

The experience of sleep problems for adolescents with depression in short-term psychological therapy

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Abstract

A growing body of literature demonstrates a strong relationship between sleep disturbances and depression in adolescence. In spite of this, few studies have explored how adolescents with depression experience sleep problems. The present study aimed to qualitatively explore the experience of sleep problems in adolescents with depression, including their understanding of how a psychological therapy impacted on these sleep difficulties. The sample included 12 adolescents with sleep disturbances who had been offered treatment for depression through a large, multi-centre, randomised controlled trial (Goodyer, et al., 2017). Semi-structured interviews conducted after treatment and one-year post treatment were analysed using thematic analysis. Two main themes were identified. Both themes demonstrated how an overarching desire to escape impacted the adolescents' sleep in distinct ways; 'thinking about the 'bad stuff'' was characterized by ruminative thinking, which prevented sleep, whereas 'sleep as an escape' indicated a desire to sleep excessively due to feelings of helplessness. Overall, the findings demonstrate a nuanced relationship between sleep and depression in adolescence, and imply that the underlying meaning of the sleep difficulties for each young person should be considered in the delivery of therapy for adolescent depression.

The Experience of Sleep Problems for Adolescents with Depression in Short-Term Psychological Therapy

Sleep problems are highly prevalent among adolescents, and are becoming globally recognized as a serious health issue (Gradisar, Gardner, & Dohnt, 2011). The prevalence of insomnia and hypersomnia among adolescents is estimated to be 23.8% (Hysing, Pallesen, Stormark, Lundervold, & Sivertsen, 2013) and 11.7% (Kolla, et al., 2019), respectively, while in one study 41.5% of adolescents reported feeling sleepy during the day (Kolla, et al., 2019). The consequences of sleep problems in adolescents are considered to be a threat to adolescents' cognitive function and performance in school (Millman, 2005), as well as contributing to decreased emotional, mental and physical health (Shochat, Cohen-Zion, & Tzischinsky, 2014).

There is increasing evidence of a significant association between sleep problems and psychopathology in adolescents (Baddam, Canapari, van Noordt, & Crowley, 2018), including depression (Orchard, Pass, Marshall, & Reynolds, 2017). One study found that 72.7% of 553 adolescents with depression reported problems with sleep; the most frequent sleep disturbance being insomnia (Liu, et al., 2007). Another large-scale clinical trial found sleep disturbance to be the most common symptom amongst adolescents with depression, also suggesting insomnia to be the most prominent sleep problem in this group (Goodyer, et al., 2017). However, sleep disturbance is suggested not to merely be a symptom of depression, but rather a co-morbid disorder (Clarke & Harvey, 2013). This notion was supported by an extensive review which examined data from sleep-EEG, epidemiological and neuroendocrine research, suggesting that sleep problems and depression are disparate but highly linked disorders that influence each other in a complex bidirectional relationship (Pigeon & Perlis, 2009). Exploring this relationship is imperative as adolescents with both sleep problems and depression have been found to be more likely to have severe depression (Liu, et al., 2007) and to struggle with suicidal thoughts (Urrila, et al., 2012).

Theory into the relationship between depression and sleep has tended to regard depression as a risk factor for developing sleep problems (Morphy, et al., 2007). However, various longitudinal studies have since examined the relationship between sleep and depression, and a meta-analysis of such studies concluded that there was good evidence that sleep disturbances predicted later depression (Lovato & Gradisar, 2014). Another meta-analysis found that individuals with insomnia were twice as likely to develop depression compared to individuals without insomnia (Baglioni, et al., 2011). Similar findings have been reported in adolescents specifically, with one study identifying adolescent sleep problems as a significant predictor of depression (Reynolds, et al., 2020). Research has proposed both biological, psychological and social mechanisms through which sleep disturbances may increase the risk of depression (Blake, Trinder, & Allen, 2018; Jackson, et al., 2014). For example, experimental

studies have demonstrated that poor sleep may lead to alterations in emotional and cognitive regulatory systems that result in depression (Novati, et al., 2008; Yoo, et al., 2007). The change in cognitive regulation may increase aversive thoughts through impairing the ability to inhibit intrusive thinking (Jackson, et al., 2014). Aversive cognitive processes associated with depression, such as rumination, may therefore result from sleep problems (Harvey, 2001), which in turn may trigger depression.

