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Attachment Styles and Sleep Measures in a Community-Based Sample of Older Adults

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Abstract

Background—Measures of attachment style are often used to appraise social and emotional health. In developmental literature, the concept of attachment is used to explain relationships between children and their adult caregivers. While both attachment styles and sleep patterns are conceived as developmentally organized systems, very few studies have explored the link between the two. The present study examined whether attachment styles and sleep measures are associated among older adults.

Methods—Relationships between attachment styles (i.e., secure, fearful, preoccupied, and dismissive) and *subjective* sleep measures were assessed utilizing data from 70 older participants (mean age: 68 ± 6 years; Blacks: 59% and Whites: 41%) in a community-based study assessing subjective health characteristics. After obtaining informed consent, each participant provided demographic and socioeconomic data, as well as relevant medical and *subjective* data.

Results—Independent of participants' demographic and subjective factors, significant correlations were found between the preoccupied attachment dimension and sleep measures. Specifically, individuals scoring high on the preoccupied attachment dimension were more likely to report daytime napping ($r_p = 0.31$, $p < 0.01$) and to use sleep-inducing medications ($r_p = 0.37$, $p < 0.05$). No significant correlations were found among sleep measures and the secure, dismissive, and fearful dimensions.

Conclusions—Important relations have been observed between specific attachment styles and subjective sleep factors in our data. Although only one dimension (preoccupied) demonstrated statistical significance, a trend was observed, suggesting possible associations between the secure attachment style dimension and subjective sleep measures. Future studies are needed to broaden our understanding of the relationship between attachment styles and sleep patterns.

Keywords

attachment styles; sleep; aging; relationship style

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Introduction

Little is known about the relationships between attachment styles and sleep patterns, although both are conceived as developmentally organized systems that develop around the end of the first year of life (1). Zborowski et al. (2) suggest that rapid eye movement (REM), a physiologic manifestation reflective of the dreaming state, is related to attachment styles by selectively activating the biobehavioral systems necessary to promote and maintain attachment between the young and the caregiver. Despite such findings, no in-depth studies have been conducted to further delineate the nature of the relationships between attachment and sleep, particularly in an older sample.

John Bowlby first introduced the concept of attachment, which was initially used to explain the formation of social bonds between infants and their caregivers (3), and the long-term affect this bond had on personality and psychopathology (4). The concept of attachment has since seen several variations and applications to differing age groups (4-7). For the purposes of this study, we utilized Bartholomew's variation of the attachment theory. It was Bartholomew et al. (4,8) who developed the four-category/working model, two-dimensional adaptation of the attachment theory. One dimension is the model of self (positive vs. negative) and the other is the model of others (positive vs. negative) (4). The four working models are designated as secure, preoccupied, dismissive, and fearful. Individuals are categorized as securely attached if they exhibit a positive outlook towards themselves and others (4,8). Preoccupied individuals have a negative outlook of self and a positive outlook of others (4,8). Dismissive individuals have a positive outlook of self and a negative outlook of others (4,8). Fearful individuals have a negative outlook of self and others (4,8).

Review of the extant literature suggests a complex interaction between negative emotions (e.g., anxious and depressed emotions) and sleep disturbances in adulthood (9,10). For instance, volunteers suffering from insomnia or psychiatric patients who show poor sleep quality often go through periods of rumination and exhibit depressive traits (11,12). Indeed, pre-sleep worries, a concept similar to rumination, constitute the main reason why individuals with insomnia are unable to fall asleep (13). Interestingly, rumination and depressive traits are often observed among individuals who are classified as having a preoccupied or fearful attachment (14). Yet another study showed that fears and emotional stress have also been linked to sleep disturbances among adolescents (15).

Consistent with the observation that individuals with different personality types exhibit differential sleep patterns, one might expect that persons with varying attachment styles might also show differential sleep patterns and be more or less likely to report sleep complaints. The current study sought to investigate the relations between attachment styles and sleep patterns, using subjective sleep measures, in a community-based sample of older adults. Specifically, we hypothesized that individuals who are categorized as secure and dismissive would be less likely to report less sleep problems than those who are classified as preoccupied or fearful.

