

Q5 How many years' experience do you have as a qualified educational psychologist?

- ○ Not yet qualified (1)
- ○ 0-3 years (2)
- ○ 4-6 years (3)
- ○ 7-10 years (4)
- ○ 11-14 years (5)
- ○ 15 years + (6)

Q6 Which local authority region do you currently work in?

- ○ South West England (1)
- ○ South East England (2)
- ○ Greater London (3)
- ○ East Midlands (4)
- ○ Yorkshire and the Humber (5)
- ○ North West England (6)
- ○ North East England (7)
- ○ Scotland (8)
- ○ Northern Ireland (9)
- ○ Wales (10)

Q7 Please rate the following statements based on your own experience from 0-5 (strongly disagree to strongly agree)

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
I often encounter children that have difficulties with sleep/sleepiness in school (1)	○	○	○	○	○
I often work with parents who express concern over their child's sleep/ lack of sleep (2)	○	○	○	○	○
I often work with teachers who express a concern over a child's/ children's tiredness in school (3)	○	○	○	○	○
I often ask parents about a child's sleep routine during a consultation (4)	○	○	○	○	○
I often talk to parents who are concerned about their child's use of screens (Ipads, phones, tablets, TVs) before bed (5)	○	○	○	○	○
Parents that I work with often express a concern about getting their child to sleep (6)	○	○	○	○	○

Q8 Please rate the following statements based on your own experience from 0-5 (strongly disagree to strongly agree)

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
I believe that working with families and schools to address sleep issues **is** a part of the educational psychologist's role (1)	○	○	○	○	○
I believe that working with families and schools to address sleep issues **should** be a part of the educational psychologist's role (2)	○	○	○	○	○
I feel confident to advise/talk to parents about the impact of sleep on child development (3)	○	○	○	○	○
I feel confident to advise/talk to parents about the importance of sleep hygiene for children (4)	○	○	○	○	○
I feel confident to offer strategies to parents who are concerned with their child's sleep (5)	○	○	○	○	○

I understand the impact of different developmental disorders (e.g. autism, ADHD) on sleep (6)	○	○	○	○	○
During my educational psychology training, sleep disorders and the impact of sleep on child development was discussed (7)	○	○	○	○	○
I feel that it is important for the educational psychology doctoral courses to cover sleep and child sleep related difficulties (8)	○	○	○	○	○

Page Break

Q9 Please rate the following statements based on your own experience from 0-5 (strongly disagree to strongly agree)

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
My Educational Psychology Service has resources available to support parents with their child's sleep difficulties (1)	○	○	○	○	○
My Educational Psychology Service has resources available to support schools with sleep difficulties (2)	○	○	○	○	○
My Educational Psychology Service provides training for schools and/or parents on sleep behaviour and/or difficulties (3)	○	○	○	○	○
I have received training on child sleep behaviour through the Educational Psychology Service that I work for (4)	○	○	○	○	○

Q10 Please rate the following statements based on your own experience from 0-5 (strongly disagree to strongly agree)

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
I feel confident in talking to service users about sleep cycles and recommended sleep times (1)	○	○	○	○	○
I understand what sleep associations are (2)	○	○	○	○	○
I talk to parents about sleep associations to help with children's sleep (3)	○	○	○	○	○
I understand what the gradual retreat/adult fading method is (4)	○	○	○	○	○
I talk to parents about the gradual retreat/ adult fading method to help with children's sleep (5)	○	○	○	○	○
I understand what the gradual extinction method is (6)	○	○	○	○	○
I talk to parents about the gradual extinction method to help with children's sleep (7)	○	○	○	○	○

I talk to parents about sleep inducing foods to give to their child before bedtime (8)	○	○	○	○	○
I would like to receive training/ CPD on sleep problems and strategies to help children and families (9)	○	○	○	○	○

Q11 From my experience when parents have concerns around their child's sleep they seek help from the following:

- ○ Doctor/GP (1)
- ○ Health Visitor (2)
- ○ Educational Psychologist (3)
- ○ School (4)
- ○ Sleep clinic/workshop (5)
- ○ Family (6)
- ○ Friends (7)
- ○ Internet (8)
- ○ Other (9)

Q12 Who do you believe is best suited to offer help and advice to parents/families when they have difficulties with their child's sleep and why?

_____

Q13 How many hours of sleep do you believe the following aged children should get a night?

	Hours of sleep a night (1)
4 year old child (1)	
7 year old child (2)	
9 year old child (3)	
11 year old child (4)	

Page Break

Q14 What do you feel are the main reasons that children have sleep difficulties or do not get enough sleep?

_____

Q15 How do you think parents could help children to develop a better sleep routine?

_____

Q16 How do you think schools could help children to develop a better sleep routine?

_____

Q17 How do you think educational psychologists could help children and families to develop a better sleep routine?

_____

Appendix K. Consent form for parents

This research project is interested in the perceptions of parents on child sleep difficulties in primary school aged children. You will be presented with questions regarding your experience and views of child sleep difficulties. The study should take you around 20-25 minutes to complete, and is for educational psychologists (including trainee educational psychologists) . If you would like to contact the researcher to discuss this research, please e-mail FurlongSG@cardiff.ac.uk.

By clicking the button below you agree to the following:

- I am aged 18 years of age or older and am a parent or primary caregiver of a child aged between 4-11 years.
- I understand that my participation in this project is voluntary and that I may withdraw from this study at any point whilst completing the questionnaire. However I understand that I will be unable to withdraw my data once I submit my responses due to the anonymous nature of the data (the data will not be able to be traced back to me).
- I understand that my participation in this project is voluntary and that I may withdraw from this study at any point whilst completing the questionnaire. However I understand that I will be unable to withdraw my data once I submit my responses due to the anonymous nature of the data (the data will not be able to be traced back to me).
- I understand that I do not have to answer any questions that I do not wish to.
- I understand that the information provided by me will be held anonymously (none of the information I give will be able to be traced back to me) as no names will be collected for this research.
- I understand that this research is being conducted through Cardiff University and that the findings will be reported in a research paper that will be available on request. The research may be published.
- I understand that at the end of the study I will be provided with additional information and feedback about the purpose of the study.

Please note that this survey will be best displayed on a laptop or desktop computer. Some features may be less compatible for use on a mobile device.

○ I consent, begin the study

Appendix L. Questionnaire for parents

Perceptions of parents on child sleep difficulties in primary school aged children

Q2 What is your gender?

- ○ Male (1)
- ○ Female (2)

Q3 Please specify your age

- ○ 18-25 (1)
- ○ 26-30 (2)
- ○ 31-35 (3)
- ○ 36-40 (4)
- ○ 41-45 (5)
- ○ 46-50 (6)
- ○ 50+ (7)

Q4 Which region in the UK do you currently live in?

- ○ South West England (1)
- ○ South East England (2)
- ○ Greater London (3)
- ○ West Midlands (4)
- ○ East Midlands (5)
- ○ Yorkshire and the Humber (6)
- ○ North West England (7)
- ○ North East England (8)
- ○ Scotland (9)

- ○ Northern Ireland (10)
- ○ Wales (11)

Page Break

Q5 What is your marital status?

- ○ Single (1)
- ○ Living with partner (2)
- ○ Married (3)
- ○ Divorced (4)
- ○ Separated from partner (5)
- ○ Widowed (6)

Q6 What is the highest level of education you have obtained?

- ○ No qualifications (1)
- ○ GCSE's (or equivalent) (2)
- ○ Level 3 Diploma (3)
- ○ A Levels (or equivalent) (4)
- ○ Foundation degree (5)
- ○ University degree (6)
- ○ Masters degree (7)
- ○ PhD or Doctorate (8)

Q7 How many children do you have?

▼ 1 (1) ... 6+ (6)

Q8 What is your relationship to the child/children in your house?

- ○ Biological mother (1)
- ○ Biological father (2)
- ○ Step mother (3)
- ○ Step father (4)
- ○ Adoptive mother (5)
- ○ Adoptive father (6)
- ○ Other (please specify below) (7)

Q9 If 'other' please specify your relationship to the child/children in your house?

_____

Page Break

Q10 Please specify the number of male and female children in your household that you currently care for

_____ Male children (1)
_____ Female children (2)

Q11 Please specify the number of children that you have of the following ages

4 year old (1)	▼ 1 (1) ... 3+ (3)
5 year old (2)	▼ 1 (1) ... 3+ (3)
6 year old (3)	▼ 1 (1) ... 3+ (3)
7 year old (4)	▼ 1 (1) ... 3+ (3)
8 year old (5)	▼ 1 (1) ... 3+ (3)
9 year old (6)	▼ 1 (1) ... 3+ (3)
10 year old (7)	▼ 1 (1) ... 3+ (3)
11 year old (8)	▼ 1 (1) ... 3+ (3)

Q12 Does your child or any of your children have a diagnosed disorder or disability? Please give details below

_____

Q13 Does your child have a Statement of special educational need/ Education and Health Care Plan?

- ○ Yes (1)
- ○ No (2)
- ○ An application is currently in place (3)

Page Break

Q14

If you have more than one child please answer the following questions about the child who has the most difficulty with sleep in mind

Does your child experience any of the following? Please select all that apply

- [ ] Falling asleep in the day (1)
- [ ] Trouble falling asleep at night (2)
- [ ] Waking at night (3)
- [ ] Waking at night and unable to return to sleep on their own (4)
- [ ] Sleep terrors (5)
- [ ] Nightmares (6)
- [ ] Not getting enough sleep (7)
- [ ] Becoming upset or anxious before bedtime (8)
- [ ] Crying for a parent/caregiver during the night (9)

Q15 Have you ever sought help in regards to your child's sleep?

- ○ Yes (1)
- ○ No (2)
- ○ I have considered it (3)

Q16 If yes who did you seek help from?

_____

Q17 Have you ever received help or advice about your child's sleep from any of the following ?

- [ ] Doctor/GP (1)
- [ ] Health visitor (2)
- [ ] School/Nursery (3)
- [ ] Clinical psychologist
- [ ] CAMHS (Child and Adolescent Mental Health Services)
- [ ] Educational Psychologist (4)
- [ ] Internet page or group (5)
- [ ] Friends (6)
- [ ] Family (7)
- [ ] Other (8)

Q18 If other who did you receive help or advice from?

_____

Page Break

Q19 Who do you think is best suited to provide help and support for your child's sleep difficulty?

- ○ Doctor/GP (1)
- ○ Health visitor (2)
- ○ School/Nursery (3)
- ○ Clinical Psychologist
- ○ CAMHS (Child and Adolescent Mental Health Services)
- ○ Educational Psychologist (4)
- ○ Internet page or group (5)
- ○ Friends (6)
- ○ Family (7)
- ○ Other (8)

Q20 If other who do you think is best suited to provide help and advice on child sleep difficulties?

_____

Q21 Is your child currently on medication to help her/him sleep?

- ○ Yes (1)
- ○ No (2)
- ○ Previously (3)

Q22 Does your child’s school provide any advice on sleep routines and ways to help your child sleep?