Treatment evidence has also supported the notion that sleep problems predict depression by finding that treatments for sleep problems significantly reduced depressive symptoms, even though these treatments did not target depression (Gee, et al., 2019). However, few studies have investigated whether treatments for depression are able to alleviate sleeping problems. Since the relationship between the onset of sleep disturbances and depression is suggested to be bidirectional, then the alleviation of sleep difficulties and depression might follow a similar association. In the same way that psychological treatments for sleep problems do not target depression, standardised treatment manuals for depression do not typically address sleeping problems (Ritschel, Ramirez, Jones, & Craighead, 2011; Brent & Poling, 1997; Martell, Addis, & Jacobson, 2001). Yet, it is plausible that the improvement of other depressive symptoms indirectly alleviates sleep disturbances. For example, rumination is highly associated with depression – and although rumination might result from sleep loss (Slavish & Graham-Engeland, 2015; Harvey, 2001) – ruminative processes are also suggested to disrupt sleep (Conroy, et al., 2017; Lovato & Gradisar, 2014). Furthermore, negatively toned cognitions are associated with both sleep problems and depression, such as distorted perceptions of information received, and theoretical models have presented an overview as to how dysfunctional beliefs could link sleep and mental health (Harvey, 2002). Both rumination and cognitive distortions are usually targeted in treatments for depression, which often address maladaptive thinking patterns (Papageorgiou & Wells, 2004), or unconscious anxieties that may be associated with rumination and aversive cognitive biases (Cregeen, Hughes, Midgley, Rhode, & Rustin, 2016). Treatments for depression might therefore improve sleep through alleviating rumination and cognitive distortions.

A few studies have examined features of treatment that might improve sleep problems in adolescents with mental health difficulties (Conroy, et al., 2017; Waite, et al., 2018). For example, Waite et. al. (2018) found that adolescents improved their sleep by learning more about sleep hygiene. This is consistent with other findings, which have emphasized the importance of increasing knowledge of sleep in treating adolescent sleep problems (Orzech, 2012). The findings of Conroy et al. (2017) also suggested that therapies for insomnia in adolescents with depression should consider the characteristics of depression, including how sleep difficulties interact with other features of depression. However, only one study has investigated whether treatment for depression improves

sleeping problems in adolescents (Reynolds, et al., 2020). The results showed that approximately half of the adolescents reported less problems with sleep after treatment, with no differences found between three psychological therapies. Further, around one-third reported ongoing residual sleep problems after treatment and at follow-up, whilst simultaneously having recovered from depression (Reynolds, et al., 2020). These results demonstrate that more in-depth knowledge is needed on the experiences of sleeping problems in adolescents with depression, and of being in treatment for these difficulties.

Despite the growing literature examining the relationship between sleep and depression, very little is known about how adolescents with depression experience sleep problems and subsequent implications for treatment. To date, only one study has qualitatively explored sleeping problems in adolescents with depression. Conroy and colleagues (2017) interviewed 14 adolescents with depression and insomnia, as assessed by the Insomnia Severity Index (Bastien, Vallières, & Morin, 2001), and analysed responses using thematic analysis. The participants described how their depression caused daytime sleeping which disrupted night sleeping, and that bedtime rumination caused difficulties falling asleep (Conroy, et al., 2017). These findings help to understand the relationship between sleep and depression, but further work is needed to examine the experiences of poor sleep for adolescents with depression, with a focus on how treatment impacts on sleep difficulties among these adolescents.

Together, the above studies highlight the importance of exploring the relationship between sleep and depression in adolescents, as well as exploring how treatment targeting depression might alleviate sleep problems. The present study aims to qualitatively explore how adolescents with depression engaging in therapy experience sleep problems, with a view to understanding implications for treatment.

Methods

Study Design

The present study used a qualitative design, with the objective of attaining an in-depth account of the experience of sleep problems in adolescents with depression and implications for treatment. Data was analysed using thematic analysis (TA) (Braun & Clarke, 2006). TA is a flexible qualitative methodological approach that allows for identification, analysis and reporting of patterns of experiences in data by providing a detailed account of identified themes, and is particularly useful in exploring under-researched phenomenon (Braun & Clarke, 2006).