Methods

Participants in this study consisted of 70 individuals ranging in age from 60 to 85 years (mean age: 68.3 ± 6.0). Fifty-nine percent of the participants were African Americans and 41% were European Americans. Seventy-three percent of the participants were women. Data for the present analysis came from a multifactorial study investigating relations of depressed mood, attachment styles, sleep, ambient illumination, and ophthalmic diseases. Details of the study have been published previously along with data on associations of ambient illumination with mood and ophthalmic diseases (16). Here, we report data on relationships between subjective sleep measures and attachment styles.

Physical health was assessed with the Comprehensive Assessment and Referral Evaluation (17). This scale has been used extensively in investigations involving older individuals in minority populations. The questionnaire has shown good construct validity (18) as well as concurrent and predictive validity (19). The questionnaire incorporates 85 questions subdivided into numerous subscales. In this analysis, five of these sub-scales were utilized: vision, respiratory disease, diabetes, sleep disorder, and hypertension (Cronbach $\alpha = 0.80$, 0.86, 0.82, 0.92, and 0.91, respectively). Except for the sleep disorder subscale, which was used in inferential statistics, these scales were used mainly to describe the medical characteristics of the participants. In our analysis, we did not use the composite sleep disorder scale. Rather, we analyzed four specific questions: "Do you depend on sleep medicine?"; "Do you have difficulty falling asleep?"; "Do you wake up often during the night?"; and "Do you sleep during the day?". Participants were also asked to estimate their habitual sleep duration and rated their health status on a 5-point Likert scale, with 1 denoting "poor" and 5 as "excellent."

Sleep Quality was assessed with the Pittsburgh Sleep Quality Index (PSQI) (20). The PSQI consists of 19 questions, categorized into seven components: subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleeping medications, and daytime dysfunction. Each question, reflecting sleep perception during the past month, is rated on a scale of 0-3. Scores from each of the seven components are summed to achieve a global score. A global score of 5 or more is equated with "poor sleepers." Scores ranged from 0-21. According to a previous study, this scale has shown an acceptable internal reliability coefficient (Cronbach $\alpha = 0.77$) (21). Using a cut-off point of 5.5 in the global score, sensitivity and specificity estimates were respectively 85.7% and 86.6% for primary insomnia, 80.0% and 86.6% for major depression, 83.3% and 86.6% for generalized anxiety disorder, and 83.3% and 86.6% for schizophrenia.

Attachment Styles were measured utilizing the Relationship Style Questionnaire (8). This scale consists of a 30-question, four-subscale model: secure, preoccupied, dismissive, and fearful. In the present study, alpha values for these subscales were: 0.54, 0.51, 0.53, and 0.59, respectively. Participants were asked to indicate the extent to which each of the 30, first-person, statements describes their feelings about past and present close relationships. A 5-point Likert scale, ranging from 1 = Never to 5 = Very Often, was used to code responses to each statement. An individual's principal style is derived by tabulating the mean score for each of the four subscales. The subscale with the highest score is then determined to be the individual's attachment style.

Depression was assessed with the Geriatric Depression Scale (GDS) (22). The GDS comprises five main factors described as sad mood, lack of energy, positive mood, agitation, and social withdrawal. According to a study that examined depressed moods among adults ($\geq$ 60 years old) attending primary-care clinics, the GDS had a sensitivity of 100% and a specificity of 84% in screening for major depression, using a cut-off score of 10 (23). By contrast, the original psychometric study, which used a cut-off score of 11, found a sensitivity of 81% and a specificity of 61% for major depression (DSMIII-R) (24).

Statistical Analysis

All acquired data were merged into SPSS 10.0 for final analyses. These included sociodemographic, medical, sleep, mood, and attachment data. Distributions were checked for normality before final analyses were performed. Frequency and measures of central tendency were used to describe the sample. Analysis of variance was used to examine ethnic effects on demographic and *subjective* data. To assess associations between attachment styles (i.e., secure, preoccupied, dismissive, and fearful) and sleep measures (i.e., sleep duration, sleep latency, sleep quality, daytime napping, difficulty initiating sleep, difficulty maintaining sleep, and sleep medicine), partial correlations were used. In these analytic procedures, effects of the

covariates: ethnicity, age, sex, BMI, education, marital status, income, and depression were adjusted.

