

# Reintroducing rest: evaluation of a patient-guided sleep workbook in a community mental health team setting

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## Abstract

**Purpose** – Sleep disturbance is a common difficulty in the general population. It has become particularly prevalent in the context of disruption to routine brought about by the COVID-19 pandemic. The purpose of this study was to trial a patient-guided “sleep workbook” intervention, which was developed by multidisciplinary team members, combining principles of sleep hygiene education and cognitive behavioural therapy for insomnia behavioural strategies, and to evaluate its efficacy in a mixed-methods study.

**Design/methodology/approach** – Service users of the community mental health service were invited to participate. A total of 30 service users agreed to participate. A total of 15 participants completed both the intervention and the mixed-methods survey. Four participated in the focus group. Descriptive and inferential statistics were performed on the collected quantitative data. A thematic analysis was carried out of qualitative survey responses and focus group discourse.

**Findings** – There was a statistically and clinically significant improvement in quantity and quality of sleep following intervention. Mean hours of sleep prior to the intervention was 4.4 hours [standard deviation (SD) = 2.2], compared to 6.1 hours (SD = 2.2) afterwards ( $p = 0.003$ ). Quality of sleep improved from a mean of 2.5 (SD = 2.1) to 6.1 (SD = 2.3) following the intervention ( $p = <0.001$ ). Four themes were developed using the qualitative data: “under-recognition of sleep difficulties”, “ruminations”, “practical utility” and “therapeutic autonomy”.

**Originality/value** – There is a growing need for occupational therapists and clinicians to provide interventions for patients with sleep difficulties and to develop sleep management practice. This patient-guided sleep workbook may be an effective intervention for these patients.

**Keywords** Psychiatry, Insomnia, Coronavirus

**Paper type** Research paper

## Introduction

Sleep in occupational therapy (OT) is conceptualised as a restorative occupation; meaning good sleep supports the formation of self-care, productivity and leisure during the day (Ho and Siu, 2018). Insomnia symptoms, including difficulty initiating and maintaining sleep, early morning waking and non-restorative sleep, have an annual prevalence of 35%-50% in the general population (Walsh *et al.*, 2011). Sleep disturbance is common in the psychiatric patient population, as a symptom, consequence and contributing factor in mental illness (Freeman *et al.*, 2020). Sleep problems have become particularly prevalent in the general population recently, in the context of disruption to routine brought about by the COVID-19 pandemic (Franceschini *et al.*, 2020).

The American OT Association, in updating the OT practice framework in 2008, reclassified sleep to an occupational domain (Fung *et al.*, 2013). Meyer (1977), as cited in Green (2008), recognised sleep as one of the Big Four factors individuals should balance for the maintenance of health. Despite this, sleep has a limited profile in OT. Many authors

note the paucity of research in the area of sleep and OT (Ho and Siu, 2018; Green, 2008; Fung *et al.*, 2013).

Pharmacological and non-pharmacological methods are used to manage sleep difficulties. The most commonly used non-pharmacological method is sleep hygiene education (Sivertsen

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**Ethical standards:** The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional committee on human experimentation with the Helsinki Declaration of 1975, as revised in 2008. Ethical approval was received from St. James's Hospital and Tallaght University Hospital's Research Ethics Committee. Written informed consent was obtained from participants.

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*et al.*, 2010), which provides information about optimising the sleep environment and developing and maintaining a sleep schedule (Ward, 2001). While improving individual behaviours is shown to improve sleep, there is inconsistent evidence supporting sleep hygiene education as an effective monotherapy (Morgenthaler *et al.*, 2006). Other non-pharmacological interventions, such as cognitive behavioural therapy for insomnia (CBT-I) – a treatment that augments sleep hygiene with a behavioural strategy – have been shown to be more effective (Qaseem *et al.*, 2016).

Like many community mental health teams (CMHT), this CMHT has abundant expertise but its resources are overextended delivering existing therapeutic programmes. CMHTs comprise of psychiatrists, nurses, psychologists, OTs and social workers. Most CMHT members can offer sleep hygiene education, however it is often psychologists or psychiatrists who offer CBT-I. Furthermore, CMHTs have been subject to COVID-19 restrictions, so options to combat the concurrent increase in insomnia have been limited to no-contact interventions. This pilot intervention sought to trial a patient-guided “sleep workbook” intervention, combining principles of sleep hygiene education and CBT-I behavioural strategies. Our aim was to implement this intervention and to evaluate its efficacy in a mixed-methods study.