Setting for the Study

The current study is based on secondary data analysis from the Improving Moods with Psychoanalytic and Cognitive Therapies (IMPACT) study, a large, multi-centre, randomised control trial, which compared the effectiveness of three psychological therapies for adolescents with depression (Goodyer, et al., 2011; Goodyer, et al., 2016). The sample included 465 adolescents with moderate to severe depression. These participants were randomly allocated to three different treatment arms: Cognitive-Behavioural Therapy (CBT), Short-Term Psychoanalytic Psychotherapy (STPP) and Brief Psychosocial Intervention (BPI). The three treatments were based on distinct theoretical models, and were delivered in routine services by specialist clinicians according to treatment manuals (IMPACT Study CBT Sub-Group, 2010; Kelvin, et al., 2010; Cregeen, Hughes, Midgley, Rhode, & Rustin, 2016). The CBT and STPP manuals both make reference to the link between depression and sleep difficulties and the value of sleep hygiene, but do not set out specific techniques to address problems with sleep. The BPI manual identified sleep hygiene as a routine intervention that clinicians could offer. However, it is important to note that the treatments did not perform differently either in terms of their impact on alleviating depression (Goodyer I. , et al., 2016) or sleep problems (Reynolds, et al., 2020). The participants were assessed before treatment, at the end of treatment (36 weeks after randomisation) and at a follow-up (86 weeks after randomisation), using a series of validated measures (see Goodyer et al., 2011 for details of the study design and assessment measures). IMPACT-My Experience (IMPACT-ME) was a qualitative, longitudinal study, which took place in parallel to the IMPACT trial (Midgley, Ansaldo, & Target, 2014). It aimed to explore adolescents' and their families' experience of depression and treatment through in-depth, semi-structured interviews, and included the perspectives of the adolescents, families and therapists to advance the understanding of what factors might help or hinder recovery. Interviews were carried out with 70 adolescents participating in IMPACT at three stages: before therapy (T1, baseline), at the end of therapy (T2, 36 weeks from baseline) and one year after the end of treatment (T3, 86 weeks from baseline).

Data Collection and Sampling

The current study uses data from the post-therapy (T2 and T3) interviews collected as part of IMPACT-ME. These interviews were semi-structured, and encouraged the adolescents to share their experiences of having been in therapy, and to explore any change in depression and how the participants understood such changes. The interviews were conducted by research psychologists working on the original IMPACT-ME study (Midgley, Ansaldo, & Target, 2014) with training in in-depth interviewing, and lasted between 30 and 90 minutes. These in-depth interviews were kept separate from the data collection for the main IMPACT trial, so in all cases the research interviewer had not met the young person prior to the interview, other than via phone to arrange the meeting. All

interview data was collected through audio recordings either in the adolescents' homes or at the clinics where the young people had been referred. Sleep problems were not a specific focus of the interviews, but all young people were asked about the difficulties that brought them to therapy and what impact these had on their lives; and were also asked about what impact the therapy had (if any) on those difficulties. Any account of sleep problems was therefore volunteered by the adolescents when asked more generally about their experience of depression and of therapy.

All 70 interviews from the end of post-treatment stage were first reviewed. To meet the present study's objective of exploring the meaningful experience of this phenomenon, adolescents who elaborated on their experience of sleep difficulties were included and those who did not mention sleep at all, or alternatively did not expand beyond a single statement, were excluded. Recovery of sleep problems was not an inclusion criterion. This resulted in a sample of 12 adolescents.

Participants

All participants were assessed for moderate-to-severe depression at the time of recruitment, and met the diagnostic criteria for Major Depressive Disorder according to the Schedule for Affective Disorders and Schizophrenia – for School-Age Children (K-SADS; (Kautman, et al., 1997). The K-SADS also indicated that all 12 of the participants met the threshold criteria for sleep disturbances. See Table 1 for demographic and treatment information, and Table 2 for the participants' categorisations of sleep problems at baseline, end of treatment and follow-up as indicated by the K-SADS. All names have been changed to preserve anonymity.

Table 1. Sample Characteristics (N = 12)

Pseudonym	Age	Gender	Ethnicity	Treatment
Viola	17	Female	Any other ethnic group	CBT
Tamara	14	Female	White British	STPP
Kayla	13	Female	White British	BPI
Jessie	17	Female	White British	CBT
Wendy	17	Female	White British	BPI
Mary	17	Female	White British	BPI
Betty	16	Female	White British	STPP
Lilly	16	Female	Any other ethnic group	STPP
Anna	17	Female	Any other ethnic group	STPP
Hannah	16	Female	White British	BPI
Robert	17	Male	White British	STPP
Aurora	17	Female	Any other ethnic group	STPP

Table 2. Sleep Problems on the K-SADS at baseline, end of treatment and follow-up (N=12)

