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Short Communication

Anxiety mediates the relationship between multidimensional perfectionism and insomnia disorder

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ABSTRACT

Individuals with insomnia often report aspects of perfectionism alongside symptoms of anxiety and depression. However, there has been limited examination of these factors together. The current study investigated whether individuals with insomnia report increased perfectionism compared to normal-sleepers. Further, the mediating role of anxiety and depression was examined. Participants were 39 individuals with DSM-5 defined Insomnia Disorder, and 39 normal-sleepers, who completed two measures of multidimensional perfectionism and the Hospital Anxiety and Depression Scale. Results demonstrated that, compared to normal-sleepers, individuals with insomnia display increased perfectionistic traits of: concern over mistakes, doubts about action, and parental criticism. In addition, these differences were partiality mediated by symptoms of anxiety, but not depression. Our findings highlight the significance of treating symptoms of anxiety with the prospect of alleviating negative thoughts concerning one's mistakes, doubts about action, and perception of parental criticism, which may contribute to insomnia.

1. Introduction

Insomnia is influenced by a number of predisposing, precipitating and perpetuating factors, which are behavioural, biological, environmental, or psychological in nature (Spielman, Caruso, and Glovinsky, 1987). One such predisposing, and potentially perpetuating, factor is perfectionism, defined as the tendency to set excessively high standards for oneself and to engage in overly critical self-evaluations (Frost, Marten, Lahart, and Rosenblate, 1990). It has previously been hypothesized that individuals with perfectionistic traits exhibit a tendency to be overly concerned with the negative effects of a poor night's sleep (Lundh, Broman, Hetta, and Saboonchi, 1994). These concerns could inadvertently perpetuate the development of a vicious thought cycle consisting of worry, frustration, and negative expectations concerning sleep (Frost et al., 1990).

Various aspects of perfectionism have been associated with insomnia. Evidence points towards relationships between insomnia and the multidimensional perfectionism subscales/dimensions: doubts about action, parental criticism, concern over mistakes, personal standards, and socially prescribed perfectionism (Akram, Ellis, and Barclay, 2015; Azevedo et al., 2010; Jansson-Fröjmark and Linton, 2007; Lundh et al., 1994; Vincent and Walker, 2000). However, whether these relationships are direct or mediated by other psychological factors is yet to be confirmed.

Perfectionistic tendencies including concern over mistakes, doubts about action and socially prescribed perfectionism have been independently associated with symptoms of anxiety and depression (Kawamura, Hunt, Frost, and DiBartolo, 2001); and symptoms of anxiety and depression commonly co-occur with insomnia (Ford and Kamerow, 1989). It is thus conceivable that the psychological factors mediating the link between perfectionism and insomnia may include anxiety and depression. Lundh and Broman (2000) postulate that when perfectionistic standards co-occur with a tendency to worry, these standards amplify the negative valence of such worry, increasing the likelihood of an elevated focus on sleep. One suggested pathway may be that anxious and depressive symptoms serve to further increase such worry, and therefore a state of preoccupation with sleep, particularly during the pre-sleep period. This pattern of thinking could contribute to the development of negatively toned cognitive activity, arousal and distress consequently leading to difficulties initiating and maintaining sleep (Lundh and Broman, 2000).

Taking this into account, it is plausible that relationships between perfectionism and insomnia may be mediated by anxiety and/or depression. To the best of our knowledge, only two studies have examined this possibility (Akram et al., 2015; Jansson-Fröjmark and Linton, 2007). Jansson-Fröjmark and Linton (2007) demonstrated that concern over mistakes appears to be significantly related to pre-existing and future insomnia, characterized by sleep initiation or maintenance difficulties. However, when anxiety and depression were controlled for, these relationships diminished. Similarly, Akram et al. (2015) demonstrated that

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concurrently, doubts about action and parental criticism were significantly related to insomnia symptoms amongst members of the general population. However, when anxiety and depression were accounted for, these relationships disappeared. Interestingly, pre-existing insomnia symptoms were related to an increased reporting of future doubts about action and parental criticism; and this relationship was mediated only by anxiety, but not depressive symptoms. These studies suggest the relationship between insomnia and perfectionism is mediated by anxiety and, possibly, depression. However, one of these studies assessed only two perfectionism facets (Jansson-Fröjmark and Linton, 2007); whilst the other was limited in its assessment of insomnia symptoms (Akram et al., 2015). This study aimed to further investigate the mediating role of anxiety and/or depression in the insomnia-perfectionism relationship amongst a sample meeting diagnostic criteria for insomnia disorder by assessing all facets of perfectionism from two multidimensional perfectionism scales (Frost et al., 1990; Hewitt and Flett, 1991). Specifically, we aimed to determine whether: i) individuals with insomnia report increased aspects of perfectionism compared to normal-sleepers and ii) any confirmed group (insomnia vs. normal-sleepers) differences in perfectionism are mediated by symptoms of anxiety and/or depression.