### Context of this research

CMHT members, including psychiatry, psychology and OT, collaborated to develop a sleep workbook, following review of published resources within literature. The local service user’s forum was consulted for feedback.

The aim of the workbook was to improve understanding of sleep and insomnia, to develop helpful behaviours and to improve the length and quality of sleep. The workbook is a 13-page document that was given to participants.

The sleep workbook is designed to engage users in an analysis of their sleep patterns and is divided into sections:

- Section 1 provides education: the importance of sleep, stages of sleep, common sleep problems, sleep hygiene, positive sleep habits and sleep diaries.
- Section 2 is a guide for patient-led sleep restructuring, a component of CBT-I. This process is designed to re-programme your sleep cycle, initially by rescheduling your time in bed, and then gradually increasing your time spent in bed.

## Methods

### Participants

Service users were invited to participate in a pilot interventional trial and evaluation using mixed qualitative and quantitative methods. Service users eligible for inclusion were those reporting sleep difficulties. Service users were excluded if their level of English language literacy was inadequate. These individuals were offered clinician-guided support of the material contained in the workbook, so that they could still avail of an intervention.

A total of 30 service users agreed to participate. They were provided with the sleep workbook along with an explanation of the intervention and study. Participants were encouraged to read and engage with the sleep workbook independently. No additional education on the contents of the workbook was

provided by the clinician. They were given a week to consider the study prior to agreeing and provided informed, written consent.

Of the 30 participants, 15 completed both the intervention and the mixed-methods survey. Four participated in the focus group. Of the 15 that did not participate in follow-up, 10 declined to participate and five were uncontactable.

## Data collection

### Survey

Each participant had given consent to be contacted three months after the intervention. At that stage, they were asked to complete a survey collecting quantitative and qualitative data, eliciting information about demographics, experience of using the sleep workbook and benefits of using the sleep workbook. Information about using the sleep workbook was collected using four-point Likert scales. Benefit of sleep workbook was measured using number of hours of sleep before and after the intervention, and quality of sleep before and after, using a one to ten visual analogue scale. Qualitative data was elicited using open questions and free text sections.

### Focus group

Respondents were invited to participate in a focus group to explore in more detail and depth their experience of the intervention. The focus group was facilitated by researchers with experience disseminating the workbook. A semi-structured interview was developed and used to lead participants through discussion around their experience of the workbook. Participants were given a week to consider this part of the study before providing informed, written consent. The audio of the session was recorded with consent.

## Data analysis

Descriptive and inferential statistics were performed on the quantitative data.

Quantity (number of hours) and quality (subjective reporting from one to ten on a visual analogue scale) of sleep were compared the week before and three months after the intervention. Shapiro–Wilk tests were performed on the data. Data was analysed using the mean and standard deviation for effect size. A two-tailed paired t-test was used to evaluate a statistical significance in the change in quantity and quality of sleep before and after the intervention.

Utility of the different items in the workbook was measured using four-point Likert scales. This data was analysed using descriptive statistics of frequencies.

A thematic analysis of the qualitative survey responses and focus group discourse was carried out by two researchers in parallel (PC, MS). The data was anonymised through use of pseudonyms. According to Braun and Clarke (as cited in Kiger and Varpio, 2020) thematic analysis is an appropriate and powerful method to use when seeking to understand a set of experiences, thoughts, or behaviours across a data set. The six-step framework for thematic analysis was utilised, adopting an inductive approach and a recursive process (Braun and Clarke, 2022). Both researchers initially familiarised themselves with the data. The data was coded using a coding template. After coding the data independently (PC and MS), collaboration and wider discourse amongst all authors was utilised to develop

independent themes. The themes were reviewed and clearly defined to ensure they accurately reflected the data and contributed to answering the overall research objectives (Maguire and Delahunt, 2017).

## Results

### Demographics

Of the 30 participants agreeable to the intervention and survey, 15 completed the survey, resulting in a 50% response rate. Four survey respondents also participated in the focus group. Demographic data for the 15 participants who completed the survey is presented in Table 1.

