



Positive affect, psychological well-being, and good sleep

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Abstract

Objective: To discover whether positive affect and purpose in life (eudaimonic well-being) are associated with good sleep independently of health problems and socioeconomic status, and to evaluate their role in mediating the influence of psychosocial risk factors on poor sleep. **Methods:** A cross-sectional study was carried out with 736 men and women aged 58-72 years, with positive affect assessed by aggregating ecological momentary samples. Sleep problems were assessed with the Jenkins Sleep Problems Scale, and psychosocial risk factors were measured by standardized questionnaires. **Results:** Both positive affect and eudaimonic well-being were inversely associated with sleep problems after adjustment for age, gender, household income, and self-rated health (P<.001). Negative psychosocial factors

including financial strain, social isolation, low emotional support, negative social interactions, and psychological distress were also related to reported sleep problems. The strength of these associations was reduced by 20–73% when positive affect and eudaimonic well-being were taken into account, suggesting that effects were partly mediated by positive psychological states. **Conclusions:** These results suggest that both positive affect and eudaimonic well-being are directly associated with good sleep and may buffer the impact of psychosocial risk factors. The relationships are likely to be bidirectional, with disturbed sleep engendering lower positive affect and reduced psychological well-being, and positive psychological states promoting better sleep. © 2008 Elsevier Inc. All rights reserved.

Keywords: Sleep disturbance; Positive affect; Well-being; Stress; Socioeconomic status

1. Introduction

Disturbed sleep is widespread in the population and between one quarter and one third of adults complain of insomnia, insufficient, or disrupted sleep [1,2]. Sleep problems are associated with impaired cognitive function, chronic illness, and reduced mental health and premature mortality [2–4]. There is a need to investigate the factors associated with sleep problems in order to understand the processes underlying sleep disturbance and advise people about managing the problem more effectively.

There has recently been a growth of interest in positive psychology and in the role of positive emotional states on health and quality of life. Positive well-being has health-

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protective biological correlates, including low cortisol output, reduced cardiovascular stress responsivity, and heightened antibody responses to vaccination [5–7]. It has also been found to predict reduced risk of stroke, functional disability, and mortality in older populations [8,9], although evidence is still limited [10]. Two distinct types of positive well-being have been delineated: positive affect or hedonic well-being, characterized by feelings of happiness and enjoyment; and eudaimonic well-being, which relates to purposeful engagement with life, the realization of human potential and human actualization [11,12]. In this article, hedonic well-being is referred as positive affect.

There has been relatively little research on relationships between positive psychological states and sleep. An inverse association between positive affect and sleep quality has been described in patients with narcolepsy and sleep apnoea [13,14], but Jean-Louis et al. [15] found no relationship between positive subjective state and sleep quality in a community sample. By contrast, Ryff et al. [16] reported that

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aspects of eudaimonic well-being, including purpose in life, environmental mastery, and positive relationships, were associated with good sleep in a cohort of older adults.

No study has yet investigated the relationships between sleep disturbance and both types of positive psychological state. The first aim of the present study was therefore to examine the associations between self-reported good (undisturbed) sleep and both positive affect and eudaimonic wellbeing in a healthy middle-aged and older sample. Sleep problems are more common in people of lower socioeconomic status (SES) as defined by income, education, and occupational status [17–19]. Additionally, disturbed sleep is associated both with chronic medical conditions and poor self-rated health [2,3,17]. Since SES and health may affect positive psychological states as well, these factors were taken into account in the analyses of relationships with good sleep.

Psychosocial factors may also be related to sleep disturbance and impaired positive well-being. General psychological distress, depression, and anxiety have all been associated with sleep problems and insomnia [2,4,17]. People who report greater chronic life stress including general stress, financial difficulties, and work strain experience more disturbed sleep [4,19,20]. Sleep quality is impaired in individuals who are socially isolated and in people who describe unsatisfactory social relationships [4,21]. These factors may combine to generate a high level of psychosocial adversity in people experiencing chronic life stress coupled with low social support. For example, in a study of middle-aged working men and women, Steptoe and Marmot [22] showed that sleep problems were more common in people reporting high work, financial, and neighborhood stress coupled with low emotional support and social connectedness.

People who experience psychological distress, chronic life stress, low emotional support, and social isolation may be less happy and less fulfilled in their lives than others. But positive psychological states may also act as protective factors, buffering the impact of psychological distress and adversity on health outcomes. Consequently, associations between psychosocial risk factors and poor sleep may be modified by positive psychological states. The second aim of this study was to test this possibility by examining whether relationships between psychosocial risk factors and sleep are independent of positive psychological states, or are attenuated when these factors are taken into account. We measured life stress, social relationships, and psychological distress, and tested the effect of adding positive affect and eudaimonic well-being into the regressions on sleep problems.

2. Method

2.1. Participants

Participants were 827 men and women who were members of the Whitehall II epidemiological cohort [23].

None had taken part in previous investigations of positive affect or psychological well-being. They were a subset of the 6914 men and women who participated in the 18- to 19-year follow-up in 2003–2004 and were recruited for a substudy of heat shock proteins [24]. Ninety-one respondents were excluded from these analyses because they were taking psychotropic medication or had a history of coronary heart disease or stroke, leaving 736 participants.

2.2. Measures

Sleep problems were assessed using the Jenkins Sleep Problems Scale [25], a widely used brief self-report instrument [26]. This contains items assessing number of times waking up in the night, difficulty staying asleep, trouble falling asleep, etc. The Cronbach α in this population was .84. Scores were scaled from 0 to 100, with higher scores indicating greater sleep problems.

Positive affect was measured using ecological momentary assessment methods rather than a measure administered at a single time point [6]. Four ratings were requested for 2.5, 8, and 12 h after waking, and at bedtime. Actual times of assessment averaged 9:18 a.m.±60 min, 2:45 p.m.±67 min, 6:54 p.m.±67 min, and 11:09 p.m.±58 min. On each occasion, participants were asked "how happy, excited or content do you feel at this moment", with four response options: 'not at all', 'somewhat', 'very much', and 'extremely'.

Eudaimonic well-being was measured with three scales from the CASP-19 [27]. The CASP-19 was devised as a needs satisfaction quality of life measure for people in early old age and consists of four scales: control, autonomy, pleasure, and self-realization. The control, autonomy, and self-realization scales correspond to the concepts of environmental mastery, autonomy, self-acceptance, and purpose in life that make up psychological well-being in Ryff's taxonomy [11,16]. Each item is scored on a four-point scale from never to often. Control was assessed by six items (e.g., "I feel that what happens to me is out of my control"), autonomy with five items (e.g., "I feel that I can please myself in what I do"), and self-realization with four items (e.g., "I feel satisfied with the way my life has turned out"). The Cronbach α for these three scales ranged from 0.60 to 0.85. Scores on the three scales were averaged and scaled from 0 (lowest) to 100 (highest).

Household income was assessed as a measure of SES. Participants were asked to estimate their total household income and were categorized into low (<£25,000), medium (£25–50,000), and higher (>£50,000) income groups. Selfrated health was measured with the item "In general, would you say your health is: excellent, very good, good, fair, or poor". Participants were also classified on whether they were currently in paid employment.

The psychosocial risk factors tested in these analyses were indicators of chronic life stress, social relationships, and psychological distress. Two aspects of chronic life stress were assessed. Financial strain was measured with the items:

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