

Sleep Positions and Personality: Zuckerman–Kuhlman’s Big Five, Creativity, Creativity Styles, and Hypnotizability

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Dunkell’s (1977) pioneering work suggested possible associations between sleep positions and personality traits. We located only two studies since Dunkell’s that provide general support to the notion that sleep positions may be reflective of personality. This study examined whether selected body positions at sleep onset, along with varied or do not know category, were associated with the selected personality characteristics. Participants were 332 psychology students. In contrast to findings from previous studies, the results supporting the relationship of sleep positions and personality were too weak, with small effects sizes, to be useful for any theoretical or clinical purposes.

Extant studies (e.g., Dunkell, 1977, 1994; Schredl, 2002) suggest that the body, when we sleep, adopts various positions and these positions are possibly related to individual differences in defense mechanisms, everyday interactions with others, and personality characteristics (Domino & Bohn, 1980). Furthermore, the use of different methods and terms in these studies makes it difficult to draw general inferences about the relationship between sleep positions and personality. The present study was designed to comprehensively examine the relationships of selected sleep positions with Zuckerman-Kuhlman’s big five characteristics, hypnotizability, creativity, and styles of creativity.

Dunkell (1977) proposed that the location of hands, feet, heels, ankles, wrists, elbows, calves, knees and thighs while asleep may carry information concerning an individual’s personality. Also, the positioning of buttocks when couples sleep together may communicate something about their personality. Dunkell (1977) identified a wide variety of preferred sleep positions, including the Full-fetal, Prone, Royal, Semi-fetal, Chain-gang, Sandwich, Flamingo, Water Wings, Boxer, Mummy,

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Sphinx, Monkey, Dutch Wife, Barrymore, Military Brace, Cat, and Swastika. Dunkell reported that the Full-fetal Prone, Royal, and Semi-fetal were the most common sleeping positions (1977), and these four positions seem to have been most commonly evaluated across different studies.

Dunkell (1977) observed that the (a) Semi-fetal sleepers were normal and well adjusted, (b) Full-fetal and Prone sleepers were anxious and (c) Royal position sleepers were self-confident. In a later publication, Dunkell (1994, pp. 143-144) noted the Prone position sleepers to show tendencies for impulsivity, obsessive-compulsive behavior, rigidity, perfectionism, less sociability, and apt to "do well in professions like banking, accounting, business and management." The Royal position sleepers were observed to be open, expansive, self-confident, and sensation seeking. While the Semi-fetal sleepers were described as conciliatory in nature, amenable to compromises, and unlikely to take extreme stances, the Full-fetal sleepers were described as anxious and emotional.

Domino and Bohn (1980), noting that Dunkell's (1977) "evidence consists of selected clinical cases and colorful anecdotes of psychotherapeutic incidents" (p. 760), conducted an empirical study examining the relationship between the *California Psychological Inventory* and 14 drawings of sleep positions selected from Dunkell (1977). Their participants were 51 "normal" (p. 760) females, ranging in age from 17 to 41, who volunteered for a dream study. The participants selected one position they typically used and then completed the *California Psychological Inventory*. Six months later, the participants selected a sleep position from the same, but randomly ordered, drawings.

Domino and Bohn (1980) reported that preference for sleep positions was highly reliable inasmuch as 41 participants selected the same position after 6 months; only 3 chose a different sleep position. Only one person chose the prone position and none chose the royal position, a result inconsistent with Dunkell's (1977) observation that the four most common positions are Full-fetal, Semi-fetal, Prone, and Royal. However, they noted that they made no attempt to verify whether the chosen sleep positions were indeed the ones used by their participants.

Six of the 14 sleeping positions were selected for statistical analysis because they were the most common sleep positions reported: Semi-fetal ($n = 13$), Swastika ($n = 11$), Dutch wife ($n = 6$), full fetal ($n = 5$), Flamingo ($n = 4$), and Sandwich ($n = 4$). A one-way Analysis of Variance completed for each of the 18 CPI scales across the six sleep positions showed significant differences among the sleep positions on the following CPI subscales: Sociability, Sense of Well-Being, Femininity, Social Maturity, and Achievement by Conformance.

Using post-hoc tests, Domino and Bohn found, consistent with Dunkell's (1977) observation, that the Full-fetal position was associated with lower sociability and lower sense of well-being compared with other positions. They also found, consistent with Dunkell's (1977) observation, that the Semi-fetal and Swastika positions (a variation of Semi-fetal position) were reflective of better adjustment, as indicated by above average scores on the social maturity.