### Survey findings

#### Effectiveness of sleep workbook

There was a statistically and clinically significant improvement in quantity and quality of sleep. Mean hours of sleep prior to the intervention was 4.4 hours [standard deviation (SD) = 2.2], compared to 6.1 hours (SD = 2.2) afterwards ( $p = 0.003$ ). Quality of sleep improved from a mean of 2.5 (SD = 2.1) to 6.1 (SD = 2.3) following the intervention ( $p = <0.001$ ). Shapiro–Wilk tests of sleep quantity pre- and post-intervention, and sleep quality pre- and post-intervention were non-significant, indicating normal data distribution ( $p = 0.420$ ,  $p = 0.695$ ,  $p = 0.178$ ,  $p = 0.506$ , respectively).

#### Using the sleep workbook

All respondents rated the layout of the workbook as “good” (66.7%) or “very good” (33.3%). Thirteen participants (86.7%) reported that the length of the workbook was at least “good”. The clarity of the workbook was described as “very good” by nine participants (60%), and as “good” by five participants (33.3%). Ten participants (66.7%) reported that the relevance of the workbook was “very good”, with the remaining five participants (33.3%) describing it as “good”.

Participants also rated the sections in the workbook. All respondents rated the section on “frequently asked questions” as “helpful” (46.7%) or “very helpful” (53.3%). Sections on the importance of sleep, common sleep problems and tips to fall asleep were all described as “helpful” by seven participants (46.7%) and “very helpful” by six participants (40%). Eight participants (53.3%) reported that the section on sleep stages was “very helpful”. The section on positive sleep habits was described as “helpful” by six participants (40%) and “very helpful” by seven participants (46.7%).

### Qualitative data

Four themes were developed using the qualitative data elicited from open survey questions and the focus group: “under-recognition of sleep difficulties”, “ruminations”, “practical utility” and “therapeutic autonomy”.

#### Under-recognition of sleep difficulties

Some participants reported that they had not previously considered the importance of sleep. They described that they “didn’t understand how important it was to get sleep” and noted that their mental health improved when their sleep improved. Some participants, while recognising that their

doctor was receptive to their sleep complaints, had not mentioned it because they “didn’t think it was a problem that [they] needed to share with [their] doctor” and considered it an unrelated issue to their psychiatric difficulties.

### Night-time ruminations

Participants highlighted that ruminating was a key factor interfering with sleep. One of the focus group participants stated that their “problem is over-analysing [...] thinking about the worst-case scenario [...] what’s going to happen the next day”. Participants noted that “as soon as my head hits the pillow my head is going 90” and “everything comes into your head”.

### Practical utility of workbook

Most participants described the workbook as useful and did not suggest major changes to the workbook. Two subthemes were identified; “consistency of use” and “ease of use”.

Regarding “ease of use”, most participants had positive comments, describing the workbook as a “good guide” and “really positive”. The practicalities of using a printed document were highlighted with certain participants having it bound “into a book which made it easier to turn the pages”. During focus group discussion, all participants agreed that receiving some additional psychoeducation from a team member would add further benefit to the workbook.

Regarding “consistency of use”, multiple participants noted the importance of consistent use of the workbook to maintain improvements in sleep. Some participants had difficulty with this aspect stating “consistency was the main issue” and others reported the need to “re-read the workbook” and the expectation that they would “look back on it if sleep deteriorates in the future”.

### Therapeutic autonomy

As evident from quantitative findings, participants found different parts of the workbook helpful and felt the need to tailor the workbook to their individual difficulties. Respondents widely reported that they would prefer to manage their sleep through non-medication means. Previous experience of medication led them to feel that sleeping tablets were “a crutch” and that “it wasn’t a real sleep”. Participants noted “lots of different [sleep hygiene] techniques to try”, “not everything applies” and that finding what worked for them involved “trial and error”. (Table 2)

**Table 1** Demographics and diagnoses of study participants

Demographics	
Age	Years
Median (Min, Max)	37 (19,67) <i>n</i> = 15 (9%)
Sex	
Female	8 (53.3%)
Male	7 (46.7%)
Diagnosis	
Mood disorder	5 (33.3%)
Psychotic disorder	1 (6.7%)
Personality disorder	2 (13.3%)
Neurotic and stress related disorders	3 (20%)
Other	4 (26.7%)

