



Sleep And Mental Health

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13th March 2023

Introduction

The experience of a bad night's sleep, with the associated fatigue, cognitive symptoms and mood disturbance that ensues, is an almost universal human experience. That sleep is intimately linked to our psychological state, is borne out by our increased understanding of the functions of sleep, as well as our personal experience. Sleep is important for our emotional regulation, the perception of pain, and our emotional interpretation of neutral stimuli, amongst a myriad of other neurobiological and physiological functions.

This association is well-recognised in the world of psychiatry¹. While sleep problems and mental health disorders are both very common, the co-occurrence of these issues is much higher than by chance alone. Mental illness is found in about 15% of normal sleepers, but these rates are much higher in people with insomnia (40%) and profound sleepiness (hypersomnia) (46%)².

What has been historically less well recognised, is the nature of that relationship between sleep and mental health. The established view has in the past been that sleep disturbance is a symptom or a consequence of psychiatric disorders, and that sleep problems are a secondary phenomenon, reflective of the underlying psychiatric diagnosis. However, in recent years, evidence has accrued to point to the relationship between sleep and mental health as being bi-directional, i.e., while sleep is disturbed by psychiatric illness, psychiatric disorders are also potentially triggered or exacerbated by sleep disturbance. For example, persistent sleep issues in childhood increase the risk of anxiety disorders in adulthood by 60%³.

In this lecture, I will outline what we know about the association between sleep and three major classes of psychiatric disorders, and go on to describe opportunities for intervention.

Psychiatric Disorders

Depression

Sleep disturbance is considered a hallmark of depression, and indeed is one of the diagnostic criteria. In those individuals with a major depressive episode, over 90% have some form of sleep disturbance, most commonly insomnia, but also excessive sleepiness⁴. Studies have concluded that the sleep disturbance often precedes mood alterations, implying that the sleep disturbance is not simply a consequence of mood disturbance, but may be part of the underlying neurobiological basis of depression or may actually be a trigger of mood disturbance.

Other strands of evidence also point to this conclusion. Longitudinal studies suggest that insomnia is associated with an increased risk of subsequent depression. One large meta-analysis of over 150000 individuals showed that the presence of insomnia doubled the risk of developing depression⁵, while another suggested a three-fold risk⁶. This finding has also been replicated in children, with additional evidence to show that circadian rhythm may also be of significance; a delayed sleep phase (a delayed body clock, as is seen in night-owls) is a further risk factor for subsequent depression. 50% of people in remission for depression have ongoing sleep issues, while this is the case for 84% of people with ongoing depression⁷, suggesting that insomnia is not only a symptom, but may also be important in influencing recovery. Furthermore, the presence of insomnia has consistently been found to be an independent risk factor for suicidal ideation and suicide attempts⁸. A greater baseline disturbance of sleep predicts worse response to treatment.

These studies clearly demonstrate an association, but evidence that sleep disturbance worsens depression is strengthened by studies showing that the treatment of insomnia also results in an improvement in depressive symptoms. Indeed, studies of cognitive behavioural therapy (CBT)-based interventions for insomnia in those without a clinical diagnosis of depression, including some randomized controlled trials, have demonstrated moderate reductions in depressive symptoms with these sleep-focused treatments. Additionally, treatment of insomnia has been shown to reduce the likelihood of a depressive episode over the next year at least. In populations with major depression, there are fewer studies, but these all point to similar conclusions. These have shown that CBT for insomnia (CBTi) trends towards going into remission from depression, and one study showed that antidepressants and sleep hygiene advice had similar effects of depression as CBTi and placebo⁹. Yet another study shows that CBTi and CBT specifically for depression caused similar reductions in depressive symptoms.

Overall, research points to the importance of treating sleep disturbance in depression early, in order to increase the likelihood of depression remission and to lower suicidal ideation. Evening preference should also be treated.

Schizophrenia

Interest in the role of sleep in schizophrenia initially stemmed from observations in clinical practice that sleep is an extremely common complaint in schizophrenia, and that improved sleep seems to reduce delusions. A further clinical feature is that the breakdown of the normal circadian pattern of daytime wakefulness and night-time sleep is extremely prevalent in schizophrenia, with the development of an irregular sleep-wake circadian rhythm disorder.

In the general population, there is a clear association between sleep issues and psychosis. The presence of sleep problems doubles the odds of a psychotic experience, and insomnia correlates strongly with particular types of psychotic experience such as paranoia, hallucinations and thought disorganisation.

80% of patients with a first episode of psychosis report at least one sleep disorder¹⁰, with an average of three different types of sleep problems. Furthermore, in those individuals at high risk of psychosis, sleep difficulties and circadian rhythm abnormalities predict a poorer prognosis¹¹.

