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LETTER TO THE EDITOR



A call for transdiagnostic attention to insomnia and its treatment in mental healthcare

Mental disorders are common, crippling, and costly. Across mental disorders, insomnia is the most common complaint. Recent studies show that insomnia impedes overnight alleviation of emotional distress (Wassing, Benjamins, et al., 2019; Wassing, Lakbila-Kamal, et al., 2019). A meta-analysis of polysomnographic research in mental disorders suggested that sleep depth and rapid-eye movement (REM) variables may play a key role in psychiatric comorbidity (Baglioni et al., 2016). Indeed, insomnia may be the most important malleable transdiagnostic factor determining risk, severity, chronicity, and relapse of psychiatric disorders characterised by dysregulation of distress, affect, or emotion (Van Someren, 2021). Such disorders include depressive disorders, anxiety disorders, post-traumatic stress disorder (PTSD), and borderline personality disorder, together accounting for two-thirds of all psychiatric disorders. Strong benefits of treating co-occurring insomnia are shown for some disorders only (Hertenstein et al., 2022; Ho et al., 2016). Studies on depression, e.g., show that cognitive behavioural therapy for insomnia (CBT-I), strongly benefits recovery from major depressive disorder (MDD), and similar benefits have been reported for PTSD.

However, insomnia has not been equally investigated in all psychiatric disorders characterised by dysregulated affect and emotion regulation. For instance, the effectiveness of CBT-I in anxiety disorders and borderline personality disorder is currently still being explored (Mason et al., 2022; Reesen et al., 2023; van Trigt et al., 2022). To date, few studies have transdiagnostically explored the co-occurrence of insomnia across multiple psychiatric dimensions at once. This is important because psychiatric disorders themselves more often than not occur comorbidly and which of the comorbid conditions links most strongly to insomnia is not known. We therefore conducted a cross-sectional online study and applied network analysis with the objective of mapping the relative frequency of insomnia in people with clinically relevant symptoms in one or more psychiatric domains of dysregulated affect and emotion regulation. This study offers a more complete transdiagnostic perspective on the relative presence of insomnia across psychiatric dimensions characterised by dysregulation of distress, affect, or emotion.

Participants were recruited through a newsletter emailed to volunteers of the Netherlands Sleep Registry (www.slaapregister.nl), an online platform and database for extensive surveying of sleep, traits, life events, and health history. In all media communication to find

registry volunteers, it is stressed that not only people with problems are welcome, but especially also normal and good sleepers, because 'they have the key to the solution to understand and improve poor sleep'. The Netherlands Sleep Registry is not a population-based sample nor a fixed cohort; newsletter calls for participation usually attract more people recognising the topic of a study. The specific newsletter for the present study called for volunteers to participate in a study on mental wellbeing, with 'stress', 'tension' and 'anxiety' as examples. The only inclusion criterion was an age of ≥ 18 years. Thus, this study is not a prevalence study, but rather aimed to oversample people with common mental health issues—with or without sleep complaints.

At their own convenience, participants completed the Insomnia Severity Index (ISI; Morin et al., 2011) to assess insomnia severity; the ultra-short version of the Borderline Personality Disorder Checklist (BPD-C; Wibbelink & Arntz, 2020) to assess the likely diagnostic presence of borderline personality disorder (BPD); and the Rapid Measurement Toolkit-20 (RMT20; Batterham et al., 2020) to assess the likely diagnostic presence of MDD, generalised anxiety disorder (GAD), social anxiety disorder (SAD), panic disorder (PD), and PTSD. RMT20 items have been selected on their accuracy in assessing the disorders of interest. Indeed, validation in diagnosed people indicated that each of the disorders is recognised with excellent sensitivity (85%–93%) and specificity (73%–83%), outperforming previous diagnostic screeners (Batterham et al., 2020). A Dutch translation of the RMT20 was extensively validated for this study. For detailed information, see the Supporting Information (Data S1) section S1.