Table 2 Qualitative data: themes and quotations

Theme	(Quotations)
Under-recognition of sleep difficulties	<ul style="list-style-type: none"> <li>• “I didn’t understand how important it was to get sleep’</li> <li>• “At the start I really didn’t think it was a problem I needed to share with the doctors. . . I was thinking I’m depressed, I’m this, I’m that. . . I never thought to say my sleep is gone’</li> </ul>
Ruminations	<ul style="list-style-type: none"> <li>• “My problem is over analysing . . . in bed my brain keeps going; thinking about the worst case scenario . . . what’s going to happen the next day”.</li> <li>• “as soon as my head hits the pillow my head is going 90”</li> <li>• “found it useful to put a label on racing thoughts”</li> </ul>
Clinical utility	
Ease of use	<ul style="list-style-type: none"> <li>• “good basics”</li> <li>• “good to identify where the problem is”</li> <li>• “not too scientific”</li> </ul>
Consistency	<ul style="list-style-type: none"> <li>• “consistency was the main issue”</li> <li>• “need to re-read the workbook to make it useful”</li> <li>• “I am glad to have the sleep workbook that I can look back on if my sleep deteriorated in the future”</li> </ul>
Therapeutic Autonomy	<ul style="list-style-type: none"> <li>• “lots of different techniques . . . not everything applies”</li> <li>• “a customisation thing . . . focus on your problem rather than the others”</li> <li>• “sometimes one thing works and when I try it again it might not work . . . good to have a variety of things to try from the workbook”</li> </ul>

## Discussion

Since the COVID-19 pandemic, insomnia has become increasingly common (Franceschini *et al.*, 2020), and treatment options have been limited by COVID-19 restrictions. This study trialled a more advanced intervention than sleep hygiene education that can be administered within the confines of resource limitations and mandatory restrictions in face-to-face contact and explored the experience of sleep difficulties and the intervention using a mixed-methods study.

### Experiencing sleep difficulties

Participants suffered with considerable sleep difficulties, reporting a mean of 4.4 hours sleep per night prior to the intervention. This is in keeping with previous studies, which report that people with mental health problems experience reduced sleep efficiency and total sleep time (Benca *et al.*, 1992). Much of the distress surrounding insomnia related to excessive night-time worrying. This correlates with previous literature which notes that repetitive thought is a key component in the aetiology of sleep disturbance and stating that nearly all insomnia models now highlight worry as a precipitant of sleep disturbance (Pillai and Drake, 2015). Lichstein and Rosenthal (1980) indicate that individuals with insomnia were ten times more likely to attribute their sleep disturbance to cognitive factors than to somatic complaints. Participants in our study sought strategies to manage ruminations, using techniques from the workbook and reported finding it helpful to “put a name on it”.

Participants described feeling that insomnia was not something they should mention to the doctor. In fact, while recognised as a common problem in the psychiatric patient population, often insomnia is seen as “secondary” or less important when compared to a diagnosis of a major mental illness (Harvey, 2001) and thus the management of sleep

disturbance is infrequently at the forefront of a clinician’s mind. This is a clinically important oversight because insomnia is known to exacerbate distress in mental illness (Krystal, 2012).

### Attitudes towards treatment

Focus group participants stated they would prefer to tackle sleep difficulties with a psychotherapeutic rather than a pharmacological approach. The desire for a psychotherapeutic approach is mirrored in the American and European guidelines for the management of insomnia, which recommend pharmacological intervention is only offered if psychological interventions are ineffective or unavailable (Qaseem *et al.*, 2016; Riemann *et al.*, 2017). However, interestingly, prescriptions for sleep medications have increased exponentially in recent decades. (Ford *et al.*, 2014). This discrepancy between guidelines and clinical practice may be due to a lack of availability of CBT-I (Espie *et al.*, 2012), secondary to a lack of trained therapists and the relative expense of providing CBT-I (Griffiths *et al.*, 2006; Perils and Smith, 2008) and highlights the necessity for resource-efficient and efficacious interventions.