- ○ Yes (1)
- ○ No (2)
- ○ Not sure (3)

Q23 If yes please specify what advice your child's school provides?

_____

Q24 If no would you be interested in receiving advice on sleep routines from your child's school?

- ○ Yes (1)
- ○ No (2)
- ○ Not sure (3)

Q25 Would you attend a sleep workshop or training on child sleep if it was made available to you?

- ○ Yes (1)
- ○ No (2)
- ○ Not sure (3)

Q26 On average how many hours of sleep does your child get each night? Please specify your child's age and average number of hours sleep she/he gets a night

- ○ Child's age (1) _____
- ○ Average number of hours sleep your child gets a night (2) _____

Q27 What is your child's usual bed time and wake time on an average weekday?

- ○ Child's usual bed time (1) _____
- ○ Child's usual wake time (2) _____

Q28 Do any of the following help your child to fall asleep?

- ☐ Watching TV (1)
- ☐ Watching or playing with an iPad or tablet (2)
- ☐ Using a comforter/toy (3)
- ☐ Dummy (4)
- ☐ Listening to music (5)
- ☐ Having milk/drink as she/he falls asleep (6)
- ☐ Lying next to a parent or family member in bed (7)
- ☐ Sleeping in parent's bed (8)
- ☐ Other (9)

Q29 If other please specify below

_____

Q30 Has your child's school ever contacted you with concerns about your child being tired or falling asleep when at school?

- Yes (1)
- No (2)

Q31 If yes please give more detail below

_____

Q32 Has your child ever been seen by an educational psychologist?

- Yes (1)
- No (2)
- They are currently waiting to be seen (3)
- Unsure (4)

Q33 If yes did the educational psychologist discuss your child's sleep difficulty with you or the school?

- Yes (1)
- No (2)
- Not sure (3)

Q34 How many hours of sleep do you believe the following aged children should get a night?

	Hours of sleep a night (1)
4 year old child (1)	
7 year old child (2)	
9 year old child (3)	
11 year old child (4)	

Page Break

Q35 What do you feel are the main reasons that children have sleep difficulties or do not get enough sleep?

_____

Q36 How do you think parents could help children to develop a better sleep routine?

_____

Q37 How do you think schools could help children to develop a better sleep routine?

_____

Q38 How do you think educational psychologists could help children and families to develop a better sleep routine?

_____

Appendix M. Consent form for educational professionals

This research project is interested in the perceptions of educational professionals on child sleep difficulties in primary school aged children. You will be presented with questions regarding your experience and views of working with children with sleep difficulties. The study should take you around 20-25 minutes to complete, and is for educational professionals that work in primary schools . If you would like to contact the researcher to discuss this research, please e-mail FurlongSG@cardiff.ac.uk.

By clicking the button below you agree to the following: · I am aged 18 years of age or older· I am an educational professional working with primary school aged chidren. I understand that my participation in this project is voluntary and that I may withdraw from this study at any point whilst completing the questionnaire. However I understand that I will be unable to withdraw my data once I submit my responses due to the anonymous nature of the data (the data will not be able to be traced back to me).· I understand that I do not have to answer any questions that I do not wish to.· I understand that the information provided by me will be held anonymously (none of the information I give will be able to be traced back to me) as no names will be collected for this research.· I understand that this research is being conducted through Cardiff University and that the findings will be reported in a research paper that will be available on request. The research may be published.· I understand that at the end of the study I will be provided with additional information and feedback about the purpose of the study.
Please note that this survey will be best displayed on a laptop or desktop computer. Some features may be less compatible for use on a mobile device.

I consent, begin the study

Appendix N. Questionnaire for educational professionals

Perceptions of educational professionals on child sleep difficulties in primary school aged children

Q2 What is your gender

- ○ Male (1)
- ○ Female (2)

Q3 Please indicate your current occupation?

- ○ Teacher (1)
- ○ Teaching Assistant (2)
- ○ Special Educational Needs Coordinator (SENCo) (3)
- ○ Headteacher (4)
- ○ Pastoral worker (5)
- ○ Other (please describe in further detail below) (6)

Q4 If you answered 'other' please specify your occupation below

_____

Q5 How long have you worked in schools?

▼ 0-2 years (1) ... 12 years + (5)

Q6 Which local authority region do you currently work in?

1. South West England (1)
2. South East England (2)
3. Greater London (3)
4. West Midlands (4)
5. East Midlands (5)
6. Yorkshire and the Humber (6)
7. North West England (7)
8. North East England (8)
9. Scotland (9)
10. Northern Ireland (10)
11. Wales (11)

Page Break

Q7 In your experience do you often notice children who appear tired in school?

- ○ Yes (please describe in further detail below) (1)
- ○ No (2)
- ○ Sometimes (3)

Q8 If you answered 'yes' please describe how this tiredness affects children in school

_____

Q9 What percentage of the children you work with appear tired or complain of being tired in an average school week?

	Percentage of children 0 10 20 30 40 50 60 70 80 90 100
Children who appear/ complain of being tired (1)	

Q10 Have you ever contacted parents due to a concern over a child's tiredness level in school?

- ○ Yes (please describe in further detail below) (1)
- ○ No (2)

Q11 If you answered 'yes' please describe what the concern was

_____

Q12 Do you have experience of parents contacting yourself or the school due to concerns over their child's sleep at home?

- ○ Yes (please describe in further detail below) (1)
- ○ No (2)
- ○ Not sure (3)

Q13 If you answered 'yes' please describe what the parent's concern was

_____

Page Break

Q14 Does your school provide any support or advice for parents about child sleep difficulties?

- ○ Yes (please describe in further detail below) (1)
- ○ No (2)
- ○ Unsure (3)

Q15 If you answered 'yes' please describe what this support or advice consists of

_____

Q16 Does your school signpost parents to a service that helps with child sleep difficulties?

- ○ Yes (please describe in further detail below) (1)
- ○ No (2)
- ○ Not sure (3)

Q17 If you answered 'yes' please write the name of the service below

_____

Q18 Has your school received any advice on child sleep difficulties from any outside agencies?

- Yes (please describe in further detail below) (1)
- No (2)
- Not sure (3)

Q19 If you answered 'yes' please name the outside agency below

_____

Page Break

Q20 Has your school received any advice on child sleep difficulties from an educational psychologist?

- Yes (1)
- No (2)
- Not sure (3)

Q21 Would you be interested in receiving training on ways your school could support parents and children with sleep difficulties?

- Yes (1)
- No (2)
- Not sure (3)

Q22 How many hours of sleep do you believe the following aged children should get a night?

	Hours of sleep a night (1)
4 year old child (1)	
7 year old child (2)	
9 year old child (3)	
11 year old child (4)	

Q23 From your experience who do parents seek support from when having difficulties with their child's sleep?

12. Doctor/GP (1)
13. Health visitor (2)
14. School (3)
15. Clinical psychologist
16. CAMHS (Child and Adolescent Mental Health Services)
17. Educational Psychologist (4)
18. Internet page/group (5)
19. Friends (6)
20. Family (7)
21. Other (8)

Q24 Who do you think is best suited to provide support for parents whose children are having sleep difficulties?

22. Doctor/GP (1)
23. Health visitor (2)
24. School (3)
25. Educational Psychologist (4)
26. Internet page/group (5)
27. Friends (6)
28. Family (7)
29. Other (8)

Q25 Please rate the following statements based on your own experience from 0-5 (strongly disagree to strongly agree)

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
I often encounter children that have difficulties with sleep/sleepiness in school (1)	○	○	○	○	○
Children that I work with often fall asleep during the day at school (2)	○	○	○	○	○
I speak with parents who express concern over their child's sleep/ lack of sleep (3)	○	○	○	○	○
Staff that I work with express concern over children's tiredness in school (4)	○	○	○	○	○
Parents talk to me about a concern regarding their child's use of screens (Ipads, phones, tablets, TVs) before bed (5)	○	○	○	○	○
Parents express a concern about getting their child to sleep to me (6)	○	○	○	○	○

Q26 Please rate the following statements based on your own experience from 0-5 (strongly disagree to strongly agree)

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
I understand the impact that different developmental disorders (e.g. autism, ADHD) have on sleep (1)	○	○	○	○	○
I believe that the school that I work in provides good support for parents regarding children's sleep (2)	○	○	○	○	○
I believe that the school that I work in should provide support for parents regarding children's sleep (3)	○	○	○	○	○
I think a parents evening that gave advice on sleep routines, strategies, and the importance of child sleep would be beneficial for parents (4)	○	○	○	○	○
I think INSET training for staff on sleep routines, strategies, and the importance of child sleep would be beneficial for school staff (5)	○	○	○	○	○

Page Break

Q27 From my experience of working with children, a perceived lack of sleep affects the following *Please select all that apply*

- ○ Concentration (1)
- ○ Irritability (2)
- ○ Mood (3)
- ○ Effort (4)
- ○ Ability (5)
- ○ Energy levels (6)
- ○ Friendships (7)
- ○ Appetite (8)
- ○ Behaviour (9)
- ○ Clumsiness (10)

Q28 What do you feel are the main reasons that children have sleep difficulties or do not get enough sleep?

_____

Q29 How do you think parents could help children to develop a better sleep routine?

_____

Q30 How do you think schools could help children to develop a better sleep routine?

_____

Q31 How do you think educational psychologists could help children and families to develop a better sleep routine?

_____

Appendix O. Debrief form for educational professionals

Perceptions of educational professionals on child sleep difficulties in primary school aged children

Thank you very much for taking the time to complete this questionnaire.

The aim of this research is to understand the perceptions and experience of educational professionals, parents and educational psychologists (EPs) on child sleep difficulties in primary school aged children. Online questionnaires have sought the perceptions and the experiences of these three groups.

You took part in an online questionnaire where you were asked about your perceptions and experience of working with primary school aged children and their parents/primary caregivers, focusing on sleep difficulties and how these impact children in school.

The researcher believes that there may be a gap in the knowledge of educational professionals, parents and EPs on how sleep difficulties impact children, as well as ways that parents and children can be supported to improve child sleep. It is also felt that there may be a lack of communication and collaborative working between parents, schools and EPs when a child has a sleep difficulty. It is felt that by working collaboratively and sharing important information regarding sleep, the child, parents and school may benefit. The researcher is also interested in identifying whom educational professionals, parents and EPs feel is best suited to provide support for children with sleep difficulties. This may help to identify if there is a need for EPs to work systemically with schools to encourage information to be shared regarding recommended sleep times, sleep hygiene, and behavioural strategies to aid child sleep.

All information that you have provided will be held anonymously (there will be no way that the information you gave can be traced back to you) due to no identifying information such as names being collected during the questionnaire. Due to this you are now unable to withdraw your data from the study due to the data being anonymous and having no named link to any of the participants.

If you have any other questions about the study, please do not hesitate to contact the researcher via the email address below.