	Baseline	End of Treatment (36 weeks)	Follow-up (86 weeks)
Viola	Circadian reversal	-	-
Tamara	Initial insomnia	-	-
Kayla	Initial insomnia, middle insomnia, non-restorative	-	No data
Jessie	Initial insomnia, middle insomnia	Hypersomnia	Non-restorative
Wendy	Non-restorative	No data	-
Mary	Initial insomnia, middle insomnia, terminal insomnia, non-restorative, hypersomnia	-	No data
Betty	Initial insomnia, non-restorative	No data	No data
Lilly	Initial insomnia	-	-
Anna	Middle insomnia, non-restorative, circadian reversal	Hypersomnia	Circadian reversal
Hannah	Initial insomnia, middle insomnia, hypersomnia	-	-
Robert	Initial insomnia, non-restorative	-	-
Aurora	Initial insomnia, middle insomnia, non-restorative	Initial insomnia, terminal insomnia, middle insomnia, circadian reversal	Hypersomnia

NB. Where data is blank the participant did not meet criteria for a sleep symptom; No data refers to missing data.

Data analysis

Data analysis followed Braun and Clarke's (2006) six-phase approach to TA. In the first phase, 'familiarization' with the data was achieved by reading relevant transcripts. The process began by the first author applying the search word 'sleep' to all 70 transcripts to identify narratives about sleep problems, in addition to experiences of being in treatment of depression in relation to sleep problems. The 12 transcripts that met the inclusion criteria were read in detail to contextualise the adolescents' broader narratives. Following this, initial ideas about the data were recorded. In the second phase, the first author coded sections of the interviews by systematically identifying features of interest. Each identified data extract was given a descriptive label, capturing its meaning; these descriptive labels were discussed with the research team. In the third phase, the first author iteratively sorted codes into patterns representative of shared features of the experience. Different combinations were tested and refined, ultimately resulting in two themes encapsulating their constitutive sub-themes. In the fourth phase, the adequacy and coherence of the candidate themes were checked in relation to the coded extracts, as well as the whole data-set, to generate a thematic map of the analysis. Phase five involved generating clear definitions and names for each theme. Finally, the findings were written up, embedding supportive illustrative data extracts within an analytic commentary (Braun & Clarke, 2006).

Trustworthiness and Credibility of the Data Analysis

Analysis adhered to Braun and Clarke's 15-point criteria for carrying out a high-quality thematic analysis (Braun & Clarke, 2006). There was a particular focus on ensuring that trustworthiness, confirmability, dependability, transferability and credibility were achieved (Lincoln & Guba, 1985). The first author remained reflexive in response to the data by continuously being aware of how personal experiences, background and interests might affect the interpretations (Johnson & Rasulovala, 2017). For instance, the first author's education and experiences with psychodynamic theory and practice led to an inclination towards interpreting the accounts in terms of unconscious processes. However, discussions with other members of the research team of different backgrounds helped establish the soundness of interpretations, irrespective of theoretical foundation. The discussions further served to ensure that interpretations were not based on a pre-existing conceptual framework and were firmly grounded in the data. The reflexive process was also supported by peer-review of the themes as they were devised. The first author kept a journal throughout the research process to record ideas, reflective discussions with and comments made by peers. This journal was attended to on a regular basis to continuously evaluate the thought processes behind every iteration of codes, themes and sub-themes. Finally, direct

quotations from adolescents were used when reporting the findings to ensure that the adolescents' voices were preserved as well as allowing co-authors to explore the analysis against the original accounts, and thus ensure that it was sufficiently 'grounded' in the data.

