

Attachment Styles and Nightmares in Adults

Livia A. Belfiore and Reinhard Pietrowsky

Heinrich Heine University Düsseldorf

A number of different causes have been discussed with respect to the etiology or treatment of nightmares. Among them, however, relatively little attention has been given to early developing emotional factors, like attachment. Previous results hint to a relationship between nightmare frequency and attachment style. The present study thus served to further substantiate this observation by investigating the relationship between attachment styles and nightmare frequency and nightmare distress. Results reveal that subjects with insecure attachment styles report more nightmares and more nightmare distress than those with a secure attachment style. In particular, among the insecure attachment styles, the fearful attachment style is most prone to higher nightmare frequency and nightmare distress. The results indicate that among personality factors and current stressors, attachment styles may also affect nightmares.

Keywords: attachment style, secure attachment, insecure attachment, nightmare frequency, nightmare distress

While a multitude of research has focused on various sleep disturbances, an increasing number of investigators have recently shown the severe effects of nightmares on sufferers of both posttraumatic and idiopathic nightmares (Schredl & Göritz, 2014; Thünker, Norpoth, von Aspern, Özcan, & Pietrowsky, 2014). Possible roots for nightmare occurrence have been found to range from personality traits, particularly neuroticism (Spoomaker & van den Bout, 2005), stressful life events (Berquier & Ashton, 1992), or stressful environmental factors (Kales et al., 1980), to posttraumatic stress (Spoomaker & Montgomery, 2008). In addition, Hartmann's boundary concept suggests that subjects with so-called thin boundaries are prone to confuse the lines not only between their own and other people's perspectives or emotions but also between reality, daydreaming, and dreams or nightmares they might experience at night (Hartmann, 1991). Notwithstanding the theoretical approach with respect to the etiology of nightmares, researchers unanimously acknowledge that nightmares affect subjects in a multitude of ways, from depression to anxiety disorders (Levin & Fireman, 2002; Volpe & Levin, 1998).

Livia A. Belfiore and Reinhard Pietrowsky, Department of Clinical Psychology, Institute for Experimental Psychology, Heinrich Heine University Düsseldorf.

Correspondence concerning this article should be addressed to Reinhard Pietrowsky, Heinrich-Heine-Universität, Abt. Klinische Psychologie, Universitätsstr. 1, 40225 Düsseldorf, Germany. E-mail: r.pietrowsky@hhu.de

An additional concept that may help understand who might be likely affected by nightmares is attachment theory (Bowlby, 1982). This theory suggests that on the basis of childhood experiences, people may develop different attachment styles, that is, the behavioral and emotional reactions to close persons and following the (temporal) loss of this relationship. In addition to a secure attachment style, three insecure attachment styles have been defined: the avoidant, preoccupied, and fearful attachment styles (Ainsworth, 1964). While a secure attachment style results in a stable behavioral and emotional relation to primary and later attachment figures, the insecure attachment styles are related to emotional and social difficulties in relationships and social interactions (Bartholomew & Horowitz, 1991). It was shown that insecure attachment styles are also related to more psychological complaints and distress in juvenile and adult life (Bifulco, Moran, Ball, & Bernazzani, 2002). Since insecure attachment styles are also related to difficulties in the regulation of closeness and boundaries, a possible link between attachment styles and nightmares (i.e., boundary thinness) can be hypothesized.