Contact Details:

Names of Researchers	Sylvie Furlong
Address	School of Psychology, Cardiff University, Tower Building, Park Place, Cardiff, CF10 3AT
Contact Number	02920 876497
Email	Sylvie Furlong: FurlongSG@cardiff.ac.uk
Research supervisor	Dr Simon Claridge: ClaridgeS@cardiff.ac.uk
Cardiff University Ethical Commitee	The research project has been approved by the ethics committee at Cardiff University. Any complaints should be made to: Secretary of the Ethics Committee, School of Psychology, Cardiff University, Tower Building, Park Place, Cardiff, CF10 3AT Contact Number: 02920 870 360 Email: psychethics@cardiff.ac.uk

If you would like further information on child sleep and ways of managing child sleep problems, you may find the following reference of value:

Galland, B.C. & Mitchell, E.A. (2010). Helping children sleep. *Archives of disease in childhood, 95*, 850-853.

Appendix P. Debrief form for parents/primary caregivers

Perceptions of parents/primary caregivers on child sleep difficulties in primary school aged children

Thank you very much for taking the time to complete this questionnaire.

The aim of this research is to understand the perceptions and experience of educational professionals, parents and educational psychologists (EPs) on child sleep difficulties in primary school aged children. Online questionnaires have sought the perceptions and the experiences of these three groups.

You took part in an online questionnaire where you were asked about your perceptions and experience of child sleep difficulties, in relation to your own child/children.

The researcher believes that there may be a gap in the knowledge of educational professionals, parents and EPs on how sleep difficulties impact children, as well as ways that parents and children can be supported to improve child sleep. It is also felt that there may be a lack of communication and collaborative working between parents, schools and EPs when a child has a sleep difficulty. It is felt that by working collaboratively and sharing important information regarding sleep, the child, parents and school may benefit. The researcher is also interested in identifying whom educational professionals, parents and EPs feel is best suited to provide support for children with sleep difficulties. This may help to identify if there is a need for EPs to work systemically with schools to encourage information to be shared regarding recommended sleep times, sleep hygiene, and behavioural strategies to aid child sleep.

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If you have any other questions about the study, please do not hesitate to contact the researcher via the email address below.

Contact Details:

Names of Researchers	Sylvie Furlong
Address	School of Psychology, Cardiff University, Tower Building, Park Place, Cardiff, CF10 3AT
Contact Number	02920 876497
Email	Sylvie Furlong: FurlongSG@cardiff.ac.uk
Research supervisor	Dr Simon Claridge: ClaridgeS@cardiff.ac.uk
Cardiff University Ethical Commitee	The research project has been approved by the ethics committee at Cardiff University. Any complaints should be made to: Secretary of the Ethics Committee, School of Psychology, Cardiff University, Tower Building, Park Place, Cardiff, CF10 3AT Contact Number: 02920 870 360 Email: psychethics@cardiff.ac.uk

If you would like further information on child sleep and ways of managing child sleep problems, you may find the following reference of value:

Galland, B.C. & Mitchell, E.A. (2010). Helping children sleep. *Archives of disease in childhood, 95*, 850-853.

Appendix Q. Debrief form for EPs

Perceptions of educational psychologists on child sleep difficulties in primary school aged children

Thank you very much for taking the time to complete this questionnaire.

The aim of this research is to understand the perceptions and experience of educational professionals, parents and educational psychologists (EPs) on child sleep difficulties in primary school aged children. Online questionnaires have sought the perceptions and the experiences of these three groups.

You took part in an online questionnaire where you were asked about your perceptions and experience of working with primary school aged children, their parents/primary caregivers, and the schools that they attend with a focus on sleep difficulties and how these impact children in school.

The researcher believes that there may be a gap in the knowledge of educational professionals, parents and EPs on how sleep difficulties impact children, as well as ways that parents and children can be supported to improve child sleep. It is also felt that there may be a lack of communication and collaborative working between parents, schools and EPs when a child has a sleep difficulty. It is felt that by working collaboratively and sharing important information regarding sleep, the child, parents and school may benefit. The researcher is also interested in identifying whom educational professionals, parents and EPs feel is best suited to provide support for children with sleep difficulties. This may help to identify if there is a need for EPs to work systemically with schools to encourage information to be shared regarding recommended sleep times, sleep hygiene, and behavioural strategies to aid child sleep.

All information that you have provided will be held anonymously (there will be no way that the information you gave can be traced back to you) due to no identifying information such as names being collected during the questionnaire. Due to this you are now unable to withdraw your data from the study due to the data being anonymous and having no named link to any of the participants.

If you have any other questions about the study, please do not hesitate to contact the researcher via the email address below.

Contact Details:

Names of Researchers	Sylvie Furlong
Address	School of Psychology, Cardiff University, Tower Building, Park Place, Cardiff, CF10 3AT
Contact Number	02920 876497
Email	Sylvie Furlong: FurlongSG@cardiff.ac.uk
Research supervisor	Dr Simon Claridge: ClaridgeS@cardiff.ac.uk
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	Contact Number: 02920 870 360	Email: psychethics@cardiff.ac.uk

If you would like further information on child sleep and ways of managing child sleep problems, you may find the following reference of value:

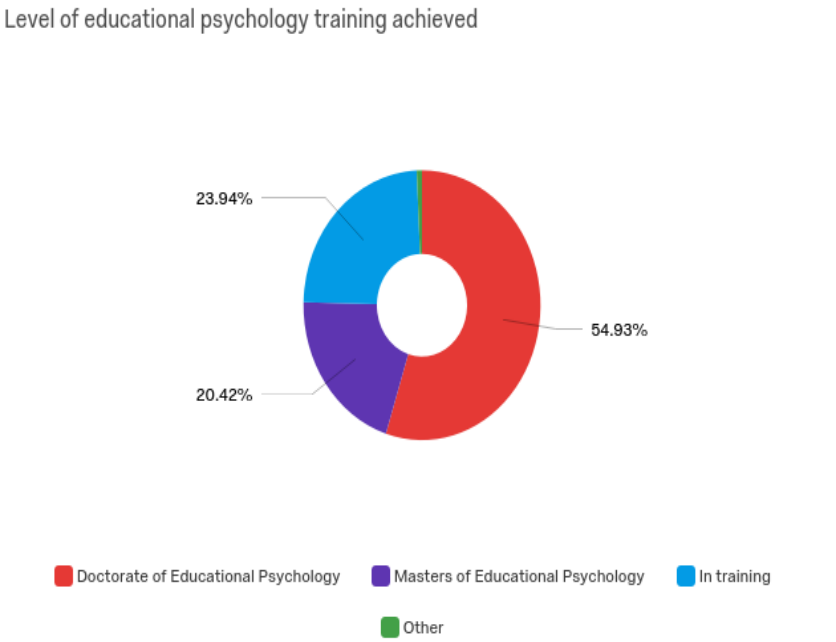
Galland, B.C. & Mitchell, E.A. (2010). Helping children sleep. *Archives of disease in childhood, 95*, 850-853.

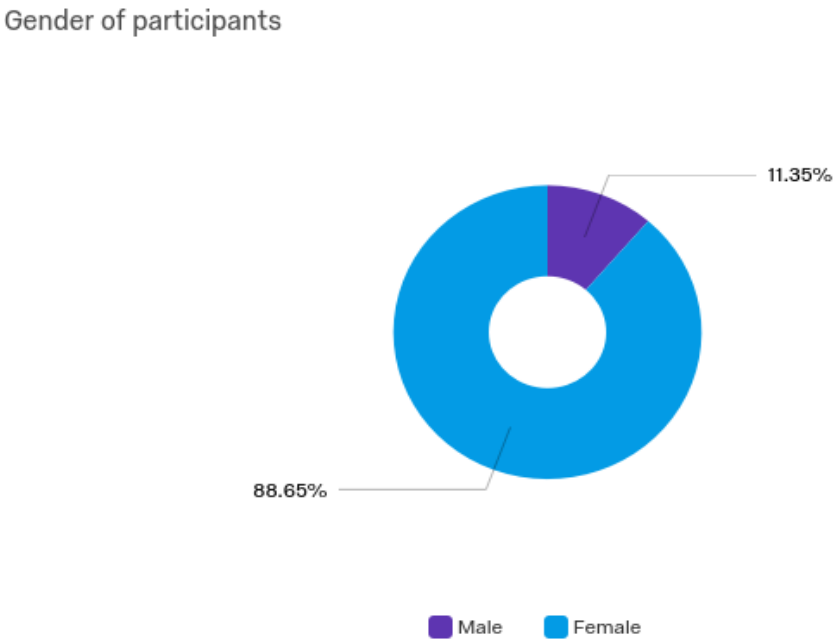
Appendix R- Braun and Clarke's (2006) Thematic Analysis six step procedure

1. The researcher familiarised themselves with the data by reading and then re-reading all of the transcriptions to generate initial ideas, and thoroughly familiarise themselves.
2. Initial codes were generated by identifying interesting features from within the whole data set. These codes were typed and colour coded to help identify the different themes within the data. The transcripts were all coded line by line to ensure all information was analysed equally. After these codes were identified this process was repeated twice more to ensure codes had been identified correctly.
3. The researcher searched for themes within the data set. This allowed the researcher to begin ordering the codes into relevant potential themes. Thematic maps were then drawn out to identify themes and subthemes from the data, which were drawn out by hand.
4. The aforementioned themes were then reviewed to ensure that the themes represented the codes and entire data set. This allowed the researcher to check and revise the themes that had been selected. All transcriptions were then re-read to identify if any further information had been missed during the coding process.
5. The themes were then defined and named by refining the specifics of each theme. Subthemes were then created by exploring the themes that appeared to group together.
6. Seven themes were then created, five of which were generated across all three questionnaires (school, technology, child level, external influences and professionals). The theme 'application of psychology' was generated from the EP questionnaire, and 'consequences' from the school staff questionnaire. Each theme contained subthemes within them. The report was then produced by the researcher to relay the findings back to the research question of: what is

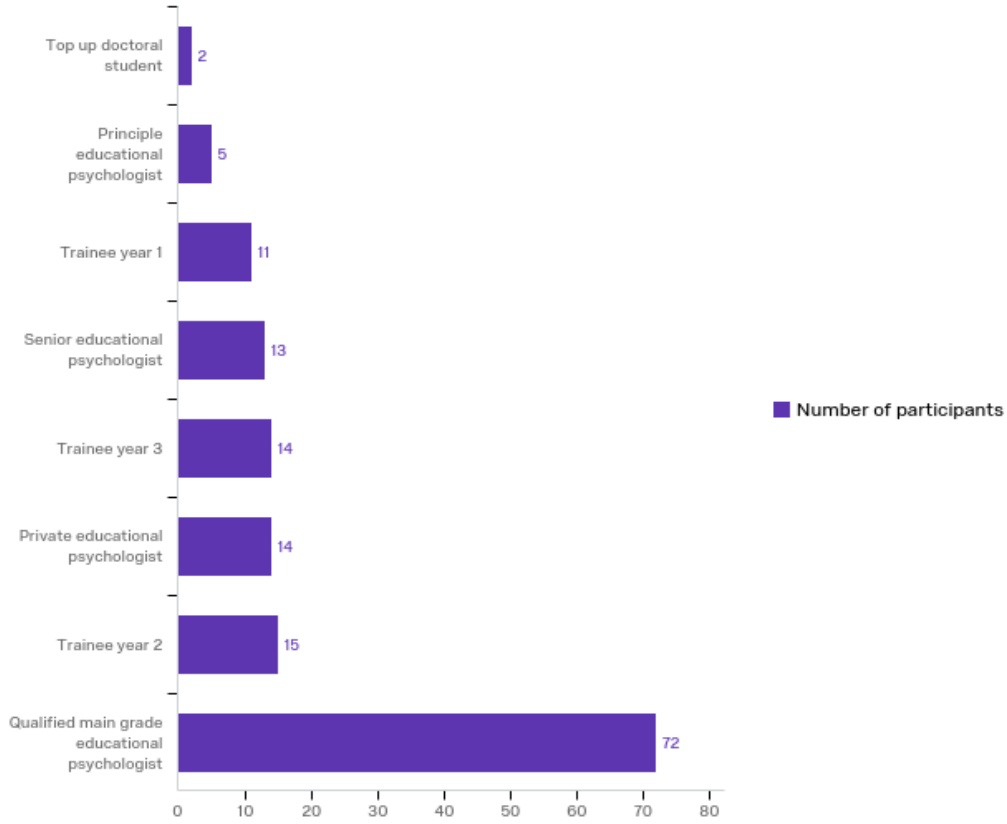
the current knowledge of CS; what is the experience or working with and supporting CS; who is felt to be best suited to support CSD; is there a requirement for training, and is there a role for EPs in supporting CS. The themes and subthemes were then summarised in a thematic map.