2. Method

2.1. Participants

Participants were recruited from the general population using posters around Northumbria University, emails to students, and social media. Participants completed a diagnostic screening questionnaire to determine eligibility to take part and group allocation – insomnia disorder or normal-sleeper (see 'Measures' section). Eighty-five individuals completed the screening questionnaire, and the final sample consisted of 78 participants: 39 with insomnia (mean age = 22.18 years, SD = 5.37 years; 87% female), and 39 normal-sleepers (mean age = 24.03 years, SD = 6.25 years; 70% female). The average duration of insomnia within the insomnia group was 1.32 years (SD = 1.75), ranging from 0.3 to 10 years.

2.2. Measures

2.2.1. Screening questionnaire for eligibility and group allocation

A screening questionnaire determined eligibility and normal-sleeper/insomnia status. Individuals who reported symptoms of a sleep/wake disorder (other than insomnia for the insomnia group), an existing psychiatric illness, a central nervous system disorder, use of medication that may affect sleep, prior head injury or shift-work were ineligible to participate (n = 7). Participants with insomnia met DSM-5 criteria for insomnia disorder (American Psychiatric Association, 2013). Specifically, individuals with insomnia reported dissatisfaction with sleep characterized by either a difficulty initiating or maintaining sleep or early morning awakenings. The insomnia had to be present for three or more nights per week, for at least three months, and cause significant daytime impairment. Finally, these conditions had to be met despite adequate opportunity to sleep. It was a requirement that normal-sleepers reported no problems with sleep and no history of any sleep-disorder.

2.2.2. Multidimensional perfectionism scales

Original versions of the Frost (F-MPS: Frost et al., 1990) and Hewitt-Flett (HF-MPS: Hewitt and Flett, 1991) Multidimensional Perfectionism Scales assessed different aspects of perfectionism. The 35-item F-MPS assesses six components on 5-point likert scales. Scores for each component range as follows: concern over mistakes (CM) 9–45; doubts about action (D) 4–20; parental expectations (PE) 5–25; parental criticism (PC) 4–20; organisation (ORG) 30; and personal standards (PS) 7–35. Higher scores represent a greater tendency towards perfectionism. Internal consistency assessment yielded a Cronbach's α of 0.86 for the subscale CM; 0.81 for D; 0.84 for PE; 0.87 for PC; 0.89 for ORG; and 0.82 for PS.

The 45-item HF-MPS assess three dimensions on 7-point likert scales. For each dimension, self-oriented perfectionism (SOP); other oriented perfectionism (OOP); and socially prescribed perfectionism (SPP), scores range between 15 and 105. Higher scores represent a greater tendency towards perfectionism. Internal consistency assessment yielded a Cronbach's α of 0.89 for the subscale of SOP; 0.78 for OOP; and 0.91 for SPP.

2.2.3. Hospital anxiety & depression scale

Symptoms of anxiety and depression were assessed using the original version of The Hospital Anxiety and Depression Scale (HADS: Zigmond and Snaith, 1983), consisting of 14 items (seven for both anxiety and depression) scored between 0 and 3, with a maximum score of 21 on both subscales. Higher scores on each subscale represent greater anxiety and depression. Both subscales demonstrated good internal consistency (Cronbach's α of 0.84 for anxiety, and 0.76 for depression).

2.3. Procedure

All participants provided written informed consent prior to participation. Ethical approval was granted by the Faculty of Health and Life Sciences Ethics committee at Northumbria University. Participants were seated at a desk in a laboratory room and completed a

Table 1
Means and standard deviations (SD) for normal-sleepers and insomnia groups on measures of perfectionism, anxiety and depression.

	Normal-sleepers		Insomnia				
	Mean	SD	Mean	SD	*t*	*p*	Cohen's *d*
F-MPS Subscale							
Organisation	22.21	4.16	22.43	4.26	−0.24	0.809	−0.05
Concern over mistakes	21.64	5.55	24.95	6.13	−2.50	0.015*	−0.60
Personal standards	23.67	4.04	22.95	4.95	0.74	0.461	0.16
Doubts about action	11.28	3.63	13.28	3.01	−2.65	0.010**	−0.60
Parental expectation	13.33	4.14	14.38	4.61	−1.06	0.293	−0.24
Parental criticism	7.64	2.92	9.85	4.10	−2.74	0.008**	−0.62
HF-MPS dimension							
Self-oriented perfectionism	68.62	12.74	67.87	15.51	0.73	0.465	−0.05
Socially prescribed perfectionism	53.12	10.24	53.78	12.37	−0.55	0.585	−0.06
Other oriented perfectionism	58.21	9.71	55.00	10.04	1.31	0.195	0.33
Anxiety	6.07	3.59	9.46	3.62	−4.49	0.001**	−0.94
Depression	2.78	2.34	4.12	2.75	−2.80	0.007**	−0.52

Note: Anxiety, Depression: Hospital Anxiety and Depression Scale.
* Sig. at <0.05.
** Sig. at < 0.01.