So far, Csóka, Simor, Szabó, Kopp, and Bódizs (2011) have examined how childhood separation from the mother as an attachment figure relates to nightmares in adults discriminating between secure and insecure styles. They found that early maternal separation was associated with high nightmare frequency in adults as well as high negative dream affect. Although some research indicates that subjects with an anxious attachment style are significantly more prone to sleep disturbances (Escolas, Pitts, Safer, & Bartone, 2013; Maunder, Hunter, & Lancee, 2011; Troxel, Cyranowski, Hall, Frank, & Buysse, 2007; Verdecias, Jean-Louis, Zizi, Casimir, & Browne, 2009), little is known about its influence on nightmares. Arguing that distinguishing the various types of insecure attachment styles would offer additional data to further interpret and investigate the relationship between nightmares and attachment styles, we conducted this research with the central assumption that insecure patterns of attachment would be significantly associated with nightmare occurrence, nightmare distress and impairment of everyday life. We predicted that subjects with insecure attachment patterns would report significantly more nightmares as well as suffer from significantly more nightmare distress than those with a secure attachment style. When looking at the insecure styles, we also predicted that those with a “fearful” pattern of attachment would suffer from significantly more nightmares than subjects who fall into the “avoidant” or “preoccupied” categories. Furthermore, we assumed that categories of the Experience in Close Relationship Scale (ECR) would be significantly different with respect to nightmare distress as assessed by the Nightmare Distress Questionnaire (NDQ). Moreover, we hypothesized that ECR scores would predict the NDQ total score.

Method

Participants

For the purpose of this study, we recruited participants via online platforms and social media, as well as through face-to-face interactions. Paper-and-pencil submissions were manually added to our database. The face-to-face contacts and paper-and-pencil submissions were mainly recruited in the university context,

resulting in a high proportion of psychology students in the sample. Surveys were conducted from May 2014 until December 2015. Using the server-side scripting language PHP, the open-source relational database management system MySQL, and the open-source JavaScript library jQuery, an online interface was created where participants filled out the survey and our team gathered all relevant data. A total of 1,569 subjects started the online survey; 610 participants dropped out during the survey, and 5 participants identified with nonsensical entries. The resulting sample therefore counted a total of 954 data sets with a mean age of 32.33 years ($SD = 11.72$), ranging from 18–77 years. It consisted of 269 men (mean age: 34.12; $SD = 12.84$) and 685 women (mean age: 31.63; $SD = 11.19$). The final sample held 258 subjects who indicated suffering from nightmares “at least once a month” ($n = 183$) or “at least once a week” ($n = 75$) and 696 who experienced nightmares “less than once a month” ($n = 376$) or “never at all” ($n = 320$).

Procedure

Attachment style and nightmare distress were assessed in the participants through self-evaluation measures; furthermore, we asked participants to answer a demographic assessment specifically designed to collect information about quantity and quality of nightmare experiences. The German translation of the ECR (Brennan, Clark, & Shaver, 1998; Neumann, Rohmann, & Bierhoff, 2007), consisting of 36 items using a 7-point Likert scale, was used to assess attachment styles. The instrument utilizes “avoidance” and “anxiety” scales to assign participants to one of the four categories with respect to attachment—in addition to the “secure” pattern, “insecure” patterns are expressed in “avoidant,” “preoccupied,” and “fearful” categories. Using the mean values of our sample for the ECR scales as a cutoff to differentiate between high and low scores (anxiety, $M = 3.47$, $SD = 1.20$; avoidance, $M = 3.00$, $SD = 1.12$), we conducted a *k*-means cluster analysis to designate the respective attachment style (secure: low avoidance, low anxiety; fearful: high avoidance, high anxiety; avoidant: high avoidance, low anxiety; preoccupied: high anxiety, low avoidance). Nightmare distress was assessed with the NDQ (Belicki, 1992) in its German translation (Böckermann, Gieselmann, & Pietrowsky, 2014), allowing assessment of a total score, as well as nightmare distress, sleep impact, and daytime impact subscales. To investigate the differences between groups of participants who frequently have nightmares and those who are not or rarely affected by nightmares, we pooled subjects into groups of high versus low nightmare frequency as taken from the self-reported data collected through the item “How often did you experience nightmares during the past months?” Subjects who answered “none at all” or “less than one a month” were pooled into the group of “low nightmare frequency,” and those who reported “more than once a month” or “once a week or more” were placed into the group of “high nightmare frequency.”

