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Nightmares as a Paradigm for Studying the Effects of Stressors

Commentary on Sandman et al. Nightmares: prevalence among the Finnish general adult population and war veterans during 1972-2007. SLEEP 2013;36:1041-1050.

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What can large-scale epidemiological studies, such as the report by Sandman and colleagues[1] in this issue of *SLEEP*, contribute to knowledge about nightmares? First, these studies provide information about the prevalence of nightmares, which in Sandman et al. was about 5% in the general population, an estimate in accordance with previous studies.[2-5] From a clinical viewpoint, the first question is whether these figures really indicate the prevalence of nightmare disorder, which includes a marked impairment in social functioning in daily life.[6] Although this has been demonstrated for frequent nightmare sufferers,[7] carefully conducted field studies with clinical interviews are needed. The second clinical issue is whether the patients who suffer from nightmares are correctly diagnosed and sufficiently treated.[8] Two studies[9,10] indicate that, even in sleep centers, patients seeking help for other sleep disorders like insomnia or sleep-related breathing disorders were rarely diagnosed correctly for nightmare disorder, even though about 15% suffered from frequent nightmares. A recent population-based study elicited whether frequent nightmare sufferers actually sought professional help for their condition and the percentage was low (M. S., unpublished data, 2013). Another data set indicated that only one-third of the participants who sought professional help for their nightmares stated that this was helpful (M. S., unpublished data, 2013). It appears a lot of effort may be necessary to ensure that nightmare sufferers are correctly diagnosed and treated.

The second topic addressed by the study of Sandman et al.[1] is the change of nightmare prevalence over time. Although the number of frequent nightmare sufferers did not change, the percentage of persons with occasional nightmares increased over a time period of 35 years. This finding has to be interpreted with caution because the analyzed data came from several cross-sectional surveys. Longitudinal studies would be needed to investigate intra-individual fluctuations of nightmare frequency. Another analysis of several cross-sectional studies from 1956 to 2000 showed that the percentage of work-related dreams increased significantly with time—a finding that was interpreted as increased amount of stress related to professional life (e.g., finding a job, earning enough money).[11] As will be pointed out below, nightmares might be an easy-to-elicit indicator for the effect of stress on people.

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The third area in which large-scale population studies are very useful is the identification of factors associated with the variable under consideration, especially if the factors occur very rarely. Part of the data set of Sandman et al.[1] has been used to show the association between nightmares and suicidality[12]—a finding that has been replicated by others.[13,14] Sandman et al. also reported an association of nightmares with depression and sleep disturbances, also findings that have been reported in the literature.[15-17] To corroborate these results, it would be very helpful to have large-scale studies in clinical populations. Whereas these kinds of studies are lacking in the field of psychiatric disorders, it has been shown that insomnia patients undergoing polysomnography to rule out other sleep disturbances reported an elevated nightmare frequency.[18] As the FINRISK study[1] is focused mainly on risk factors of cardiovascular disease, it would be a unique opportunity to study the relationship between nightmares and these risk factors (for example, smoking).

The question as to how population surveys can contribute to our knowledge about nightmare etiology is the fourth area relevant to the report of Sandman et al.[1] The increased number of nightmares in the war generation or the increased number of nightmares in war veterans cannot be interpreted easily due to several methodological issues. First, the control group for the war generation was a different cohort—a problem common with field studies. Second, the study of Sandman et al. did not differentiate between idiopathic and posttraumatic nightmares, so it is difficult to attribute the increased nightmare frequency to traumatic war experiences since they might be explained alternatively by general stressors (losing one's home, food shortage, loss of family members, etc.). This might also be a confounding factor regarding the increased nightmare frequency in wounded war veterans, as they may suffer from chronic pain and/or have had difficulties finding a job and/or a partner—all factors that increase stress levels and possibly nightmare frequency. A finding from a German study, however, supports the hypothesis that war experiences themselves contribute significantly to increased nightmare frequency because war-related dream themes were elevated in persons even 55 years after they had experienced the war.[19] Sandman et al. restricted the war generation to persons who were older than 18 years during the war, which seems arbitrary, especially in view of the findings that childhood trauma can increase nightmare frequency in adulthood,[20-22] and nightmare frequency in children has been associated with a loss of a close relative.[23] To the extent that data are available, Sandman et al. should be encouraged to analyze whether children who experienced all the stress during the war periods still show increased nightmare frequencies.

The fifth and last point raised by the paper of Sandman et al.[1] is the potential of using nightmare frequency as an indicator of subjectively experienced stress. The findings of Schredl, for example, clearly indicated that nightmare frequency was much more affected by current stress levels than by trait factors like neuroticism.[24] One of the findings, the increase of occasional nightmares from 1987 to 1997, was interpreted by Sandman et al. as an effect of the great economic recession in the 1990s on the Finnish people. Another hypothesis of Sandman et al. was that sex hormones, especially androgens, might play a role in nightmare etiology, partly because there is a peak in nightmare frequency in women aged 51 to 55 (around the menopause). As this was not found in the women aged 56 to 70, one might speculate that the peak reflects the stress of the women undergoing the changes related to menopause (e.g., hot flashes). These examples illustrate the possibility of using nightmare frequency as an indicator of stress (e.g., the effect of stress on children[23,25-28]).

