

The Economic Burden of Insomnia at the Workplace. An Opportunity and Time for Intervention?

Commentary on Kessler et al. Insomnia and the performance of US workers: results from the America Insomnia Survey. *SLEEP* 2011;34:1161-1171.

Børge Sivertsen, PhD^{1,2,3}; Tea Lallukka, PhD⁴; Paula Salo, PhD⁵

¹Division of Mental Health, Norwegian Institute of Public Health, Bergen, Norway; ²Faculty of Psychology, University of Bergen, Bergen, Norway;

³Division of Psychiatry, Helse Fonna HF, Haugesund, Norway; ⁴Hjelt Institute, Department of Public Health, University of Helsinki, Helsinki, Finland;

⁵Finnish Institute of Occupational Health, Turku, Finland

In this issue of *SLEEP*, Kessler and colleagues¹ provide an estimation of the effects of insomnia and work performance. Based on data from 7428 US workers, the authors report that the annual losses in work performance due to insomnia amount to 367.0 million days, which compares to soaring \$91.7 billion per year. Comorbidity accounted for around one-third of these losses, leaving the net annual costs of insomnia to \$63.2 billion and 252.7 million days (after controlling for 26 comorbid conditions). The authors also found that presenteeism (i.e., attending work while ill) accounted for about two-thirds of the lost work performance, whereas absenteeism (i.e., missed work due to illness) accounted for the remainder.

Previous studies on the economic burden of insomnia have suffered from various methodological restrictions, limiting the generalizability of the results.²⁻⁵ For example, using prescription claims to define insomnia^{2,3} likely causes an underestimation of the true prevalence of insomnia, as the majority of insomnia cases are untreated.⁶ In contrast, the study by Kessler et al.¹ was conducted in an appreciatively stringent manner. Using well-validated measures of both insomnia and the outcome measure, the authors have successfully managed to surpass many of the obstacles associated with estimating the costs of insomnia. Indeed, broad evaluation of insomnia symptoms taking into account diagnostic criteria from three major insomnia classification systems is one of the key strengths of this study. Insomnia prevalence estimate was validated by Kessler et al. in a sub-sample of the respondents with semi-structured clinical interviews carried out by experienced and blinded clinical experts in sleep medicine. The authors also provide a meticulous discussion on the differences in prevalence estimates by different classification systems and across existing literature. As a result of broader classification, the prevalence of insomnia was notably higher than in many other previous studies; 23% among working participants. Still, the authors conclude that the estimate among workers is likely to be accurate, which further highlights the importance of the effects of insomnia on work performance and major economic cost due to insomnia.

As mentioned by Kessler et al., several European studies have recently demonstrated that insomnia is associated with

subsequent absenteeism, mainly sick leave and permanent work disability. Linking large epidemiological health surveys with official registries on employment status, insomnia has been established as a strong risk factor for work disability as indicated by sickness absence^{7,8} and disability retirement.⁹⁻¹² However, when it comes to the debate on the cost-effectiveness of insomnia prevention and treatment, Kessler et al. provide crucial information on monetary losses to the employers. Both the current and other^{4,13,14} studies demonstrate that the economic costs of insomnia are to a great extent accounted for by reduced performance *at work*, not merely sickness absence, and thus the current study is likely to provide a more comprehensive scenario in estimating the socioeconomic burden of insomnia.

An interesting finding in the Kessler et al. study is the authors' estimation of population attributable fractions (PAFs). These findings indicate that extinction of insomnia would result in proportional reductions of 5.4% to 7.8% of the overall lost work performance. These estimates are in accordance with a previous large prospective Norwegian study comparing the effects of insomnia and depression on work disability.¹⁵ Adjusting for a range of potential confounding factors, that study found that the relative contribution from insomnia alone towards work disability was 6.7%, larger than that from both depression (PAF = 3.8%) and from combined insomnia and depression (PAF = 5.3%). This indicates that prevention, early detection, and treatment of insomnia may serve as an equally significant intervention against rising disability expenditure as in depression. Given that depression is estimated to account for one-third of workers disability claims in OECD countries,¹⁶ the results from Kessler et al.¹ lend support to an increased focus on insomnia as a primary diagnosis and as a comorbid symptom to other disorders. Such a focus may help reduce the societal burden from absenteeism, in addition to presenteeism.

Kessler and colleagues underline the importance of assessing the effectiveness of insomnia screening and treatment from the perspective of *employers*. Because the costs for the employers due to lost work performance are notable, and only a small proportion of insomniacs currently receive treatment or are diagnosed, the authors highlight the need to estimate cost-effectiveness of insomnia interventions in further workplace trials. There is much more to be done. As this study was carried out in the US, further studies should aim to estimate corresponding figures in other settings and countries. The study was cross-sectional, and thus the role of insomnia in work performance and related substantial economic and societal burden should be confirmed in preferably prospective

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Address correspondence to: Børge Sivertsen, PhD, Department of Clinical Psychology, University of Bergen, Christiesgt 12, Bergen 5015, Norway; Tel: 55588876; E-mail: borge.sivertsen@psyk.uib.no

settings. Also, the study focused on employees who were fully insured and had been enrolled for at least 12 months, which may have caused some selection in the sample. Additionally, the age distribution in the Kessler et al. study was wide, and a healthy worker effect may have contributed to the results. There was a low prevalence of insomnia among older participants, which may have influenced the authors' assumption that daytime impairment due to sleep problems—a prerequisite for insomnia—is less prevalent with age.

The study by Kessler et al. also underlines the importance of prevention, early detection, and treatment of insomnia to reduce economic cost due to lost work performance. The substantial workplace costs and the greater utilization of health care services among those experiencing insomnia¹³ likely contribute to great societal costs in addition to losses at workplace. Hopefully this information will act as an incentive for new resources for interventions. Successful implementation of such interventions to reduce insomnia would be of major public health and societal importance, and also promote better health and well-being among employees.

There is substantial evidence of both effective and lasting interventions for insomnia, with cognitive behavioral therapy (CBT) being regarded by many as the most effective treatment of choice. However, the lack of availability of CBT for insomnia remains a severe obstacle to successful implementation. One promising approach is increased use of the Internet in delivering CBT. Literature on the development and evaluation of interventions delivered over the Internet is growing.^{17,18} The Internet has considerable potential for delivering a structured behavioral program for insomnia, and this type of intervention may be well suited in areas where specialized sleep centers are not available. Other cost-effective alternatives to individual therapy may be CBT in small groups provided by nurses¹⁹ or primary care counselors,²⁰ accompanied by telephone consultations,²¹ and self-help programs for insomnia delivered in the context of community-based interventions.²²

DISCLOSURE STATEMENT

The authors have indicated no financial conflicts of interest.

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