Results

The distribution of the attachment styles as assessed by the ECR for the total sample and the subgroups of high and low nightmare frequency is given in Table 1. As can be seen, secure attachment styles are more likely in participants with low

Table 1
Participants Displaying the Attachment Style as Assessed by the Experiences in Close Relationship Scale for the Whole Sample of Participants and for the Subgroups of Subjects With High or Low Nightmare Frequency

Attachment style	Total sample (<i>N</i> = 954), <i>n</i> (%)	High nightmare frequency (<i>n</i> = 258), <i>n</i> (%)	Low nightmare frequency (<i>n</i> = 696), <i>n</i> (%)
Secure	307 (32.2)	44 (17.1)	263 (37.8)
Avoidant	186 (19.5)	60 (23.3)	126 (18.1)
Preoccupied	287 (30.1)	80 (31.0)	207 (29.7)
Fearful	174 (18.2)	74 (28.7)	100 (14.4)

nightmare frequency while insecure attachment styles (avoidant, preoccupied, and fearful) are more likely in participants with high nightmare frequency.

In the subgroup with high nightmare frequency (*n* = 258), 81 (31.4%) admitted to using prescription drugs to cope with the condition and 74 (28.7%) said they worked with a therapist. This group specified being diagnosed with depression (31.5%), anxiety (17.7%), posttraumatic stress disorder (PTSD; 10.8%), obsessive-compulsive disorder (2.3%), addiction (2.3%), or “other mental disorders” (9.6%). Of the subjects with high nightmare frequency, 54.3% stated that they usually awake with fright from their dreams while 45.7% tended to sleep through them. When asked about recurring topics in their nightmares using multiple choice, subjects with frequent nightmares indicated nightmare motifs to be about “threats/chasing” (74.6%), “violence/attacks” (52.3%), “death/dying” (57.3%), “loss/abandonment” (62.4%), “accident/catastrophe” (45.8%), “animals/other beings” (24.6%), and “other” (28.2%), consisting of “defeat” (*n* = 7), disorientation” (*n* = 5), “exams” (*n* = 3), “falling” (*n* = 2), “tooth decay” (*n* = 2), and “fire” (*n* = 2). Emotions experienced during the nightmare in those participants with frequent nightmares were assessed through multiple choice, adding up to “fear” (91.4%), “shame/disgust” (31.8%), “sadness” (67.8%), “aggression/anger” (47.3%), “surprise” (29.8%), and “other” emotions (8.1%), including “worries” (*n* = 8), “panic/angst” (*n* = 4), “disappointments” (*n* = 2), “helplessness” (*n* = 9), “desperation” (*n* = 5), “irritation” (*n* = 3), “stress” (*n* = 3), “loneliness” (*n* = 2), and “commotion” (*n* = 2).

We combined participants with the avoidant, preoccupied, and fearful patterns into the “insecure” group and conducted a chi-square test between high versus low nightmare frequency and secure versus insecure attachment styles, revealing that out of 628 participants with an insecure attachment style, 32.50% reported high-frequency nightmares, while 15.27% of the 326 subjects with a secure attachment style were in the high-frequency nightmare group, $\chi^2(1, N = 965) = 31.99, p < .001$; Table 2. When looking at the insecure attachment style, participants with a “fearful” style were more likely to have a higher nightmare frequency than both the participants with “avoidant” and the “preoccupied” styles pooled into one group, $\chi^2(1, N = 965) = 10.15, p < .001$; Table 2.

With respect to the NDQ scales, significant differences were observed between the four ECR attachment style groups in accordance to our predictions (NDQ total score: $F = 26.83, p < .001$; NDQ distress: $F = 3.22, p < .001$; NDQ sleep impact: $F = 4.82, p < .001$; NDQ daytime impact: $F = 5.39, p < .001$). NDQ scores were significantly lower for participants assigned to the secure attachment style com-

Table 2
Percentage of Participants With Nightmares Depending on the Attachment Styles

Attachment style	Participants with nightmares (%)
Secure ($n = 326$)	15.3
Insecure ($n = 628$)	32.5
Fearful	41.8
Avoidant and preoccupied	28.8

pared to those with preoccupied attachment, avoidant attachment, and fearful attachment, as illustrated in Table 3.