Data were collected from March to June 2021 and the participants ($n = 1496$) had a mean (SD, range) age of 58 (13.1, 19–92) years. More participants were female (68.1%), compared to 31.7% males and 0.2% another gender. Our intentional oversampling approach succeeded in reaching a substantial number of participants that scored above the clinical cut-off for one or more psychiatric dimension (MDD, $n = 258$; GAD, $n = 562$; SAD, $n = 273$; PD, $n = 171$; PTSD, $n = 319$; BPD, $n = 137$). The large number of participants scoring above the clinical cut-off for the GAD dimension ($n = 562$) reflects its high comorbidity: previous work showed that the vast majority of people with GAD also have at least one other disorder (Wittchen et al., 1994). Occurrence of above-cut-off scores for more than one psychiatric dimension was high as well in our sample, indeed highest for GAD.

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In our reasonably-sized sample, our intentional oversampling of people with common mental health issues allowed for robust estimates of the frequency of co-occurring clinically relevant insomnia (ISI score ≥ 10), which was 96% in MDD, 90% in GAD, 93% in SAD, 93% in PD, 90% in PTSD, and 97% in BPD. While an ISI score cut-off of ≥ 10 may be optimal for detecting insomnia cases (Bastien et al., 2001), some prefer a more stringent cut-off (ISI score ≥ 15) for clinical insomnia (Bastien et al., 2001). Also, with this cut-off most participants with clinically significant symptoms in a psychiatric dimension had co-occurring clinical insomnia: 81% in MDD, 63% in GAD, 77% in SAD, 82% in PD, 68% in PTSD, and 84% in BPD. Table 1 shows an overview of the results.

Can we disentangle direct and indirect links of insomnia with each of the individual psychiatric dimensions to insomnia? Network analysis (Figure 1, see the Supporting Information [Data S1] section S2 for details) revealed that the severity of insomnia was most directly linked to the severity of symptoms of MDD, GAD, and BPD, while the severity of symptoms of SAD, PD, and PTSD was no longer directly associated with insomnia severity when accounting for the severity of the other comorbidities. The finding was confirmed by stepwise multivariate linear regression. Thus, while insomnia is highly prevalent across all assessed psychiatric dimensions, for SAD, PD, and PTSD the link to insomnia, at least as assessed with the ISI, is more likely indirect and through comorbid MDD, GAD, and BPD symptoms.

TABLE 1 Relative frequency of presence of insomnia (Insomnia Severity Index [ISI] score ≥ 15 or ≥ 10) and absence of insomnia (ISI score < 8) in people meeting the validated cut-off score suggesting each of six different psychiatric dimensions.

Dimension	Cut-off score	N	Insomnia (ISI score ≥ 15), n (%)	Insomnia (ISI score ≥ 10), n (%)	No insomnia (ISI score < 8), n (%)
Depression	≥ 13	258	209 (81)	247 (96)	8 (3)
Generalised anxiety	≥ 11	562	395 (63)	507 (90)	33 (6)
Social anxiety	≥ 12	273	211 (77)	255 (93)	13 (5)
Panic	≥ 9	171	141 (82)	159 (93)	6 (4)
Post-traumatic stress	≥ 8	319	216 (68)	286 (90)	19 (6)
Borderline	≥ 23	137	115 (84)	133 (97)	3 (2)
Any of these dimensions		692	470 (68)	614 (89)	49 (7)

Note: people may meet cut-off scores of multiple psychiatric dimensions, as comorbidity is common rather than exceptional. Moreover, people not meeting the cut-off score of any of these six dimensions may still have other issues with wellbeing, due to the nature of the recruitment. For these reasons, the table does not include the numbers and percentages of people with and without insomnia among those not fulfilling cut-offs for specific psychiatric dimensions.