Appendix S – Demographic data for EPs

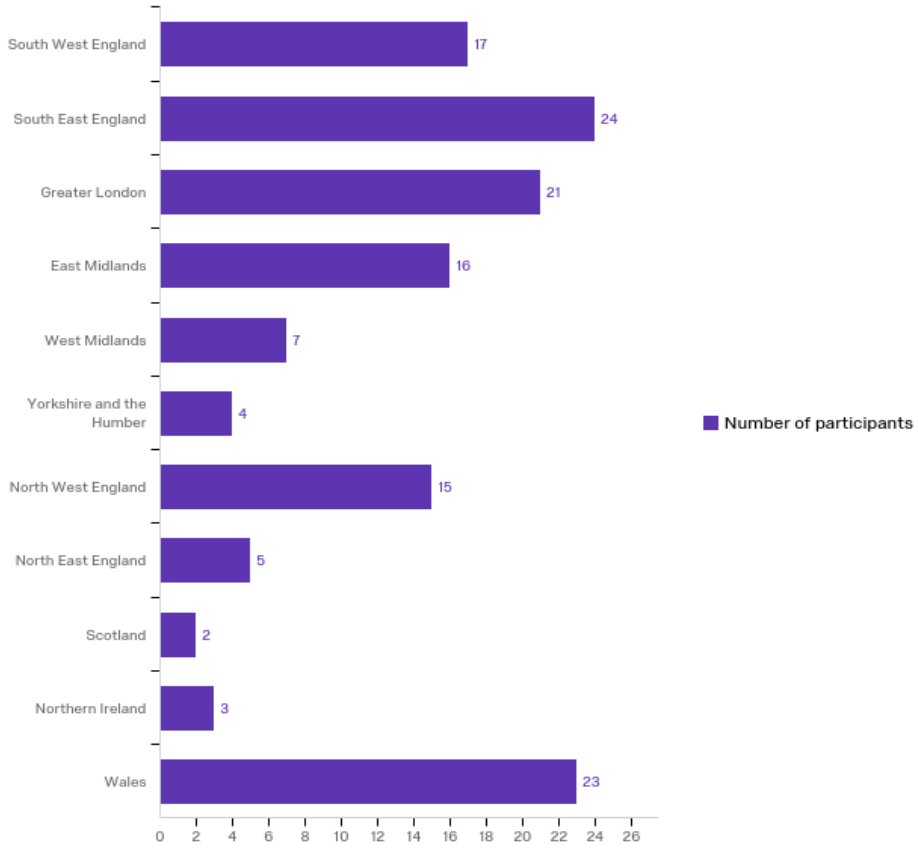


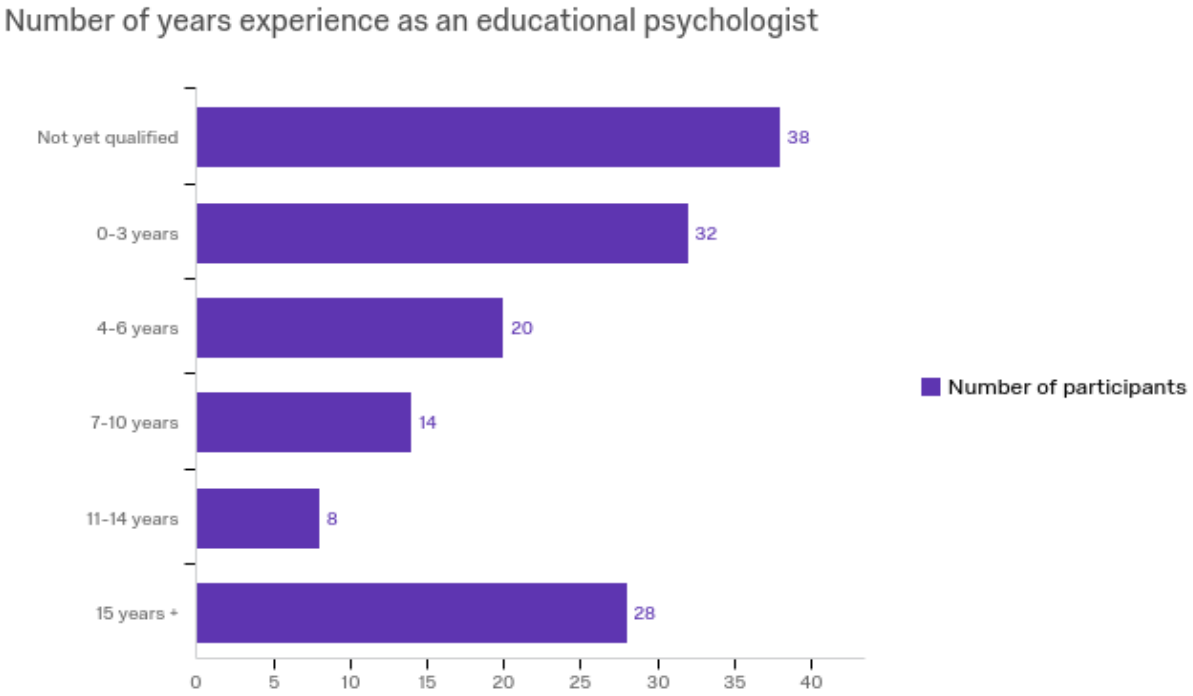


Professional role distribution

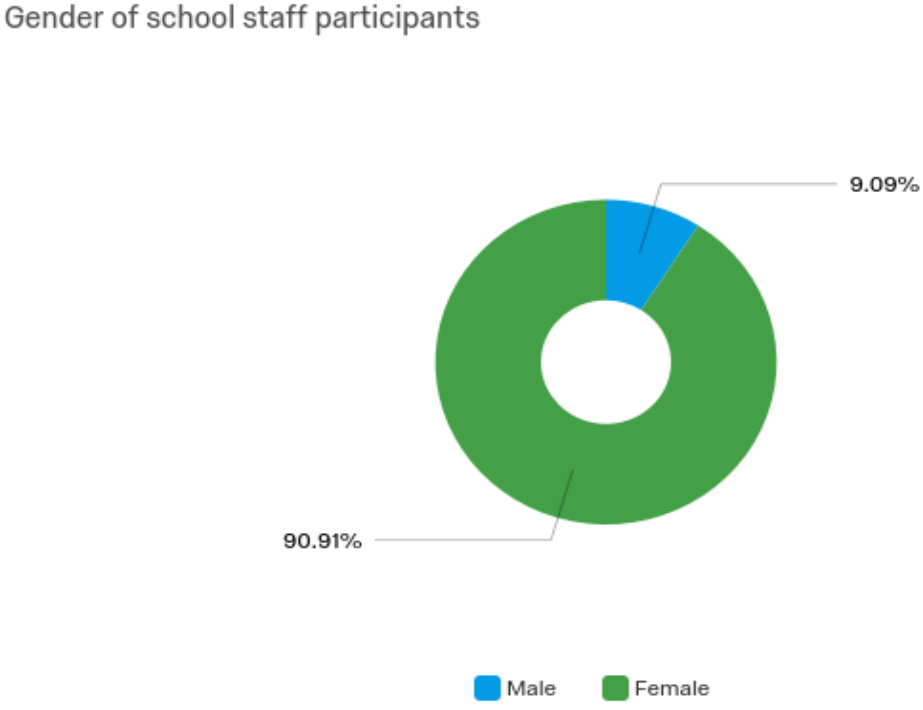


Local authority regions worked in by participants

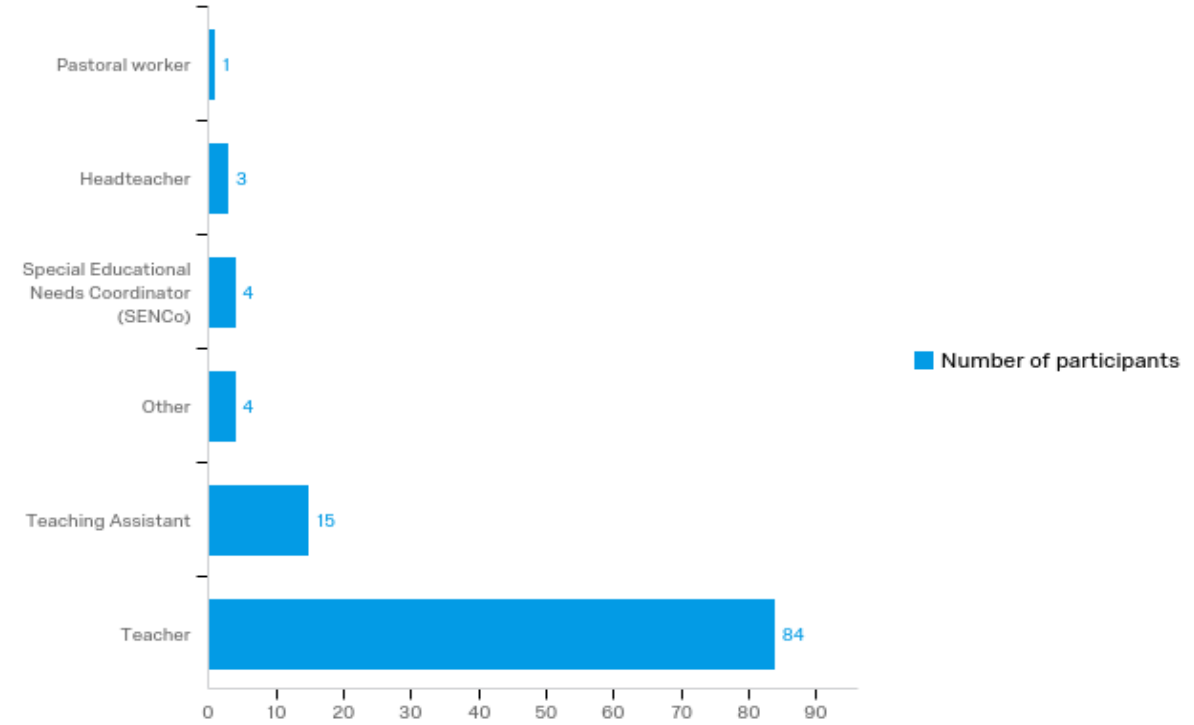




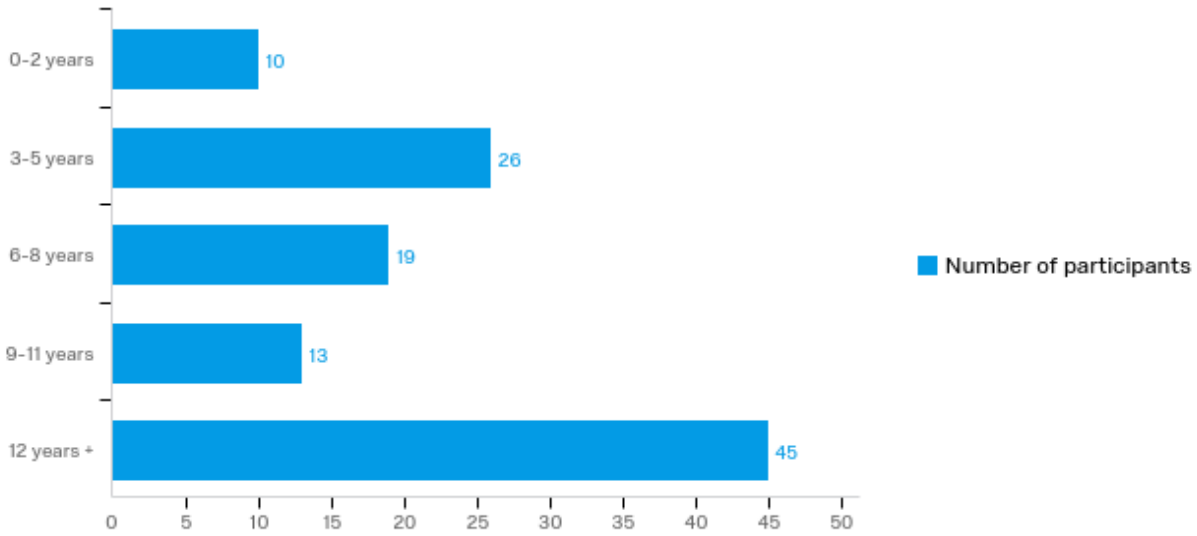
Appendix T- Demographic data for school staff

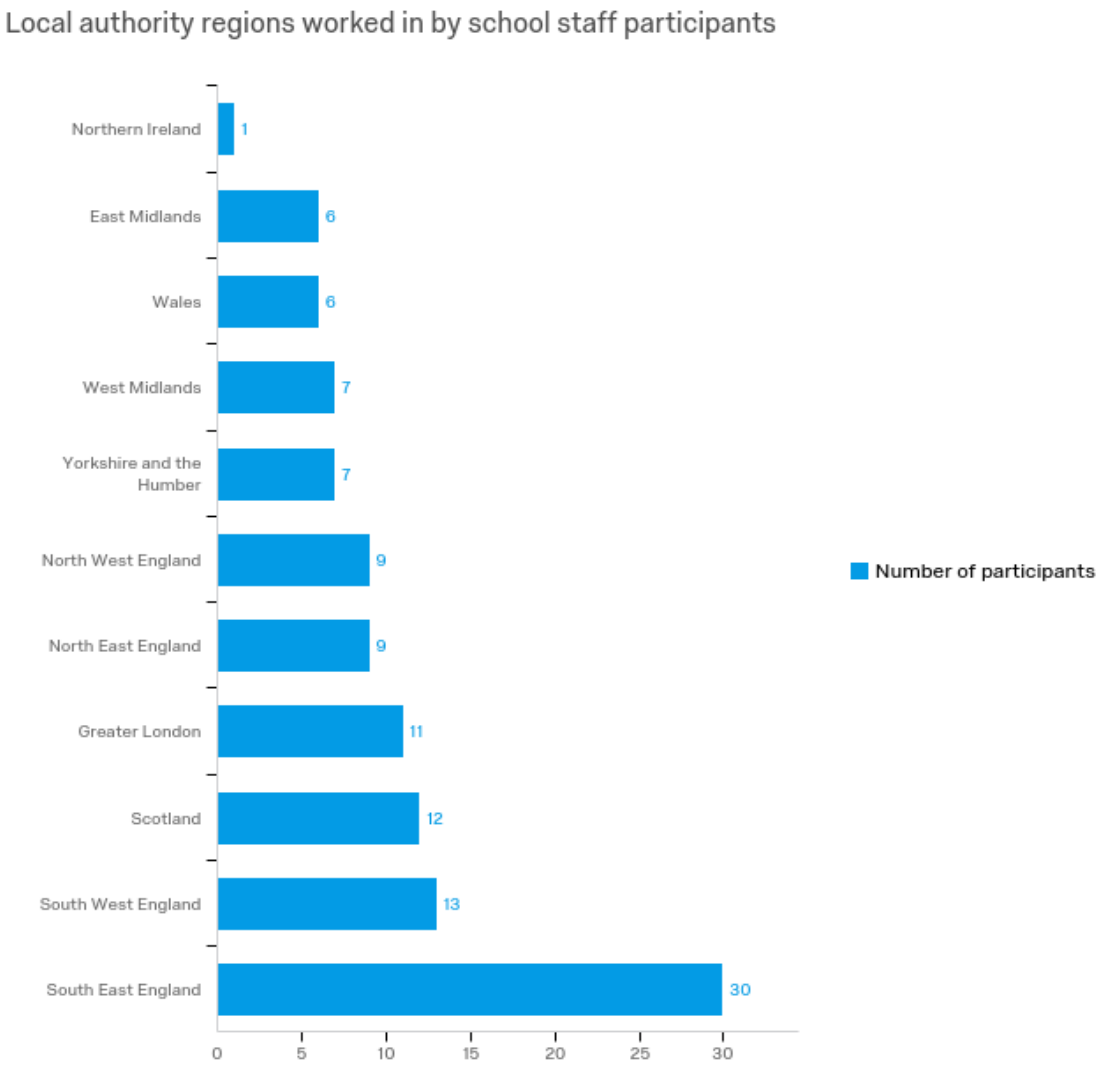


Occupation of school staff participants



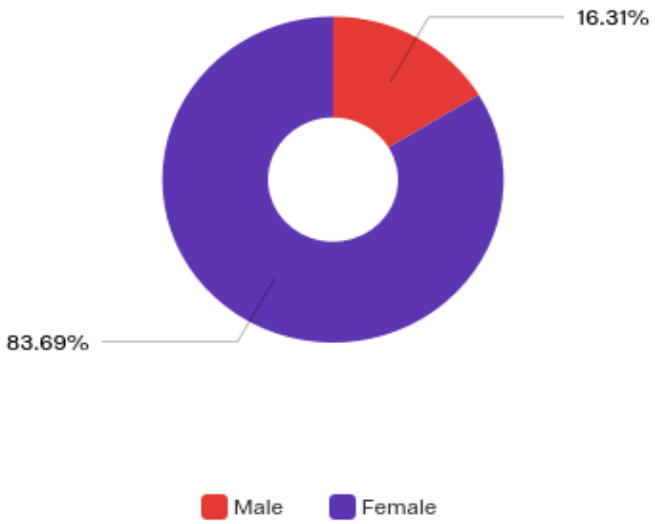
Number of years school staff participants have worked in schools