To further substantiate these differences, subsequent analyses of variance were performed (a) between the secure and the combined insecure attachment styles and (b) within the insecure attachment styles between the fearful and the two other insecure attachment styles. When contrasting the secure with the combined insecure attachment styles (avoidant, preoccupied, and fearful), significantly more nightmare distress related to insecure attachment emerged on all NDQ scales: NDQ total ($F = 21.88, p < .001, d = 0.40$), NDQ distress ($F = 8.75, p = .007, d = 0.25$), NDQ sleep impact ($F = 28.19, p < .001, d = 0.46$), and NDQ daytime impact ($F = 14.00, p < .001, d = 0.32$). Within the insecure attachment styles, the “fearful” category was significantly more affected by nightmares than the “avoidant and preoccupied” category: NDQ total ($F = 21.49, p < .001, d = 0.46$), NDQ distress ($F = 8.66, p = .003, d = 0.30$), NDQ sleep impact ($F = 15.77, p < .001, d = 0.34$), and NDQ daytime impact ($F = 21.43, p < .001, d = 0.47$).

Both ECR scales—“anxiety” and “avoidance”—predicted NDQ total score, as shown by a multiple regression analysis. Using the enter method, anxiety and

Table 3
Means and Standard Deviations of NDQ Measures Among ECR Attachments Styles and Pairwise Comparisons Between Secure and Each of the Insecure Attachment Styles

NDQ	Secure ($n = 181$)		Preoccupied ($n = 159$)		Avoidant ($n = 136$)		Fearful ($n = 165$)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Total	26.25	9.28	30.67	8.67	34.22	13.68	35.16	11.30
			$t(388) = -4.52$		$t(254) = -5.86$		$t(325) = -7.96$	
			$p < .001, d = .39$		$p < .001, d = .68$		$p < .001, d = .86$	
Distress	10.03	4.75	11.41	4.30	13.47	6.12	13.36	5.11
			$t(388) = -2.79$		$t(254) = -5.45$		$t(334) = -6.26$	
			$p = .005, d = .31$		$p < .001, d = .63$		$p < .001, d = .68$	
Sleep impact	7.32	2.39	8.72	2.42	8.63	3.15	9.32	2.57
			$t(388) = -5.12$		$t(254) = -5.23$		$t(325) = -7.19$	
			$p < .001, d = .58$		$p < .001, d = .47$		$p < .001, d = .81$	
Daytime impact	7.53	3.00	9.06	3.19	9.93	4.69	10.53	3.99
			$t(388) = -5.30$		$t(254) = -4.06$		$t(325) = -7.48$	
			$p < .001, d = .49$		$p < .001, d = .61$		$p < .001, d = .85$	

Note. NDQ = Nightmare Distress Questionnaire; ECR = Experiences in Close Relationship Scale.

avoidance ratings explained a significant amount of the variance in the NDQ total rating ($F = 42.46, p < .001, R^2 = .118, R^2 \text{ adjusted} = .115$). The analysis showed significant prediction of the NDQ rating for both anxiety ($\beta = .23, t(636) = 6.17, p < .001$) and avoidance ($\beta = .24, t(636) = 6.41, p < .01$).

Discussion

Consistent with our predictions, subjects with insecure attachment styles reported more nightmares than subjects with “secure” attachment patterns. Also consistent with our hypotheses, we found the “insecure” group to have higher nightmare distress, as highlighted by significant differences in the “secure” group on every scale of the NDQ. These findings are congruous with previous research showing that subjects with an insecure attachment style tend to suffer from sleep disturbances, especially from nightmares (Csóka et al., 2011). The present investigation further highlights that this group of participants also reports having more nightmare distress, referring to both sleep and daytime impact and thus emphasizing the effects of their disturbance on various and diverse areas of their day-to-day life.

Comparing subjects falling into the “fearful” category to a combined insecure group of “avoidant” and “preoccupied” subjects, we found that they not only suffer from significantly more nightmares but also experience more distress as measured by all NDQ scales. These findings take aforementioned previous research by Csóka et al. (2011) to a new level, as we were able to determine the specific attachment style that stands out as most vulnerable to nightmare suffering.