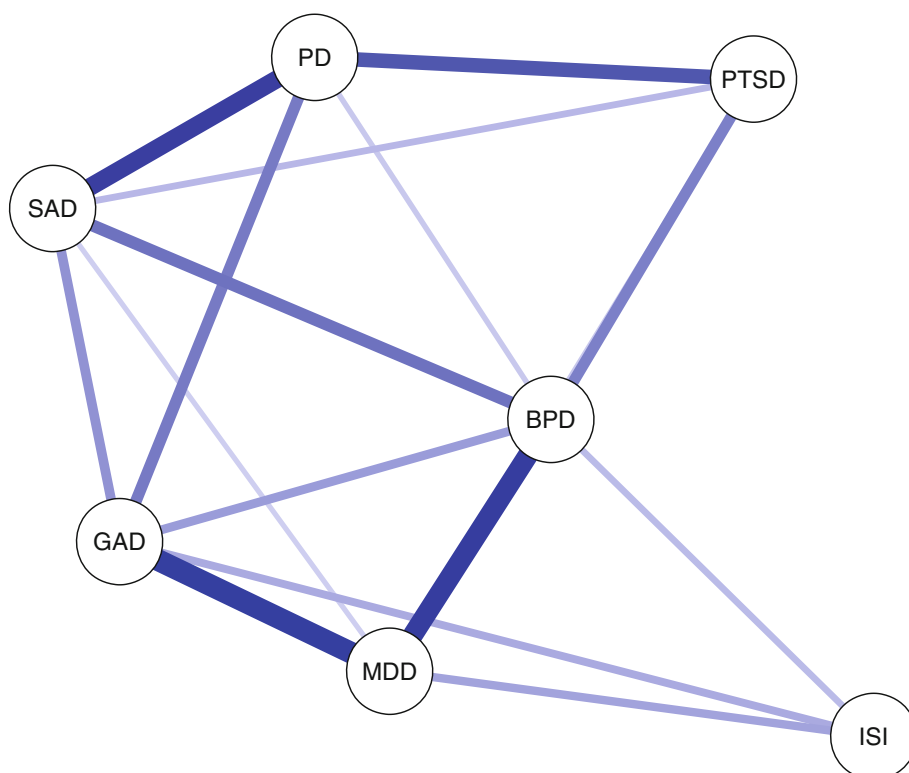


FIGURE 1 Network analysis of associations between the severities of insomnia and psychiatric dimensions. All variables are included as nodes. Nodes indicate symptom severities assessed with the Rapid Measurement Toolkit-20 (RMT20), the Borderline Personality Disorder Checklist (BPD-C) and the Insomnia Severity Index (ISI) (sum scores). The edges represent the conditional association among the two variables after conditioning on all other variables in the network. Blue edges indicate positive associations, and the thickness and colour saturation of the edge is proportional to the strength of the association. BPD, borderline personality disorder; GAD, generalised anxiety disorder; MDD, major depressive disorder; PD, panic disorder; PTSD, post-traumatic stress disorder; SAD, social anxiety disorder.

Our findings strengthen the need for transdiagnostic attention to insomnia across affective and emotion regulation disorders. Insomnia is still not systematically inquired about in all these patients, and should be, the more because its treatment may not only be effective to improve sleep, but also has secondary benefits. The first-line treatment for insomnia, CBT-I, strongly benefits recovery from MDD and PTSD (Hertenstein et al., 2022; Ho et al., 2016). Concertedly, these present and previous findings call for urgent transdiagnostic evaluation of possibly dual effectiveness of adding CBT-I in the treatment of any psychiatric disorder characterised by dysregulated affect and emotion regulation. It is even conceivable that the best strategy would be to intervene on insomnia prior to commencing with regular psychological treatment for specific psychiatric disorders (Reesen et al., 2023), as good sleep is crucial to the recovery of emotional distress (Wassing, Benjamins, et al., 2019) and essential for efficient learning of new cognitions and behaviours, which are the fundamental requirements to successful CBT treatments of mental disorders.

AUTHOR CONTRIBUTIONS

Joyce E. Reesen: Writing – original draft; writing – review and editing; methodology; formal analysis; funding acquisition. **A.W. Hoogendoorn:** Writing – review and editing; methodology; formal analysis. **J. Leerssen:** Writing – review and editing; supervision; funding acquisition. **Jaap Lancee:** Writing – review and editing; supervision. **Tessa F. Blanken:** Writing – review and editing; methodology; formal analysis. **Neeltje M. Batelaan:** Writing – review and editing; supervision. **P. van Oppen:** Writing – review and editing. **P.J. Batterham:** Writing – review and editing. **Eus J.W. van Someren:** Funding acquisition; writing – review and editing; supervision.

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CONFLICT OF INTEREST STATEMENT

All authors declare that they have no conflicts of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.