Results

Descriptive analysis indicated that 85% of the volunteers reported being in good to excellent health, although 30% had a respiratory condition, 48% hypertension, 42% sleep problems, 47% vision problems, and 17% diabetes. Fifty-three percent reported social drinking, and 7% were current smokers. Approximately 50% of the participants obtained a high school diploma. The median household income of the sample was $10,000. Thirty-three percent of the participants were either married or living with a partner; the other participants were divorced, separated, widowed, or single.

As volunteers were recruited from two distinct ethnic groupings, we compared the sample characteristics based on ethnicity (see Table 1). Analysis of variance showed that African Americans in the study differed significantly from European Americans with regard to age, BMI, and subjective sleep duration. However, they were not significantly different regarding reported depression scores, overall attachment style scores, or sleep quality. Among African Americans, 76% were female and 24% were male; among European Americans, 69% were female and 31% were male ($X^2 = 0.45$, NS).

Of the sample, 65% were classified as having a secure attachment style, 51% fearful, 62% preoccupied, and 55% dismissive. The distribution of each of the attachment dimensions was as follows: secure: mean = 12.45, SD = 3.68; fearful: mean = 12.15, SD = 3.80; preoccupied: mean = 10.20, SD = 3.13; and dismissive: mean = 17.52, SD = 3.80.

Results of the correlational analysis examining relationships between attachment styles and sleep measures revealed no significant relationships among sleep variables and the secure, fearful, and dismissive attachment styles. For the secure dimension, correlation coefficients ranged from 0.04 to 0.25. For the fearful dimension, coefficients ranged from 0.01 to 0.18, and for the dismissive dimension, they ranged from 0.03 to 0.20. However, significant relationships were noted between sleep variables and the preoccupied attachment style, as seen in Table 2. In these partial correlation analyses, we controlled for the following covariates: age, ethnicity, sex, BMI, depression, education, marital status, and income. A trend suggesting an association between the secure attachment dimension and sleep onset latency was noted ($r = -0.25$; $p = 0.07$).

Discussion

The present study investigated associations of attachment styles with sleep patterns using subjective sleep measures from community-dwelling older adults. As might have been predicted from previous research with infants, important relationships have been observed between specific attachment styles and sleep factors. The main finding of the study is that individuals characterized by a preoccupied attachment style were likely to report daytime napping and use of sleep-inducing medications, independent of their demographic and subjective characteristics. Of interest was also the observation that these individuals tended to sleep less.

Conceivably, individuals scoring high on the preoccupied attachment dimension may have been taking sleep-inducing medications to increase their sleep time. According to our data, older adults characterized by this attachment style experienced less sleep likely because of longer sleep latencies, possibly due to ruminating habits, and/or mid-sleep awakenings. Studies have shown that individuals with a preoccupied attachment are more likely to be depressed, inclined to experience high levels of psychological distress, and showed a reduced ability to

cope adaptively with life stressors (14,25,26). These tendencies might predispose them to experiencing more sleep problems than those who are characterized by secure or dismissive attachment styles. Unfortunately, direct within-group comparisons could not be made because sub-samples were underpowered to support such analyses.

It remains unclear whether individuals napped more because they were preoccupied with distress in their lives or as a residual effect of sleep medications. A convincing argument can be made either way, and yet one might also surmise that both might have occurred independently of each other. Preoccupation with daily challenges may have predisposed these individuals to experiencing sleep difficulties, which in turn resulted in daytime sleepiness. Long-acting sleep medications, which are consumed to increase nocturnal sleep time, may remain active in the body beyond the final awakening time, thus causing residual daytime sleepiness. This is especially true among older adults whose metabolism is slower and who unfortunately represent the targeted group for prescription of sleep medications (27,28).