Moreover, our analyses showed that attachment style groups as determined by the ECR differed significantly from one another with respect to their nightmare distress as rated through the NDQ total score, with the “secure” participants scoring lowest. Moreover, we found that ECR scales predicted NDQ total score outcome, which showed that both anxiety and avoidance have an impact on nightmare suffering. As we predicted, the combination of the two scales explained a great amount of variance with respect to the NDQ total score.

Assessing attachment styles through multiple-choice questionnaires as done in the present study can be argued to not be as multifarious and abundant in information as qualitative investigations using, for example, semistructured interviews, as pointed out by Roisman et al. (2007); nonetheless, self-evaluation represents the method of choice for an epidemiological approach like ours aiming at reaching close to a thousand participants. Nightmare frequency was assessed through a 4-point multiple-choice item that asked each participant to recount how often he or she experienced nightmares. While some studies about nightmare occurrence suggest that up to 70% of the general population suffer from occasional nightmares (Hublin, Kaprio, Partinen, & Koskenvuo, 1999), most researchers have found around 3%–5% of the adult population suffers from frequent nightmares (Hublin et al., 1999; Klink & Quan, 1987; Spoormaker & van den Bout, 2005; Stepansky et al., 1998). Since, additionally, as many are estimated to “have a current problem with nightmares” (Nielsen & Zadra, 2000), we decided to split our sample into groups of high and low nightmare frequency by grouping those who said they never or seldom experience nightmares and those who suffered from them

at least once a month. Since Levin and Fireman (2002) consider nightmare frequency to be high when a subject experiences nightmares at least once a week, one could argue that the cutoff could have been higher—we decided against this for the present study, since this very strict criterion is applied mostly for therapy indication.

Although the number of participants in this study was high, we counted far more subjects with very little or no nightmare suffering at all—this is an equivalent rendition of the population, considering that most studies found nightmare suffering to be prevalent in far less than 10% of the nonclinical population (Spoomaker, 2008). The very homogeneous female subsample can be considered another limitation of this study, since a large number of all participants were psychology students.

Last, some researchers have pointed out that anxiety as a trait might affect outcome measures in attachment style assessment (Dilmaç, Hamarta, & Arslan, 2009). It is thus to be noted that we administered no specific measure to test for trait anxiety. However, it should be noted that to some degree, trait anxiety may have confounded the results in a way that higher trait anxiety may be correlated with insecure attachment styles as well as with a higher nightmare frequency. Thus, trait anxiety may link insecure attachment and nightmare frequency and nightmare distress.

Beyond that, a possible link between nightmares and attachment style can be seen in emotion regulation in general and with respect to trauma in particular. Subjects with an unsecure attachment style may not only experience more fear or anxiety than secure-bound persons but also suffer more from other negative emotions like hopelessness, grief, or loneliness and exhibit less effective (intrapersonal) coping behavior for these emotions. Thus, this pronounced experience of negative emotions may lead to more nightmares and nightmare distress. In particular, it may be speculated that persons with insecure attachment styles had experienced more traumas during early childhood (which prevented a secure attachment), leading to an enhanced nightmare prevalence, especially if these traumas were unresolved (e.g., Lyons-Ruth & Block, 1996). However, the percentage of participants with PTSD in our sample (10.8%) is much smaller than the percentage of insecure attached participants. However, not all subjects with an unresolved childhood trauma may be aware of that, and not every trauma leads to PTSD, so the number of PTSD diagnoses probably underestimates the number of experienced traumas.

Our findings bring to light a link between an insecure attachment pattern and nightmare suffering that opens an interesting field of research to be investigated. Particularly, looking at the evidence that the “fearful” attachment style is most prone to nightmare suffering, it is reasonable to infer that subjects with this attachment style not only experience ambivalent and anxious attachment behavior, leading to more experiences that are not properly processed and thus transferred into dreams and nightmares, but also lack the ability to cope with distress. The resulting feeling of insufficient emotional support because of such constraints on closeness may leave these individuals feeling as though they are helpless against their suffering, once again confirming their internal working model with respect to attachment. The presented findings open a new perspective on nightmares with respect to attachment, as well as the link between the two.