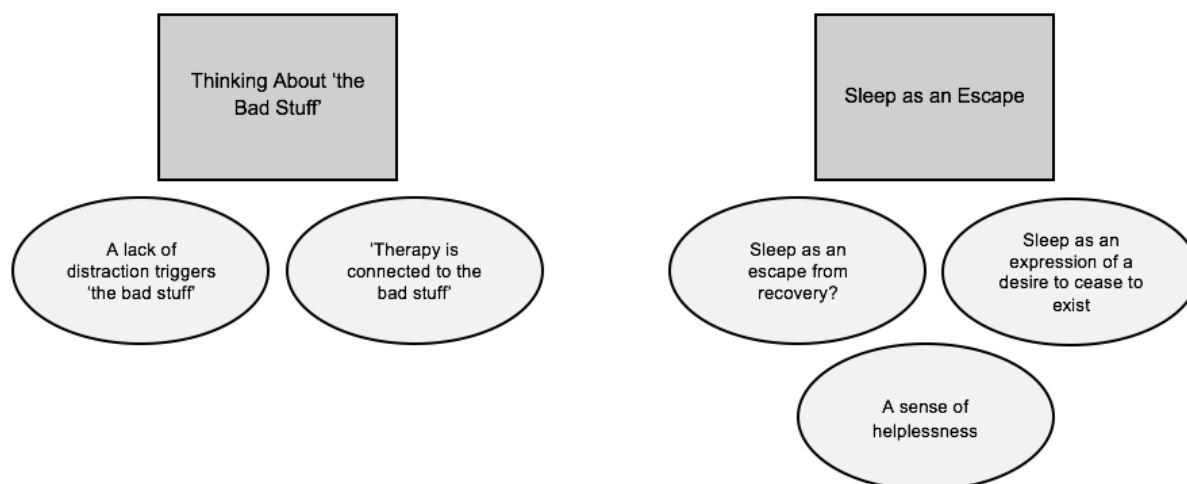
Ethical Considerations

Ethical approval for this study was granted by Cambridgeshire-2 Research Ethics Committee, Addenbrooke's Hospital Cambridge, UK (REC Ref: 09/H0308/137). Concordant with ethical requirements, the data was pseudonymised and all identifying details were removed.

Results

Although most adolescents struggled with a range of sleeping difficulties, there were noticeable differences in what type of sleeping difficulty they focused on in their narratives, with two broad themes emerging. The themes are interrelated in that they both include 'escape' as an overarching theme, though each differs in its manifestation. The theme 'thinking about 'the bad stuff'' captures the experience of sleep problems as a result of wanting to escape intrusive thoughts arising when trying to fall asleep, and was found primarily in the interviews with those who focused on experiences of insomnia; whereas 'sleep as an escape' describes the experience of a desire to use sleep as an escape from negative feelings, and was most common among those who focused on their experiences of daytime sleepiness. Both themes present some implications for treatment. The themes and their subthemes are illustrated in Figure 1 below.

Figure 1 Final Thematic Map: Themes and Subthemes



Theme 1: ‘Thinking About ‘the Bad Stuff’

A pattern that was identified across adolescents who focused on struggles with insomnia was how the sleep setting evoked painful thoughts and feelings that prevented them from being able to fall asleep. Some of these adolescents also responded less well to therapy, as the therapy appeared to evoke difficult thoughts and feelings in a similar fashion to the sleep setting. For this group, two subthemes were identified: ‘a lack of distraction triggers ‘the bad stuff’ and ‘therapy is connected to the bad stuff’.

1a. A lack of distraction triggers ‘the bad stuff’.

Adolescents who focused on struggles with insomnia appeared to experience their sleep problems as resulting from a surge of painful thoughts and feelings when trying to fall asleep, suggesting that characteristics of the sleep setting might evoke unwanted thoughts and feelings in some adolescents.

I dunno, like, when I'm trying to sleep, and you know, in the dark, when there's no one else, and your eyes are closed, and then all these thoughts swirl around in your head (Viola)

Viola describes how ‘being in the dark’, ‘being alone’ and ‘having her eyes closed’ evoke painful thoughts. These descriptions all point towards a lack of external stimuli or distraction. This may suggest that the sleep setting is characterized by a lack of distraction thus providing the opportunity for difficult thoughts and feelings to rush in.

A number of adolescents described experiencing problems with falling asleep due to flashbacks of traumatic memories, another manifestation of intrusive thoughts and feelings:

Um, I wasn't sleeping like I —I'd just like sleep, and then I just had disturbed sleep all night long, um, and, like, I remember then I kept getting flash backs (Tamara)

It was slightly different because we had a traffic accident, and I kept getting anxiety, like when I go to sleep, and I'd get really bad panic attacks (Kayla)

Overall, the experience of sleep problems in adolescents who focused on struggles with insomnia appeared to be explained by how the sleep setting evoked difficult thoughts and feelings. The sleep setting appears to be characterized by a lack of distraction that in turn allows intrusive thoughts and feelings to arise.

1b. 'Therapy is connected to the bad stuff'.