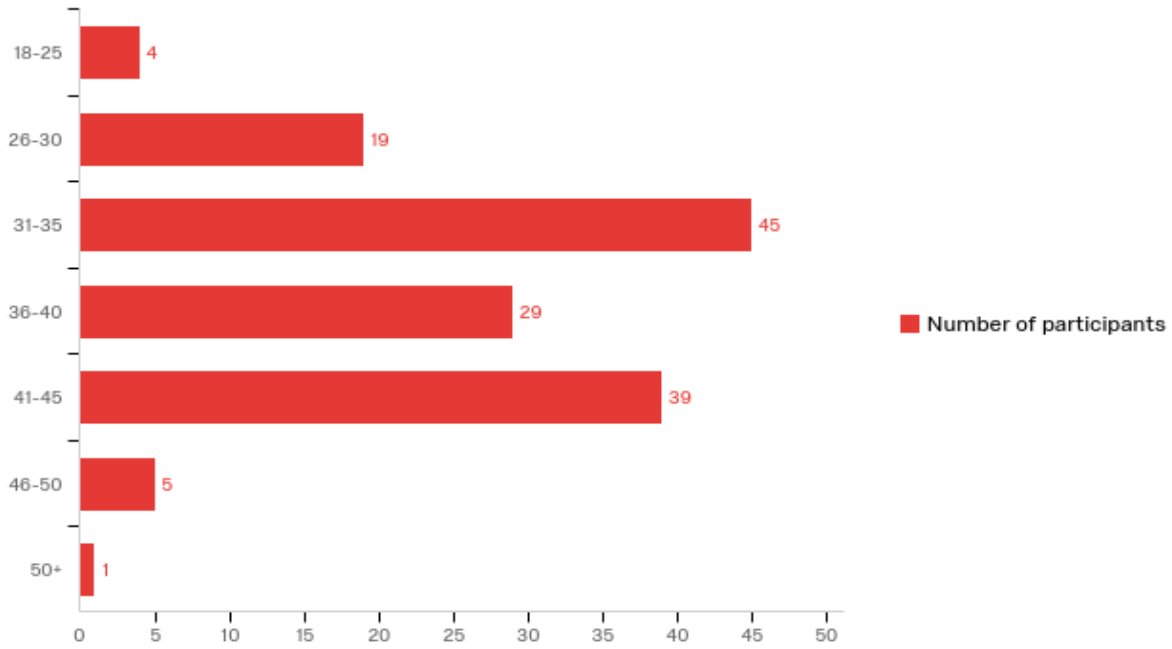


Appendix U- Demographic data for parents

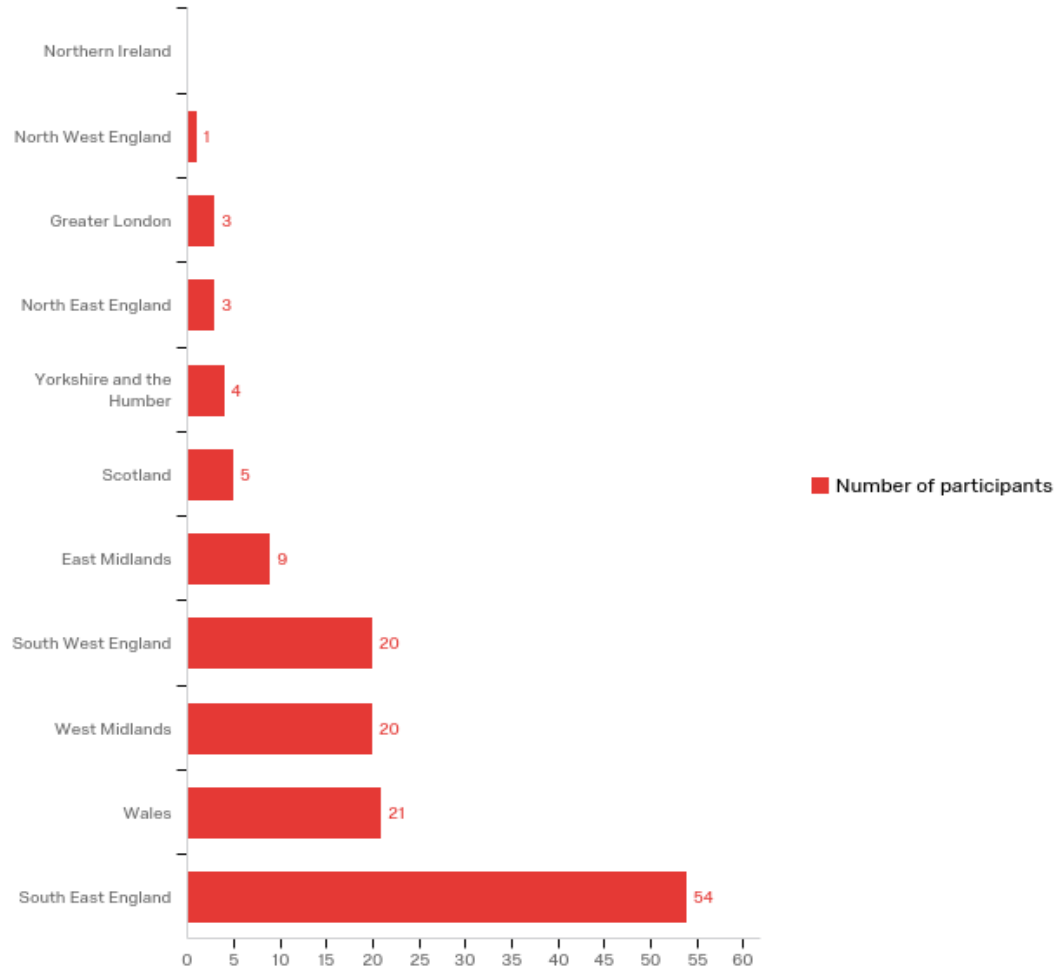
Gender distribution of parent participants