Contrary to our expectation, the secure attachment dimension did not show a significant correlation with sleep measures, although important trends were noted. One such trend was the finding that individuals scoring high on the secure attachment dimension reported little difficulty initiating sleep. This suggested that these individuals may have had a greater ability to cope with daily stressors influencing emotional responses. Trends observed in our preliminary analyses should be explored further in future studies; as such results could broaden our understanding of the relationship between attachment styles and sleep patterns.

Conclusion

As expected, results of our analysis indicated important associations between attachment styles and sleep measures, supporting previous data from the developmental literature. Our study has some limitations that should be noted. The most important limitation was the lack of statistical power to perform multivariate analysis to assess relationship between attachment styles and all of the sleep measures. Despite that limitation, a special effort was made to control for important covariates in partial correlation analyses. Further analysis of observed trends indicated that with a larger sample size, we would have had adequate power to detect significant associations in our study. Using Sample Power, an SPSS-based statistical tool, we found that with a sample size of 150, we would have had a power of 80.9% to obtain statistically significant results, assuming an alpha level of 0.05 and a correlation coefficient in the population of 0.25 (95% confidence interval 0.09 to 0.38).

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References

1. Sagi, A.; Tirosh, E.; Ziv, Y.; Guttmann, S.; Lavie, P. Attachment and sleep patterns in the first two years of life. International Society on Infant Studies Program. Proceedings of the 11th Biennial International Conference on Infant Studies; 1998 April 2-5; Atlanta, Georgia.
2. Zborowski MJ, McNamara P. Attachment hypothesis of REM sleep toward an integration of psychoanalysis, neuroscience, and evolutionary psychology and the implications for psychopathology research. Psychoanalytic Psych 1998;15:115–140.
3. Bowlby, J. Attachment and Loss. Vol. 1. New York: Basic Books; 1969.
4. Levy KN, Blatt SJ, Shaver PR. Attachment styles and parental representations. J Pers Soc Psychol 1992;74(2):407–419.
5. Ainsworth, MS.; Blehar, MC.; Waters, E.; Wall, S. Patterns of attachment: A psychological study of the strange situation. Hillsdale, NJ: Eribaum; 1978.