Adolescents who experienced problems falling asleep due to painful thoughts and feelings often described how therapy was not helpful to them as it also triggered painful thoughts and feelings. This suggests that the sleep and therapy settings might have important similarities for some adolescents. For example, when the interviewer asked Jessie how the therapy could have been improved, her response indicated that she wanted the therapy to provide a space where she could be distracted from her problems rather than focusing on them. Jessie further suggested a potential link between the therapy and sleep settings when she was asked how therapy could have been different:

Could've at least once in a while, mm, play fun games of stuff...something that'll keep my mind off it, like, 'cause my mind was just, eh, a crazy roller coaster ride back then. It was...it was ridiculous, it was horrible, it was like constantly goin' and goin' and goin' – never stopped... It never shut down, it was just, like, even when I wanted to go to sleep, ... my mind never shut down (Jessie)

When the interviewer explored this comment further, Jessie gave the following response:

If they didn't constantly ask about my dad... 'cause, like, every time they asked about my nan I was cryin', every time they asked about my dad I got really angry, so I was like, just don't do this to me every week, it's not gonna change at all (Jessie)

Jessie's account of why she felt therapy was difficult for her suggests that this was because the therapy evoked painful thoughts and feelings that she did not want to attend to; as such, it had some similarity to the way she described trying to get to sleep where again she was plagued by intrusive thoughts and feelings.

Viola provides a more direct link between the therapy and sleep settings. She also talked about how she experienced the therapy as being connected with painful thoughts that she preferred not to think about, and elaborated on this when asked about her memories of therapy:

I do [still think about it], I mean not as much as I might have if I didn't, you know, like, consciously try not to, but I still do, obviously – it's a part of your life, you can't really like...block it out – not that I want to block the therapy part out, I just mean the fact that it's so, like, connected to that, like, yeah, to the bad stuff (Viola)

Wendy's narrative offers insight into how therapy may help adolescents who wish to avoid confronting their problems. She also links the therapy and sleep settings by describing how both evoke painful thoughts. However, Wendy appreciated learning about relaxation methods which helped her fall asleep.

I didn't enjoy going [to the therapy sessions] – purely because I didn't wanna talk about it ... [The therapist] gave me a few things and ideas of things to do that had helped me, calm me, and help me sleep because I would be really tired, but cos I'm thinking about things all night, all night, I'd be up all night ... He helped with that and relaxation, like methods ... Like the sort of, like, practical things I could do to - and they did really help. Um, there's ... a CD ..., and I only listen – I still listen to it now ... It's supposed to relax your muscles, and, like, clear your mind (Wendy)

Theme 2: Sleep as an Escape

The desire to use sleep as an escape seemed to be linked to a sense of helplessness for adolescents who focused on struggles with daytime sleepiness. In these cases, the desire to sleep appeared to be an expression of a wish to cease to exist. Further, these adolescents also expressed an aversion to light in relation to their sleep problems, and it is striking that none of these participants described overcoming their depression in the post-therapy interviews, with 3 out of 7 dropping out of therapy whilst the rest only attended sporadically. The subthemes associated with 'sleep as an escape' are: 'a sense of helplessness', 'sleep as an expression of a wish to cease to exist' and 'sleep as an escape from recovery?'

2a. A sense of helplessness.

Among adolescents who spoke about struggling with daytime sleepiness, a sense of helplessness was also present in their narratives, whereby the desire to sleep excessively appeared to express a wish to escape.

Um, I couldn't get out of bed, I wouldn't- couldn't wash myself, I couldn't feed myself ... I just wanted to sleep, I just wanted to lie in my bed (Mary)

Ummm...I couldn't do anythin' ... I'd just wake up, and feel like sleepin' all day...stayin' in... couldn't do anythin'...just like a black cloud over my head (Betty)

The sense of helplessness is particularly evidenced by the excessive uses of the term 'couldn't'. These adolescents described experiencing difficulties in meeting basic needs which further enhanced feelings of helplessness. Sleeping appeared to be an attempt to escape from their difficulties.

In other narratives, the desire to use sleep as an escape was explicit:

I just wanted to sleep. I didn't want get up and face the world (Lilly)

I used to cancel everything – didn't want to watch films, didn't want anything, I just wanted to sleep all the time because I knew that if I stayed awake I'd just feel sad, and I didn't want to feel sad, so ... I did not want to wake up or face the facts that this was my life ... Sleeping is kind of, like, you're not conscious of anything else (Anna)

A sense of helplessness is also present in these latter accounts, as both young people state that they preferred sleep to facing their waking lives. This might suggest that for some adolescents sleep problems represent an inability to face difficult thoughts, and feelings and also an inability to engage in their own lives. They thus seek escape from both, an interpretation which finds support in the following subtheme.

2b. Sleep as an expression of a wish to cease to exist.