Sleep interventions in the general population imply that treating sleep reduces paranoia and hallucinatory experiences, and that sleep deprivation increases paranoia, hallucinations and thought disorganization. In patients with psychosis, data is far more limited, but CBT-based approaches to improve sleep have also shown improvements in other psychiatric symptoms too.

In contrast to other psychiatric disorders, our understanding of the role of sleep in schizophrenia lags behind, but certainly, as with other psychiatric disorders, the nature of the relationship is clear: it is not one of sleep being a symptom, but actually representing an opportunity for intervention.

Anxiety and Post-Traumatic Stress Disorder

The relationship between anxiety and sleep is very self-evident. At the core of anxiety is an exaggeration of perceived threat, with an associated level of vigilance, and physiological and psychological hyper-arousal. Similarly, insomnia represents a state of hypervigilance or hyperarousal. Indeed genetic studies suggest an extremely high overlap in the genetic influences for insomnia and anxiety. Approximately 75% of people with anxiety also report sleep disturbance.

Post-traumatic stress disorder (PTSD) also represents a hyperarousal state, with profound anxiety precipitated by environmental triggers, flashbacks, sleep disturbance and trauma-related nightmares. These nightmares often persist beyond the other symptoms of PTSD. Approximately 40% of PTSD sufferers have sleep initiation difficulties, 90% of issues with sleep maintenance and 50% have recurrent trauma-related nightmares.

That sleep should have an important role in anxiety and PTSD is perhaps explained by some strands of evidence from normal individuals. Sleep deprivation increases the expectancy of a negative stimulus: in a fear-conditioning study, subjects were taught to associate certain faces with an electric shock, and sleep deprivation increased the expectancy of a shock¹². Furthermore, impaired sleep, particularly rapid-eye movement (REM) sleep, is thought to play an important role in the extinction of fearful memories associated with daytime events, and REM sleep has been proposed as representing a form of overnight “therapy”¹³. A single night of sleep deprivation results in changes in brain activity similar to those seen in anxiety using functional magnetic resonance imaging.

In veterans, poor sleep prior or after a traumatic event is a strong predictor of the development of subsequent PTSD. Indeed, sleep interventions like CBTi can help treat PTSD symptoms, and conversely CBT for anxiety helps sleep, again supporting the view of a bi-directional relationship between sleep and mental health.

Other Examples

Several other sleep conditions that are fundamentally considered primarily neurological also exhibit clear associations with psychological status. These include the association between daytime stress and non-REM parasomnias, such as sleep-walking and confusional arousals, the role of anxiety and its treatment in sleep paralysis and associated hypnagogic hallucinations, night-eating syndrome/sleep-related eating disorder with anorexia nervosa and bulimia, and rarer dissociative disorders of sleep. Furthermore, clinical experience suggests a role for sleep in functional neurological disorder and non-epileptic seizure disorder.

Treatment of Sleep Disorders in Psychiatric Disorders

While there remains much further research to be undertaken, evidence points to the importance of identifying sleep disorders and their treatment independent of psychiatric therapy in the management of these disorders.

While sleep hygiene remains a mainstay of management, it is insufficient for the vast majority of people as a treatment for chronic insomnia or other sleep complaints, particularly in the context of psychiatric disorders.

The gold standard treatment for insomnia remains CBTi, although other non-drug based options exist, and may be adjuncts. These include acceptance and commitment therapy, autogenic training, and more specific therapies such as dream rescripting therapy or lucid dreaming therapy.

Some medications used widely in the treatment of psychiatric disorders may cause sleep to deteriorate rather than improve, and a better understanding of the influences of psychiatric pharmacological agents on sleep is fundamental to the management of these conditions. Additional therapies for the anchoring of circadian rhythms such as appropriately-timed melatonin and light therapy should be considered.

Finally, other sleep disorders such as obstructive sleep apnoea and periodic limb movement disorder should be addressed.

Conclusions

While this area of research remains in its infancy, it is clear that sleep is fundamental to good mental health. Furthermore, sleep disturbance is not simply a symptom of psychiatric conditions, and represents a treatable symptom that has important implications for proper treatment of co-morbid psychiatric complaints. Proper identification of sleep complaints, and their treatment, is likely very important for the prevention of psychiatric disorders later on in life, for the remission of psychiatric conditions, and for the reduction of suicidal ideation and suicide attempts. The management of sleep issues should be an integral part of any psychiatric intervention and should be considered a primary rather than secondary objective.

References and Further Reading

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