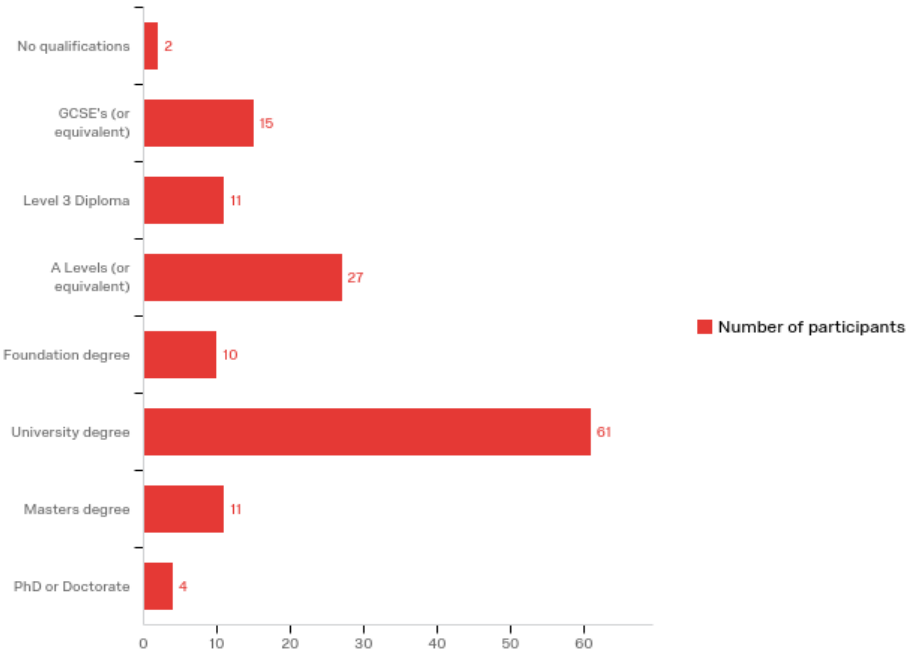
Age distribution of parent participants

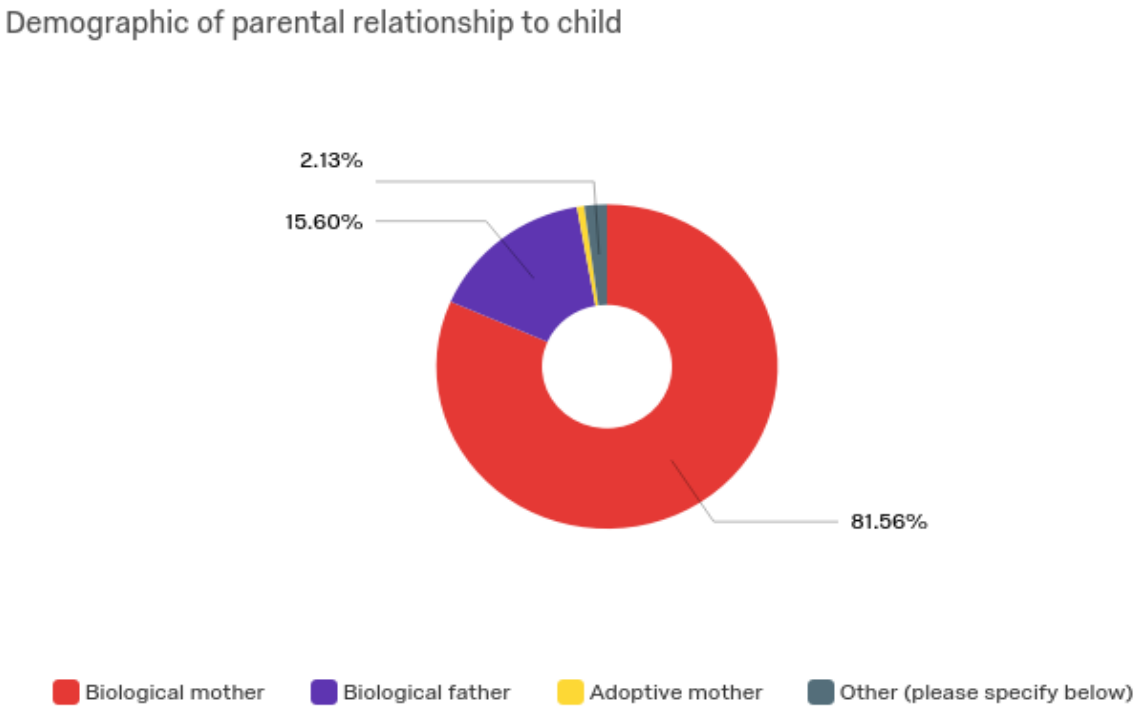


Local authority regions lived in by parent participants

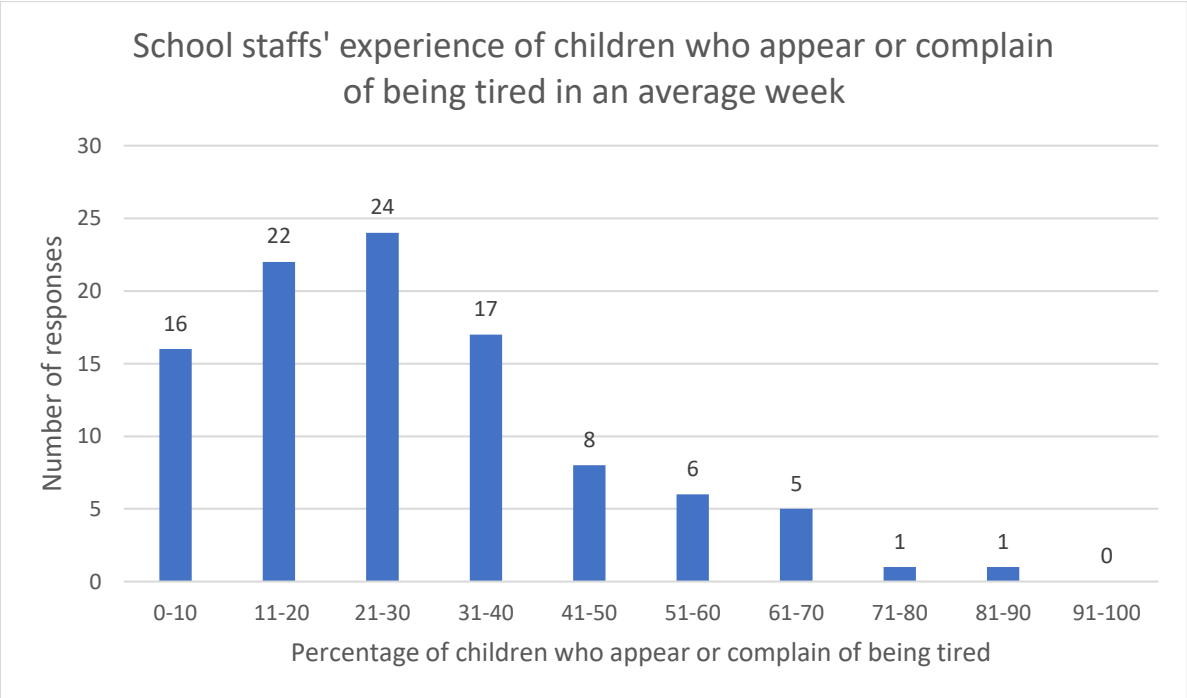


Level of education achieved by parent participants

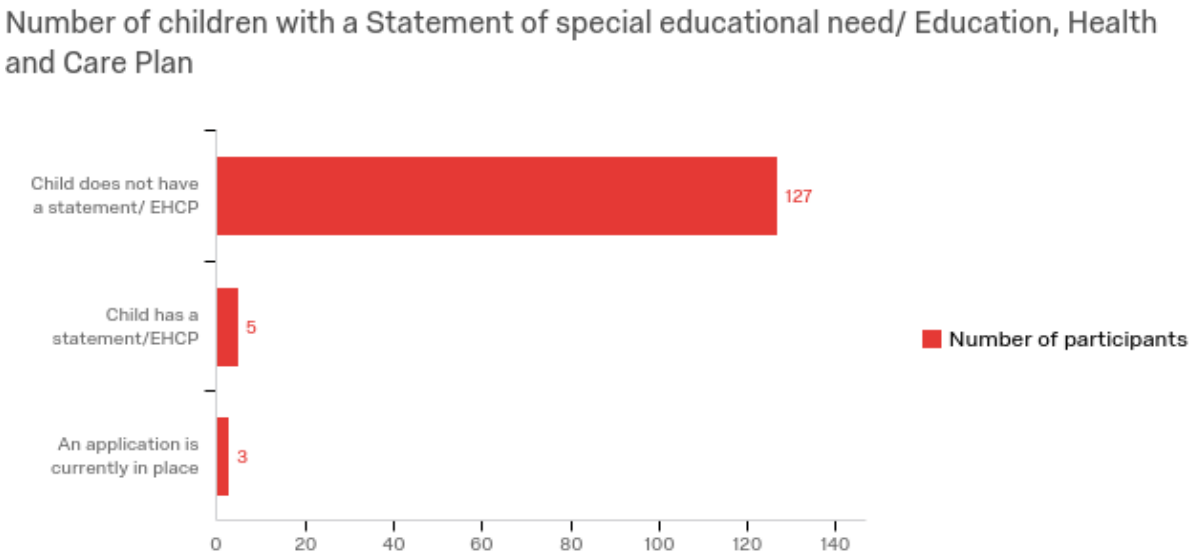




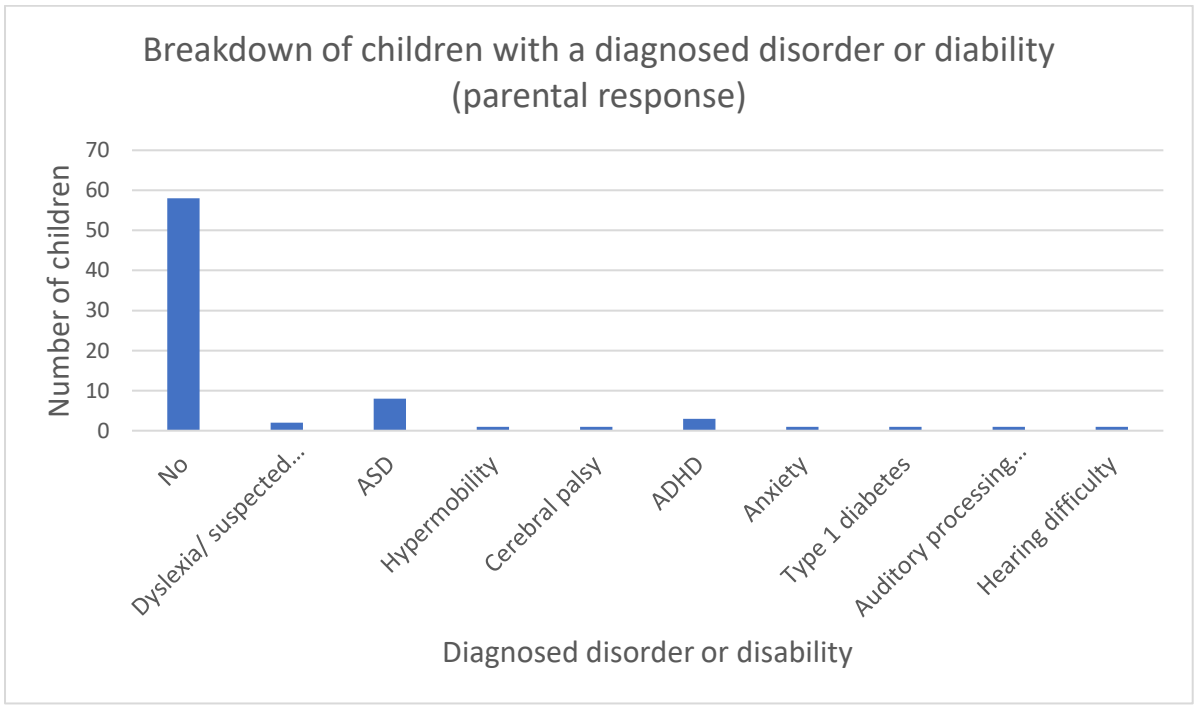
Appendix V- School staff experience of child tiredness in school



Appendix W- Distribution of parent participants' children with a Statement/ EHCP