Some adolescents provided narratives that clearly revealed a deeper sense of helplessness, in which the desire to sleep excessively appeared to express a wish to escape from existence itself:

I didn't really wanna do anything ... I just wanted to sleep all the time...and it was like...I didn't wanna exist anymore (Hannah)

I didn't care, I couldn't-, I completely couldn't speak to people, I didn't want to be around anyone, I didn't...I don't know, I didn't like...I didn't wanna get up, like, I wanted to fall asleep and just not wake up (Robert)

Both Hannah and Robert express a desire to use sleep to escape from their lives. Hannah is explicit in expressing a wish to cease existing. Similarly, Robert states that he would prefer not to wake up, illustrating quite clearly that excessive sleep represented a wish to cease to exist. This suggests that depression makes every waking moment unbearable for some adolescents.

2c. Sleep as an escape from recovery?

A few adolescents described an aversion to light, which seemed to be related to both their sleep problems and to the therapy. This finding is interesting, as a number of participants described their depression as a 'darkness', indicating that the 'light' might symbolise recovery.

A potential link between light aversion and resistance to recovery is provided by Lilly. When asked about her experience of the therapy, Lilly gave the following response:

It just made me wanna fall asleep...and it was just, I don't know... just...I don't know, there was something about it, like, yeah, it was really bright, but... like, that- you know that- horrible kind of bright, and...like, it made me not wanna talk, like, it just made me feel so drowsy (Lilly)

Lilly describes the therapy room as 'really bright', a characteristic of the therapy setting that made her 'just wanna fall asleep' and 'feel drowsy'. This might suggest that Lilly wanted to escape from the therapy setting, and sleep was one of the mechanisms she used to try to remove herself from pain.

This interpretation is supported by Aurora's account of her sleeping problems. Aurora never began therapy, instead choosing to use sleep to escape her difficulties. Interestingly she also expressed a vehement aversion to light.

Now my life is just pretty much sleeping all the time, lying in my bed, didn't want to open the curtains, hate light ... My mum will come in in the morning, open the curtains, and the window, put on the light and say, you know: "Come on, it's a really lovely day outside, it's really sunny, why don't you go out with one of your friends?" ... And I would just, you know, put the cover over my head kind of thing, don't wanna go out when it's sunny. Don't like my curtains open. It hurts my eyes. And the light in my room is just too bright – just don't like it. I don't like the light (Aurora)

Aurora appears to be entrenched in her depression. She avoids 'the light' and describes 'sleeping all the time'. 'Putting the cover over her head' is her response to her mother inviting her out into a 'lovely' and 'sunny' day. We might wonder whether for Aurora the very idea of therapy was analogous to opening 'her curtains' and shining 'light' onto her problems – something that her narrative suggests that she had no desire to do.

This suggests a potential relationship between light aversion, excessive sleep and resistance to seeking help, with light aversion symbolising resistance and excessive sleep being an avoidance mechanism. This raises the question of whether some adolescents with depression use sleep to escape from confronting their problems, as opposed to simply escaping from their difficulties.

Discussion

This study aimed to explore the experience of sleep problems in adolescents with depression in the context of a clinical trial evaluating three psychological therapies. This is the first study to qualitatively explore the relationship between sleep and depression in adolescents by focusing on general sleep problems and in the context of treatments targeting depression. Two themes were identified, with one capturing the experience of insomnia and the other daytime sleepiness.

Different types of challenges to engaging with treatment appeared to be associated with these distinct types of sleep problems. Experiences of insomnia were characterised by a surge of negative thoughts and feelings at bedtime, caused by a lack of distraction. This is consistent with previous findings suggesting that bedtime rumination causes difficulties falling asleep (Conroy, et al., 2017; Waite, et al., 2018), although a lack of distraction has not previously been highlighted as the potential mechanism.

The analysis of the participants' interviews identified a link between how they spoke about their sleep difficulties and how they spoke about therapy. For some adolescents, both settings (i.e. trying to get to sleep at night and being in therapy) evoked difficult thoughts and feelings that they wanted to avoid. Working through negative affect is generally regarded to be considerably beneficial in alleviating mental health difficulties (Freud, 1958; Greenberg, 2002), and based on this widely held notion, one might hope that these adolescents would find help in exploring their feelings. However, the findings suggest that participants in this study did not always feel that they benefitted from talking about their difficulties in therapy, as they found it could have a similar effect to rumination. Previous research has found that individuals with depression who struggle with rumination often do not improve when talking about their problems (Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008). On the contrary, focusing on negative affect both maintains and increases difficult thoughts and feelings in these patients (Nolen-Hoeksema, 2000; Rusting & Nolen-Hoeksema, 1998). The question is then how ruminative patients can face their difficult feelings in a way that is helpful. One possibility could be the use of relaxation methods – particularly mindfulness approaches, which have been shown to both decrease rumination and improve sleep (Howell, Digdon, Buro, & Sheptycki, 2008; Parmentier, et al., 2019; Segal, Williams, & Teasdale, 2002).