6. Hazen C, Shaver PR. Romantic love conceptualized as an attachment process. J Pers Soc Psychol 1987;52:511–524. [PubMed: 3572722]
7. Hazen C, Shaver PR. Love and work: An attachment –theoretical perspective. J Pers Soc Psychol 1990;59:270–280.
8. Bartholomew K, Horowitz LM. Attachment styles among young adults: a test of a four-category model. J Pers Soc Psychol 1991;61:226–244. [PubMed: 1920064]
9. Kirkegaard Thomsen D, Yung Mehlsen M, Christensen S, Zachariae R. Rumination - relationship with negative mood and sleep quality. Individ Dif 2003;34(7):1293–1301.
10. Riemann D, Berger M, Voderholzer U. Sleep and depression - results from psychobiological studies: an overview. Biol Psychol 2001 Jul-Aug;57(13):67–103. [PubMed: 11454435]
11. Bertelson AD, Monroe LJ. Personality patterns of adolescent poor and good sleepers. J Abnorm Child Psychol 1979;7:191–197. [PubMed: 469112]
12. Kales A, Caldwell AB, Soldatos CR, Bixler EO, Kales JD, Riemann D, et al. Biopsychobehavioral correlates of insomnia. II. Pattern specificity and consistency with the Minnesota Multiphasic Personality Inventory. Psychosom Med 1983;45:341–356. [PubMed: 6622623]
13. Harvey AG. Pre-sleep cognitive activity: a comparison of sleep-onset insomniacs and good sleepers. Br J Clin Psychol 2000;39(3):275–286. [PubMed: 11033749]
14. Cummings, EM.; Cicchetti, D. Toward a translational model of relations between attachment and depression: Attachment in the preschool years. Greenberrg, MT.; Cicchetti, D.; Cummings, EM., editors. Chicago: University of Chicago Press; 1990.
15. Paavonen, J. An Academic Dissertation. University of Helsinki Dept of Child Psychiatry; 2004. Sleep disturbances and psychiatric symptoms in school-aged children; p. 1-69.
16. Jean-Louis G, Kripke D, Cohen C, Zizi F, Wolintz A. Associations of ambient illumination with mood: Contribution of ophthalmic dysfunctions. Physiol Behav 2005;84(3):479–487. [PubMed: 15763587]
17. Gurland B, Golden RR, Teresi JA, Challop J. The SHORT-CARE: an efficient instrument for the assessment of depression, dementia and disability. J Gerontol 1984;39:166–169. [PubMed: 6699370]
18. Teresi JA, Golden RR, Gurland BJ, Wilder DE, Bennett RG. Construct validity of indicator-scales developed from the Comprehensive Assessment and Referral Evaluation interview schedule. J Gerontol 1984;39:147–157. [PubMed: 6699368]
19. Teresi JA, Golden RR, Gurland BJ. Concurrent and predictive validity of indicator scales developed for the Comprehensive Assessment and Referral Evaluation interview schedule. J Gerontol 1984;39:158–165. [PubMed: 6699369]
20. Baca-Garcia E, Blanco C, Saiz-Ruiz J, Rico F, Diaz-Sastre C, Cicchetti DV. Assessment of reliability in the clinical evaluation of depressive symptoms among multiple investigators in a multicenter clinical trial. Psychiatry Res 2001;102:163–173. [PubMed: 11408055]
21. Horne JA, Ostberg O. A self-assessment questionnaire to determine morningness-eveningness in human circadian rhythms. Intrnl J Chronobiology 1976;4:97–110.
22. Sheikh JI, Yesavage JA, Brooks JO, Friedman L, Gratzinger P, Hill RD, Zadeik A, Crook T. Proposed factor structure of the Geriatric Depression Scale. Int Psychogeriatr 1991;3(1):23–8. [PubMed: 1863703]
23. Lyness JM, Noel TK, Cox C, King DA, Conwell Y, Caine ED. Screening for depression in elderly primary care patients. A comparison of the Center for Epidemiologic Studies-Depression Scale and the Geriatric Depression Scale. Arch Intern Med 1997 Feb 24;157(4):449–454. [PubMed: 9046897]
24. Burke WJ, Nitcher RL, Roccaforte WH, Wengel SP. A prospective evaluation of the Geriatric Depression Scale in an outpatient geriatric assessment center. J Am Geriatr Soc 1992;40:1227–1230. [PubMed: 1447439]
25. Muller RT, Lemieux KE. Social support, attachment, and psychopathology in high risk formerly maltreated adults. Child Abuse & Neglect 2000;24(7):883–900. [PubMed: 10905414]
26. Carnelley KB, Pietromonaco PR, Jaffe K. Depression, working models of others, and relationship functioning. J Pers Soc Psychol 1994;66:127–140. [PubMed: 8126643]
27. Willlams CM. Using medications appropriately in older adults. Am Fam Physician 2002 Nov 15;66 (10):1917–24. [PubMed: 12469968]

28. Murray MD, Callahan CM. Improving medication use for older adults: an integrated research agenda. Ann Intern Med 2003;139(52):425–429. [PubMed: 12965970]

Table 1

Characteristics of the Sample Stratified by Ethnicity

Variable	African American (mean ± SE)	European American (mean ± SE)	F	p
Age (years)	65.64 ± 1.15	70.11 ± 1.08	8.05	.01
Body Mass Index (kg/m^2)	30.45 ± 1.10	25.28 ± 1.04	11.75	.01
Geriatric Depression Scale	7.44 ± .92	8.46 ± .87	.65	.42
Relationship Style Questionnaire	78.64 ± 2.92	73.50 ± 2.76	1.63	.21
Subjective Sleep Duration (hours)	5.83 ± .24	6.53 ± .22	4.67	.04
Pittsburgh Sleep Quality Index	4.81 ± .71	4.89 ± .63	.15	.71

Table 2

Association between Sleep Measures and Preoccupied Attachment Style

Variable	r
Difficulty initiating sleep	0.19
Difficulty maintaining sleep	0.12
Naps	0.31*
Sleep medication	0.37*
Total sleep time	-0.19
Sleep efficiency index	0.17
Sleep onset latency	-0.03

* $p < 0.05$