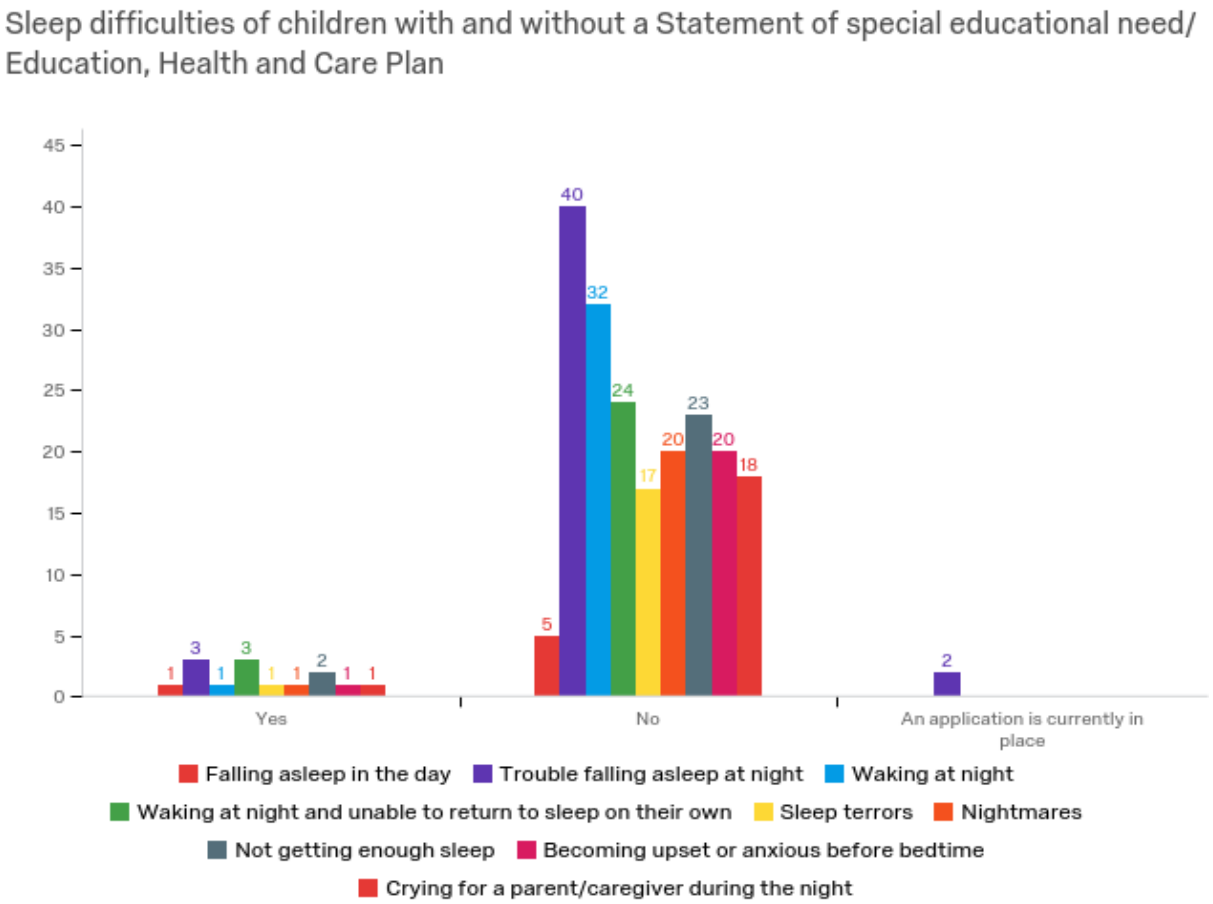
Appendix X- Breakdown of diagnosed disorders or disabilities



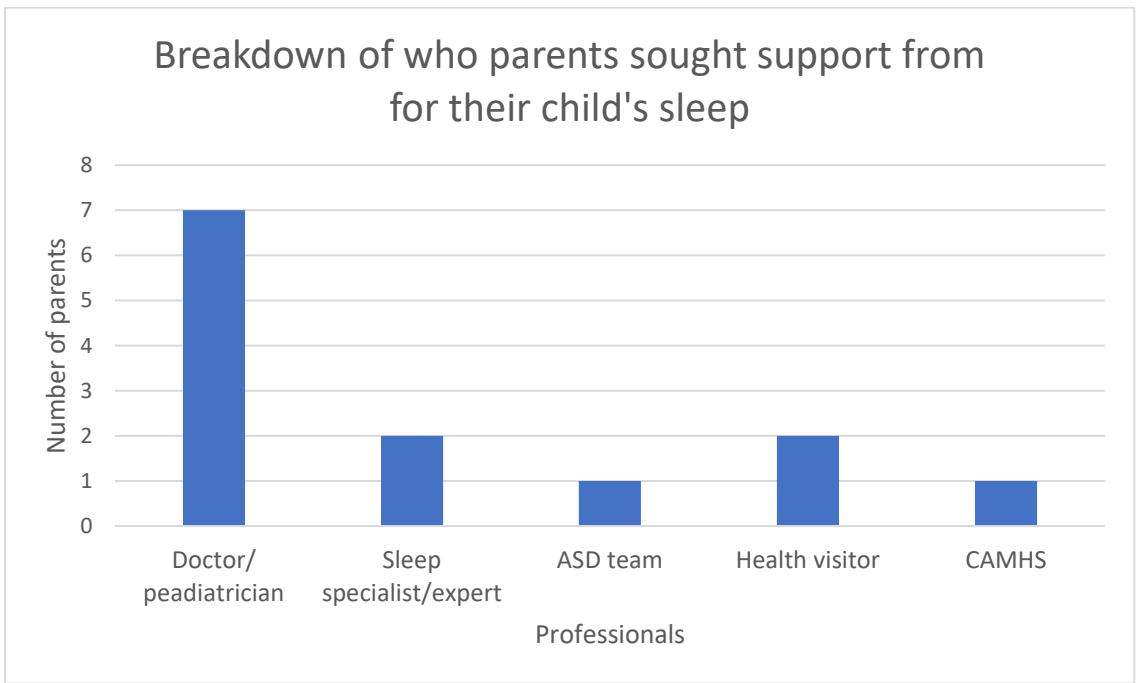
Appendix Y- Data of parents seeking support

	Yes	No	I have considered it
Have you ever sought help in regards to your child's sleep?	10%	85%	5%

Appendix Z- Sleep difficulties of children with/ without a Statement/ EHCP



Appendix A.A- Breakdown of who parents sought support from for their child's sleep