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REFERENCES

1. Sandman N, Valli K, Kronholm E, et al. Nightmares: prevalence among the Finnish general adult population and war veterans during 1972-2007. Sleep 2013;36:1041-50.
2. Bixler EO, Kales A, Soldatos CR, Kales JD, Healey S. Prevalence of sleep disorders in the Los Angeles metropolitan area. Am J Psychiatry 1979;136:1257-62.
3. Schredl M. Nightmare frequency and nightmare topics in a representative German sample. Eur Arch Psychiatry Clin Neurosci 2010;260:565-70.
4. Li SX, Zhang B, Li AM, Wing YK. Prevalence and correlates of frequent nightmares: a community-based 2-phase study. Sleep 2010;33:774-80.
5. Stepansky R, Holzinger B, Schmeiser-Rieder A, Saletu B, Kunze M, Zeitlhofer J. Austrian dream behavior: results of a representative population survey. Dreaming 1998;8:23-30.
6. American Psychiatric Association. Diagnostic statistical manual of mental disorders: DSM-IV-TR. Washington, DC: American Psychiatric Association, 2000.
7. Pietrowsky R, Köthe M. Personal boundaries and nightmare consequences in frequent nightmare sufferers. Dreaming 2003;13:245-54.
8. Schredl M. Nightmares: An under-diagnosed and undertreated condition? Commentary on Li et al. Prevalence and correlates of frequent nightmares: a community-based 2-phase study. Sleep 2010;33:733-4.
9. Krakow B. Nightmare complaints in treatment-seeking patients in clinical sleep medicine settings: diagnostic and treatment implications. Sleep 2006;29:1313-9.
10. Schredl M, Binder R, Feldmann S, et al. Dreaming in patients with sleep disorders: A multicenter study. Somnologie 2012;16:32-42.
11. Schredl M, Piel E. Gender differences in dreaming: Are they stable over time? Pers Individ Dif 2005;39:309-16.
12. Tanskanen A, Tuomilehto J, Viinamäki H, Vartiainen E, Lehtonen J, Puska P. Nightmares as predictors of suicide. Sleep 2001;24:844-7.
13. Li SX, Lam SP, Yu MWM. Nocturnal sleep disturbances as a predictor of suicide attempts among psychiatric outpatients: A clinical, epidemiological, prospective study. J Clin Psychiatry 2010;71:1140-446.
14. Sjöström N, Waern M, Hetta J. Nightmares and sleep disturbances in relation to suicidality in suicide attempters. Sleep 2007;30:91-5.
15. Lancee J, Spoormaker VI, Van Den Bout J. Nightmare frequency is associated with subjective sleep quality but not with psychopathology. Sleep Biol Rhythms 2010;8:187-93.
16. Krakow B, Tandberg D, Barey M, Scriggins L. Nightmares and sleep disturbance in sexually assaulted women. Dreaming 1995;5:199-206.
17. Levin R, Fireman G. Nightmare prevalence, nightmare distress, and self-reported psychological disturbance. Sleep 2002;25:205-12.
18. Schredl M. Nightmare frequency in patients with primary insomnia. Int J Dream Res 2009;2:85-8.
19. Schredl M, Piel E. War-related dream themes in Germany from 1956 to 2000. Political Psychology 2006;27:299-307.
20. Schäfer V, Bader K. The impact of early-life maltreatment on dreams of patients with insomnia. Int J Dream Res 2009;2:18-26.
21. DeDonato A, Belicki K, Cuddy M. Rater's abilities to identify individuals reporting sexual abuse from nightmare content. Dreaming 1996;6:33-41.
22. Draijer N. The role of sexual and physical abuse in the etiology of psychiatric disturbances in women. Family System 1990;3:59-73.
23. Schredl M, Biemelt J, Roos K, Dünkel T, Harris N. Nightmares and stress in children. Sleep Hypn 2008;10:19-25.
24. Schredl M. Effects of state and trait factors on nightmare frequency. Eur Arch Psychiatry Clin Neurosci 2003;253:241-7.
25. Stephan J, Schredl M, Henley-Einion J, Blagrove M. TV viewing and dreaming in children: The UK library study. Int J Dream Res 2012;5:130-3.
26. Schredl M, Anders A, Hellriegel S, Rehm A. TV viewing, computer game playing and nightmares in school children. Dreaming 2008;18:69-76.
27. Schredl M, Heuser I. Nightmares in children: correlations to personality and stress. Sleep Res Online Suppl 1999;2:276.
28. Wittmann L, Zehnder D, Schredl M, Jenni OG, Landolt MA. Posttraumatic nightmares and psychopathology in children after road traffic accidents. J Trauma Stress 2010;23:232-9.