References

- Ainsworth, M. D. (1964). Patterns of attachment behavior shown by the infant in interaction with his mother. *Merrill-Palmer Quarterly*, *10*, 51–58.
- Bartholomew, K., & Horowitz, L. M. (1991). Attachment styles among young adults: A test of a four-category model. *Journal of Personality and Social Psychology*, *61*, 226–244. <http://dx.doi.org/10.1037/0022-3514.61.2.226>
- Belicki, K. (1992). Nightmare frequency versus nightmare distress: Relations to psychopathology and cognitive style. *Journal of Abnormal Psychology*, *101*, 592–597. <http://dx.doi.org/10.1037/0021-843X.101.3.592>
- Berquier, A., & Ashton, R. (1992). Characteristics of the frequent nightmare sufferer. *Journal of Abnormal Psychology*, *101*, 246–250. <http://dx.doi.org/10.1037/0021-843X.101.2.246>
- Bifulco, A., Moran, P. M., Ball, C., & Bernazzani, O. (2002). Adult attachment style. I: Its relationship to clinical depression. *Social Psychiatry and Psychiatric Epidemiology*, *37*, 50–59. <http://dx.doi.org/10.1007/s127-002-8215-0>
- Böckermann, M., Gieselmann, A., & Pietrowsky, R. (2014). What does nightmare distress mean? Factorial structure and psychometric properties of the Nightmare Distress Questionnaire (NDQ). *Dreaming*, *24*, 279–289. <http://dx.doi.org/10.1037/a0037749>
- Bowlby, J. (1982). Attachment and loss: Retrospect and prospect. *American Journal of Orthopsychiatry*, *52*, 664–678. <http://dx.doi.org/10.1111/j.1939-0025.1982.tb01456.x>
- Brennan, K. A., Clark, C. L., & Shaver, P. R. (1998). Self-report measurement of adult attachment: An integrative overview. In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 46–76). New York, NY: Guilford.
- Csóka, S., Simor, P., Szabó, G., Kopp, M. S., & Bódizs, R. (2011). Early maternal separation, nightmares, and bad dreams: Results from the Hungarostudy Epidemiological Panel. *Attachment & Human Development*, *13*, 125–140. <http://dx.doi.org/10.1080/14616734.2011.553991>
- Dilmaç, B., Hamarta, E., & Arslan, C. (2009). Analysing the trait anxiety and locus of control of undergraduates in terms of attachment styles. *Kuram ve Uygulamada Eğitim Bilimleri*, *9*, 143–159.
- Escolas, S. M., Pitts, B. L., Safer, M. A., & Bartone, P. T. (2013). The protective value of hardness on military posttraumatic stress symptoms. *Military Psychology*, *25*, 116–123. <http://dx.doi.org/10.1037/h0094953>
- Hartmann, E. (1991). *Boundaries in the mind: A new psychology of personality*. New York, NY: Basic Books.
- Hublin, C., Kaprio, J., Partinen, M., & Koskenvuo, M. (1999). Limits of self-report in assessing sleep terrors in a population survey. *Sleep: Journal of Sleep Research & Sleep Medicine*, *22*, 89–93.
- Kales, A., Soldatos, C. R., Caldwell, A. B., Charney, D. S., Kales, J. D., Markel, D., & Cadieux, R. (1980). Nightmares: Clinical characteristics and personality patterns. *The American Journal of Psychiatry*, *137*, 1197–1201. <http://dx.doi.org/10.1176/ajp.137.10.1197>
- Klink, M., & Quan, S. F. (1987). Prevalence of reported sleep disturbances in a general adult population and their relationship to obstructive airways diseases. *Chest*, *91*, 540–546. <http://dx.doi.org/10.1378/chest.91.4.540>
- Levin, R., & Fireman, G. (2002). Nightmare prevalence, nightmare distress, and self-reported psychological disturbance. *Sleep: Journal of Sleep and Sleep Disorders Research*, *25*, 205–212.
- Lyons-Ruth, K., & Block, D. (1996). The disturbed caregiving system: Relation among childhood trauma, maternal caregiving, and infant affect and attachment. *Infant Mental Health Journal*, *17*, 257–275. [http://dx.doi.org/10.1002/\(SICI\)1097-0355\(199623\)17:3<257::AID-IMHJ5>3.0.CO;2-L](http://dx.doi.org/10.1002/(SICI)1097-0355(199623)17:3<257::AID-IMHJ5>3.0.CO;2-L)
- Maunder, R. G., Hunter, J. J., & Lancee, W. J. (2011). The impact of attachment insecurity and sleep disturbance on symptoms and sick days in hospital-based health-care workers. *Journal of Psychosomatic Research*, *70*, 11–17. <http://dx.doi.org/10.1016/j.jpsychores.2010.09.020>
- Neumann, E., Rohmann, E., & Bierhoff, H. W. (2007). Entwicklung und Validierung von Skalen zur Erfassung von Vermeidung und Angst in Partnerschaften [Development and validation of scales for measuring avoidance and anxiety in romantic relationships]. *Diagnostica*, *53*, 33–47. <http://dx.doi.org/10.1026/0012-1924.53.1.33>
- Nielsen, T. A., & Zadra, A. (2000). Dreaming disorders. *Principles and Practice of Sleep Medicine*, *3*, 753–772.
- Verdecias, R. N., Jean-Louis, G., Zizi, F., Casimir, G. J., & Browene, R. C. (2009). Attachment styles and sleep measures in a community-based sample of older adults. *Sleep Medicine*, *10*, 664–667. <http://dx.doi.org/10.1016/j.sleep.2008.05.011>
- Roisman, G. I., Holland, A., Fortuna, K., Fraley, R. C., Clausell, E., & Clarke, A. (2007). The adult attachment interview and self-reports of attachment style: An empirical rapprochement. *Journal of Personality and Social Psychology*, *92*, 678–697. <http://dx.doi.org/10.1037/0022-3514.92.4.678>
- Schredl, M., & Göritz, A. S. (2014). Umgang mit Alpträumen in der Allgemeinbevölkerung: Eine Online-Studie [Coping with nightmares in the general population: An online study]. *Psychotherapie · Psychosomatik · Medizinische Psychologie*, *64*, 192–196. <http://dx.doi.org/10.1055/s-0033-1357131>