The desire to use sleep as an escape was also identified in this study, and this appeared to manifest to varying extents. A sense of helplessness was present in many adolescents' accounts, and for some participants, this appeared to extend to a desire to cease to exist. This finding is compatible with Littlewood et al.'s (2016) study which showed that some individuals experience sleep as an escape from their waking life problems, and that some even used sleep as an alternative to suicide (Littlewood, Gooding, Kyle, Pratt, & Peters, 2016).

Nonetheless, the present findings are novel in that they emphasise the role of helplessness in escaping through sleep – independent of suicidality. Although this role of sleep has not previously been proposed in relation to helplessness and depression, the link between helplessness and depression has been extensively documented (Maier & Seligman, 2016). Seligman's (1974) theory of learned helplessness suggests that depression occurs when individuals learn that their efforts to control aversive stimuli do not make a difference. The perceived lack of control leads these individuals to adopt a helpless attitude in the face of difficulties (Seligman, 1974; Sherman, Sacquitne, & Petty, 1982). The present study raises the question of whether feelings of helplessness may trigger the desire to use sleep as an escape in the face of perceived stressors. If this is the case, then treatment targeting a sense of underlying helplessness may alleviate sleep problems in these adolescents. Future research should further explore the link between helplessness and sleepiness, and whether sleepiness might be an alternative stress response within this relationship.

A potential relationship between daytime sleepiness, light aversion and resistance to recovery of depression was further suggested. This is the first time such a relationship has been proposed in the literature. However, research has suggested a link between depression, sleep problems and photophobia, or aversion to light (Llop, et al., 2016), although this link has not been rigorously researched (Digre & Brennan, 2012; Seggie, Canny, Mai, McCrank, & Waring, 1989). The relationship between depression, sleep and photophobia is currently suggested to be multidirectional, in that each can impact each other (Llop, et al., 2016). In cases where affective disorders precede photophobia, Harth (2009) proposes that light sensitivity might have a 'symbolic meaning', giving cause for avoidance behaviours (Harth, Gieler, Kusnir, & Tausk, 2009). This supports the present study's suggestion that light aversion might symbolise resistance to recovery in some adolescents with depression, with sleep being the escape mechanism. However, more research is needed to establish this relationship, so at this stage any treatment implications remain unclear.

The present study contributes to the understanding of how adolescents with depression experience sleep problems, and how treatment targeting depression might help this group. However, certain limitations should be noted. The data was collected from interviews where sleep problems were not a specific focus, so it is possible that other participants may have had different experiences with sleep which were not actively explored in the semi-structured interviews. The secondary nature of the data may imply that the findings are only representative of adolescents who experience more severe depression, given the link between depression severity and sleep problems (Liu, et al., 2007). This makes it difficult to generalize the findings to other groups of adolescents with depression, such as those with low-level depression. The problem of generalizability is also evident in the small

study sample, which included only 12 adolescents, who were not necessarily representative of the wider study population. Further, the sample size in this study was too small to allow any meaningful exploration of gender and age differences in sleeping problems. Studies show that females report more sleep disturbances compared to males (Krishnan & Collop, 2006; Lee, McEnany, & Weekes, 1999), and that sleep problems increase with age (Krishnan & Collop, 2006). Future research should take these limitations into account. However, the objective was to advance the current understanding of sleep problems and treatment in adolescents with depression – a largely underexplored research area. The findings presented are argued to provide a resource to achieve this objective.

This study found that the experience of sleep problems in some adolescents with depression can be understood as the expression of an overarching desire to escape. This manifested in different ways, with some adolescents struggling to fall asleep as a result of wanting to escape negative affect arising at bedtime, and others using sleep as an escape from negative affect. Some used sleep as an escape from life itself – and others appeared to use sleep as an escape from recovery. The findings suggest that the characteristics of treatment need to be considered when sleep problems are a significant feature of depression. For example, the findings indicate that some adolescents might benefit from treatment targeting rumination, whereas others may benefit more from therapy addressing feelings of helplessness. Rather than developing generic guidelines for addressing sleep difficulties in the context of adolescent depression, it may be important to first understand the underlying meaning and mechanisms of the sleep difficulties for each individual, and then target these as part of treatment. Overall, this implies that a personalized approach to treatment may be necessary, and that specific symptoms of depression should be explored when delivering therapy – reflecting the nuance in adolescents’ experience of both depression and sleep problems, and the relationship between them.

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