### Experience of using the sleep workbook

While all respondents were favourable in their feedback of the intervention, the type and extent of engagement varied between individuals. This is in keeping with the theme of “therapeutic autonomy”. Stepanski and Wyatt (2003) note that there may be significant individual differences among insomniacs regarding their sensitivity to violation of some sleep hygiene behaviours. Respondents in this study noted that “not one size fits all” and that it involved “trial and error”. Hauri (1993) also notes that “not every insomniac should be treated like every other” and that advice should be individualized. He described the effectiveness of customized sleep hygiene recommendations and, doing so, demonstrated improved sleep in participants at one, three and six months after treatment (Hauri, 1993). This



correlated with feedback received in this study; participants noting that they felt that it was a “customisation thing [...] focus on your problem rather than the others”. This desire to be therapeutically independent and empowered reflects national guidelines around recovery in mental health, which underline the importance of patient-centred interventions (HSE, 2017)

### Usefulness of sleep workbook in clinical setting

The quantitative findings demonstrate the sleep workbook to be an effective intervention in patients with a range of diagnoses. This is in keeping with previous research, which demonstrates improvement in sleep in participants using a self-help book, compared to a sleep hygiene education sheet (Bjorvatn *et al.*, 2011), in a non-psychiatric population. Although it is recognised that sleep problems are prevalent in patients with psychiatric problems, many CMHTs have challenges with a lack of availability of CBT-I. Faulkner and Mairs (2015) report an urgent need to identify, design and evaluate OT assessments and interventions to address sleep in mental health settings. Furthermore, face-to-face restrictions surrounding this intervention prompted us to consider an intervention that would have minimal or no-contact, but could still engage participants meaningfully. In this context, our sleep workbook intervention was developed. It provides all the recognised benefits of sleep hygiene education, such as immediate availability and cost efficiency (Irish *et al.*, 2015), in addition to being clinically efficacious. We acknowledge the potential added benefit of having a clinician assist the person in picking out individual components to focus on, as was highlighted by participants who suggested that even a brief, once-off overview with a clinician would have been beneficial. Leland *et al.* (2014) noted that OTs are uniquely positioned to address sleep problems in a holistic manner to promote health and quality of life. Having established the benefits of the workbook in this pilot study, we recommend that a further, larger interventional study be carried out to compare the relative benefits of a patient-guided sleep workbook intervention (such as this) versus an intervention that is co-led by patient and clinician, to determine whether the benefit of clinician involvement would be of sufficient magnitude to devote additional resources. However, it is possible that mandatory social restrictions may return, and the trend of remote working is likely to continue, so a readily available and clinically efficacious no-contact treatment option will be a valuable resource.

### Limitations

Of the 30 service users that agreed to participate, 50% returned the survey, with four participating in the focus group. Although the response rate was lower than desired, this is an adequate sample size for a pilot study, with previous literature recommending around 12 participants (Julious, 2005). It is recommended that qualitative studies of this magnitude aim for 2–4 participants in focus groups and 10 participants for participant-generated text (Fugard and Potts, 2015). Therefore, the number of respondents was appropriate for this kind of preliminary study and for a qualitative analysis. Furthermore, in spite of the 50% attrition, this study yielded results that were statistically and clinically significant.

A related limitation is the possibility of selection bias, where only the most motivated completed surveys. However, given the low resources required for this intervention, this is an acceptable shortcoming that does not negate the substantial benefits experienced by participants. Another limitation to consider is the possibility of social desirability bias, where participants may have had a subjective sense of perceived pressure for positive feedback as they were current service users.

### Conclusion

The results of evaluating the efficacy of our sleep workbook intervention are both positive and promising that this is an effective resource. It has been shown to be useful in clinical practice as it is a cost-neutral psychotherapeutic intervention that provides patients with therapeutic autonomy and improves quantity and quality of sleep. It is deliverable as a no-contact intervention, which could be of benefit in the coming years, with the possibility that repeated, social restrictions and remote working could be a feature of the Irish landscape for some time. COVID presents as a vicious cycle when it comes to sleep, increasing sleep related problems and reducing access to sleep interventions. This approach with a patient-guided sleep workbook may just be the key to breaking that cycle.

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