- Spoormaker, V. I. (2008). A cognitive model of recurrent nightmares. *International Journal of Dream Research, 1*, 15–22. <http://dx.doi.org/10.11588/ijodr.2008.121>
- Spoormaker, V. I., & Montgomery, P. (2008). Disturbed sleep in post-traumatic stress disorder: Secondary symptom or core feature? *Sleep Medicine Reviews, 12*, 169–184. <http://dx.doi.org/10.1016/j.smrv.2007.08.008>
- Spoormaker, V. I., & van den Bout, J. (2005). The prevalence of sleep disorders in the Netherlands. *Sleep-Wake Research in the Netherlands, 16*, 155–158.
- Stepansky, R., Holzinger, B., Schmeiser-Rieder, A., Saletu, B., Kunze, M., & Zeitlhofer, J. (1998). Austrian dream behavior: Results of a representative population survey. *Dreaming, 8*, 23–30. <http://dx.doi.org/10.1023/B:DREM.0000005912.77493.d6>
- Thünker, J., Norpoth, M., von Aspern, M., Özcan, T., & Pietrowsky, R. (2014). Nightmares: Knowledge and attitudes in health care providers and nightmare sufferers. *Journal of Public Health and Epidemiology, 6*, 223–228. <http://dx.doi.org/10.5897/JPHE2013.0565>
- Troxel, W. M., Cyranowski, J. M., Hall, M., Frank, E., & Buysse, D. J. (2007). Attachment anxiety, relationship context, and sleep in women with recurrent major depression. *Psychosomatic Medicine, 69*, 692–699. <http://dx.doi.org/10.1097/PSY.0b013e3180cc2ec7>
- Volpe, N., & Levin, R. (1998). Attributional style, dreaming and depression. *Personality and Individual Differences, 25*, 1051–1061. [http://dx.doi.org/10.1016/S0191-8869\(98\)00073-7](http://dx.doi.org/10.1016/S0191-8869(98)00073-7)