Sleep disorders, affect, substance use and widespread pain: a factor analytic study

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RESULTS

A factor analytic method was used to explore the interrelationships between the variables noted above. Initially, a correlation matrix revealed that the four types of sleep disorder had weak to moderate intercorrelations, ranging from 0.56 to 0.72. A principle components analysis was then used to explore the underlying factor structure of the 12 variables. Using an eigenvalue > 1 criterion, 4 factors were extracted. Since it was assumed that the factors associated with insomnia would probably have significant intercorrelations, these four factors were rotated to an oblique solution using a Promax method. Items were assigned to factors if the item loading was ≥ .40, and the results approximated a simple structure. Factor one “affective distress” (eigenvalue=3.02) included depression, anxiety, and anger. Factor two “poor sleep quality” (eigenvalue=1.49) included insufficient sleep, difficulty staying asleep, being exhausted but unable to sleep, and widespread pain. This is consistent with other recent research findings (Wilson, Eriksson, D’Eon, Micali, & Emery, 2002). Factor three (eigenvalue=1.37) consisted of coffee and tobacco use, and factor four (eigenvalue=0.95) included delayed sleep onset, and use of alcohol and noncoffee caffeinated drinks. Thus, two different patterns of insomnia emerged, one where poor sleep quality was associated with widespread pain, and the other was delayed sleep onset was associated with alcohol and noncoffee caffeinated drinks.

DISCUSSION

Two patterns of insomnia emerged from this study, one associated with pain, and the other with alcohol and noncoffee caffeinated drinks. Interestingly, caffeine in the forms of coffee did not load on either sleep factor. Although a possible explanation for this was that coffee may be more commonly consumed in the morning, and noncoffee caffeinated drinks may be consumed later in the day, determining how different forms of caffeine affect sleep patterns will need to be studied further. Interestingly, in this study affective distress was less strongly associated with insomnia than was widespread pain or caffeine. However, as widespread pain has been found to be associated with depression, it is possible that patients with widespread pain and insomnia may not recognize their depression.

Overall, his study lends some support to the hypothesis that insomnia should not be viewed as a single condition, but rather one which may occur in differing forms. As each of these forms may tend to co-occur with different clinical correlates, each form of insomnia may suggest a distinct form of treatment. Further studies about the types of insomnia that occur in patients with chronic pain an injury is indicated, as is research on effective treatments for each.

METHOD

In this study, 414 consecutive patients referred for psychological assessment for pain or injury were asked to rate their sleep quality using a Symptom checklist. Items were assigned to factors if the item loading was ≥ .40, and the results approximated a simple structure. Factor one “affective distress” (eigenvalue=3.02) included depression, anxiety, and anger. Factor two “poor sleep quality” (eigenvalue=1.49) included insufficient sleep, difficulty staying asleep, being exhausted but unable to sleep, and widespread pain. This is consistent with other recent research findings (Wilson, Eriksson, D’Eon, Micali, & Emery, 2002). Factor three (eigenvalue=1.37) consisted of coffee and tobacco use, and factor four (eigenvalue=0.95) included delayed sleep onset, and use of alcohol and noncoffee caffeinated drinks. Thus, two different patterns of insomnia emerged, one where poor sleep quality was associated with widespread pain, and the other was delayed sleep onset was associated with alcohol and noncoffee caffeinated drinks.