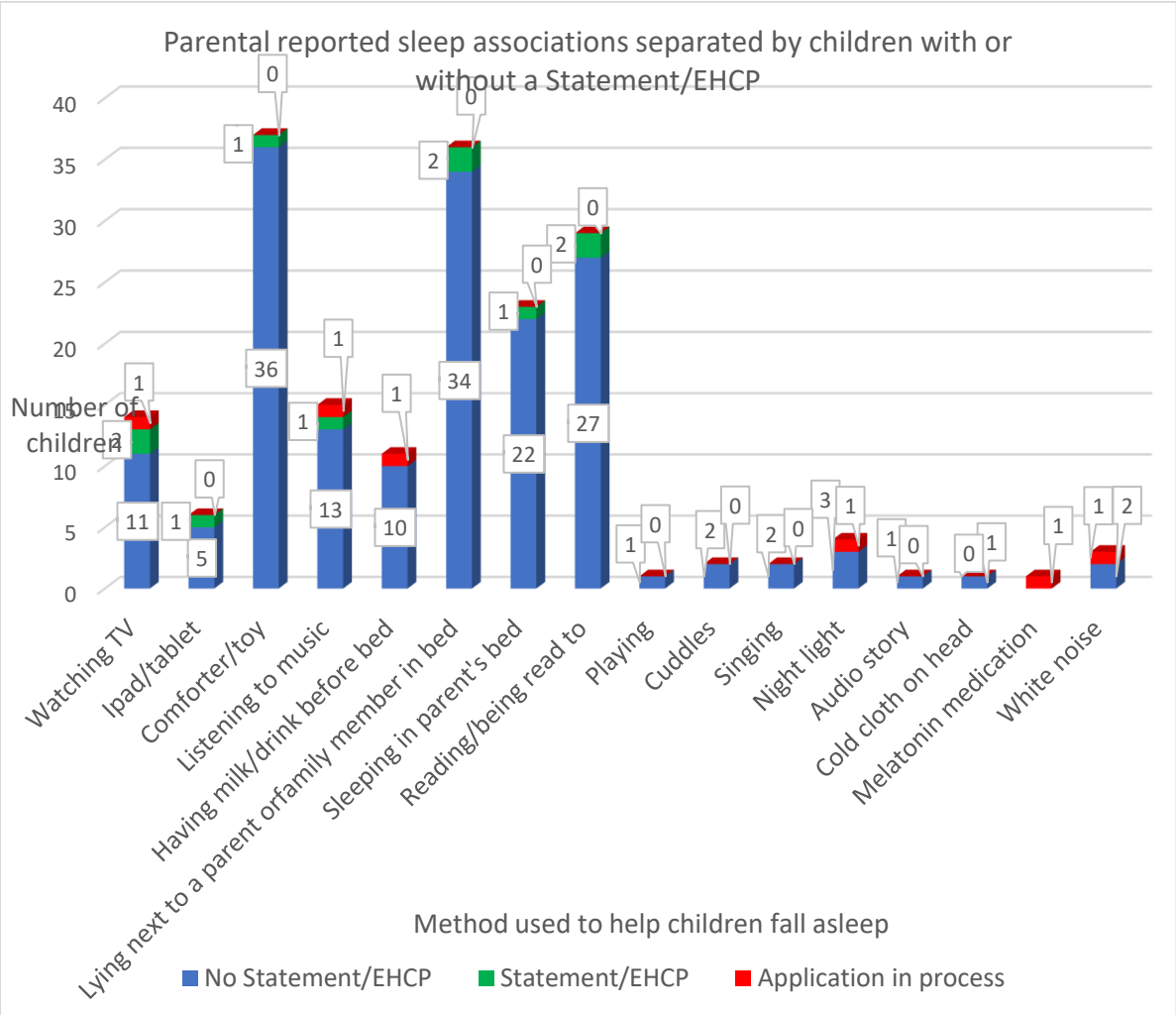
Appendix B.B- Children medicated for sleep as reported by parents

	Yes	No	Previously
Is your child currently on medication to help her/him sleep?	2%	96%	2%

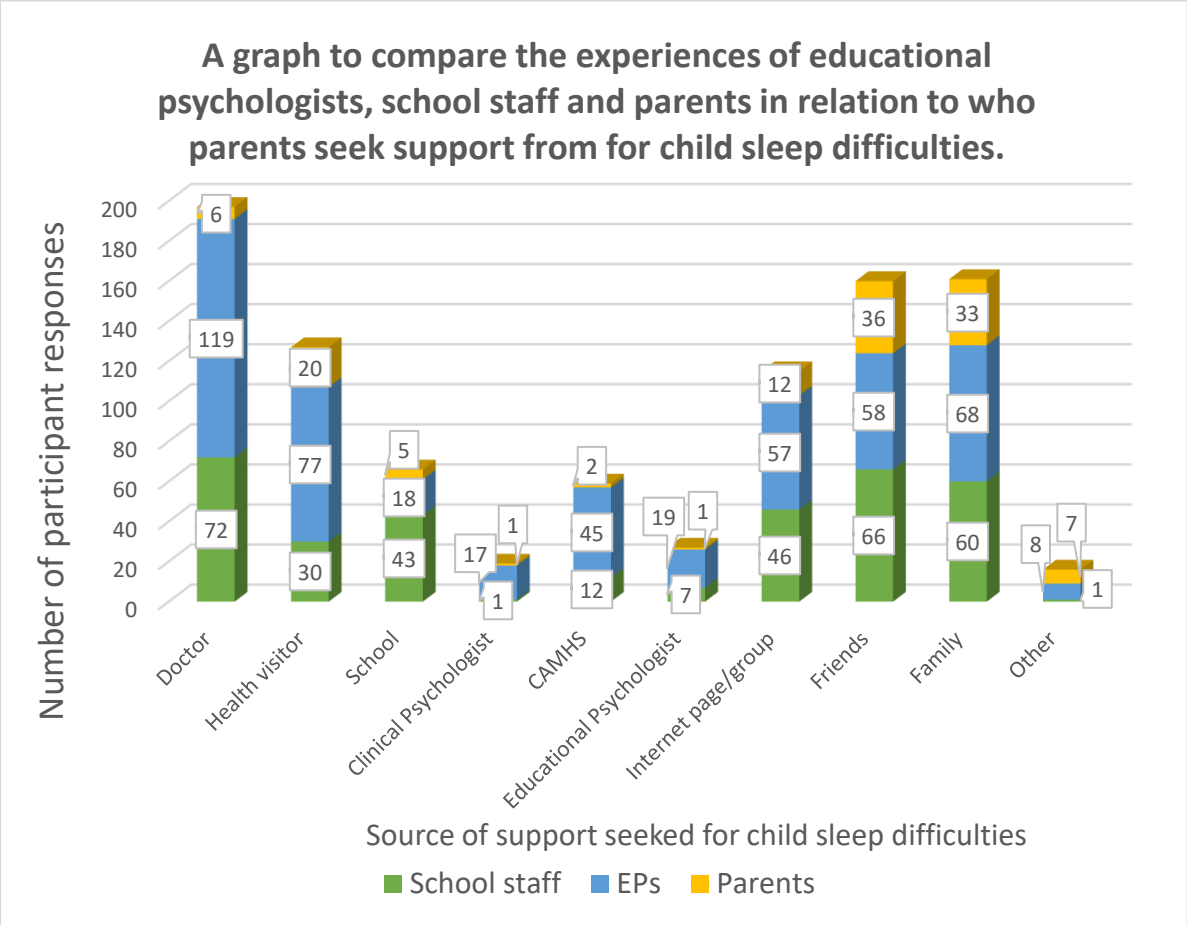
Appendix C.C- Parents whose children have been seen by an EP

	Yes	No	S/he is waiting to be seen
Has your child ever been seen by an educational psychologist?	2%	96%	2%

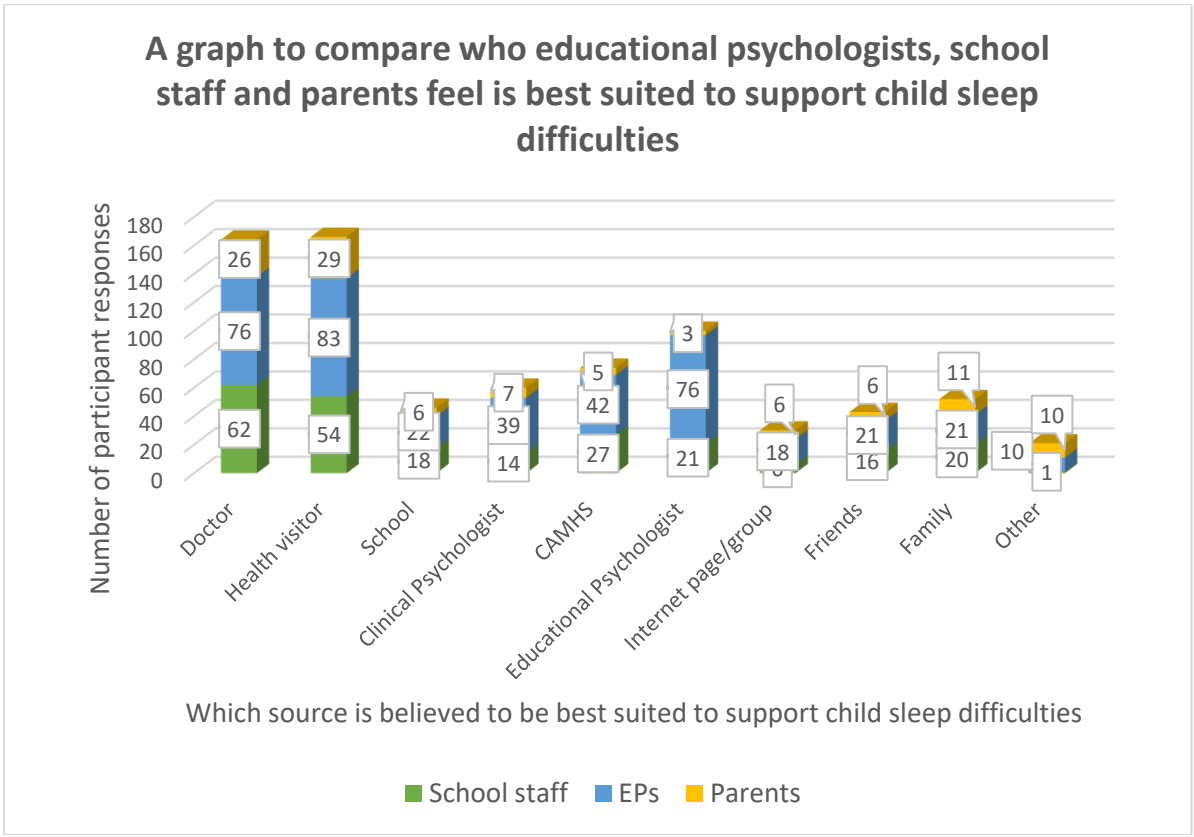
Appendix D.D- Parent reported sleep associations of children with/without a Statement or EHCP



Appendix E.E- A breakdown of who the three participant groups report parents to seek support from



Appendix F.F- A breakdown of who the three participant groups feel is best suited to support child sleep difficulties


A graph to compare who educational psychologists, school staff and parents feel is best suited to support child sleep difficulties
Number of participant responses
180
160
140
120
100
80
60
40
20
0
26
76
62
29
83
54
6
18
7
39
14
5
42
27
3
76
21
6
18
6
21
16
11
21
20
10
10
1
Doctor
Health visitor
School
Clinical Psychologist
CAMHS
Educational Psychologist
Internet page/group
Friends
Family
Other
Which source is believed to be best suited to support child sleep difficulties
School staff
EPs
Parents