Schredl (2002) investigated the relationship between body position at sleep onset and personality dimensions associated with emotions in 47 psychology students (32 women and 15 men). Students completed a sleep questionnaire and the German version of the *16-PF Personality Inventory* (Schneewind, Schroder & Cattell, 1983). One questionnaire item elicited the position at sleep onset as detailed as possible including the placement of the body, arms and legs. These descriptions were classified into four groups: Semi-fetal (lying on side), Fetal (lying on side, body curled up), Prone (face down), and Royal (lying on back).

Schredl (2002) found that the Semi-fetal and Fetal positions were most common at sleep onset. Consistent with both Dunkell's (1977) and Domino and Bohn's (1980) results, Schredl found the Prone position to be associated with trait anxiety and less self-confidence, compared with other positions included in the study. However, inconsistent with Dunkell's and Domino and Bohn's results, Schredl did not find significant differences between the Fetal and Royal positions on either self-confidence or trait anxiety.

The Present Study

This study examined the relationship of selected body positions at sleep onset, as reported by participants, and selected personality characteristics in a more comprehensive way than studies reviewed earlier. In addition to Zuckerman-Kuhlman alternative big five personality dimensions (Neuroticism-Anxiety, Sociability, Activity, Impulsive Sensation Seeking, & Aggression-Hostility), creative capacity, creative styles, and hypnotizability were included in the study.

The alternative Zuckerman-Kuhlman's five-factor model was chosen because (a) there is much consensus concerning the Five-factor model (Rossier, Meyer de Stadelhofen, & Berthoud, 2004), (b) the dimensions are similar to the Big Five personality factors identified in lexical studies (De Raad, 2000), and (c) there is biological basis to the alternative five dimensions as to their heritability (McCrae, Jang, Livesley, Riemann, & Angleitner, 2001).

The four sleep positions selected were those identified by Dunkell (1977) as most common, namely: Full-fetal, Prone, Royal, and Semi-fetal. Given that there are very few published studies on sleep positions

and personality, the present study must also be seen as exploratory. However, the extant studies suggest some expectations for the present study. The studies of Dunkell (1977), Domino and Bohn (1980), and Schredl (2002) suggest that the Semi-fetal position would be most popular and the Prone and Royal positions would be least popular. Furthermore, the Semi-fetal position has been most associated in these studies with adjustment, social maturity, self-confidence, and sociability. Consequently, we expected individuals choosing the Semi-fetal position to score higher on sociability, and general activity, but lower on impulsive sensation seeking, aggression-hostility, and neuroticism compared with individuals who choose other sleep positions. The individuals choosing the Royal and Prone positions would be expected to score higher on neuroticism, but lower on general activity and sociability, compared with individuals who choose other positions.

The study also explored if sleep positions were associated with self-perceived creative capacity, styles (beliefs and approaches to “being creative”) of creativity, and hypnotizability. Self-perceived creative capacity and styles of creativity were measured by Kumar and Holman’s (1997) *Creativity Styles Questionnaire-Revised* and hypnotizability was measured by Barber and Wilson’s (1977) *Creative Imagination Scale*.

Sleep Positions, Creative Capacity and Creativity Styles

If it can be assumed, per Dunkell (1994), that individuals showing preference for the Prone position are rigid perfectionists, and individuals showing preference for the Royal position are open and expansive, then the former (Prone sleepers) would be more likely to report being less creative than the latter (Royal sleepers).

Kumar and Holman (1997) identified seven styles of creativity: (a) Belief in Unconscious Processes (e.g., needing to be in the right mood to work; reporting having ideas without thinking about them); (b) Use of Techniques (e.g., brainstorming, long walks, working on multiple ideas simultaneously); (c) Use of Other People (e.g., consulting, working, and sharing ideas or products with other people); (d) Final Product Orientation (e.g., engaging in creative work to develop a final visible product); (e) Environmental Control and Behavioral Self-Regulation (e.g., setting up discriminative stimuli to facilitate creative work, i.e., choice of time, place, music, and use of mind altering substances); (f) Superstition (e.g., wearing a favorite amulet or a piece of clothing, using a favorite tool such as an easel, pen, or a thinking cap); and (g) Use of the Senses (e.g., extent of use of the five senses for creative work).

Studies by Kumar and colleagues (Kumar, Holman, & Rudegeair, 1991; Kumar, Kemmler, & Holman, 1997; Lack, Kumar, & Aravelo, 2003; Manmiller, Kumar, & Pekala, 2005; Pollick & Kumar, 1997) have

shown that individuals who view themselves as more creative tend to report (a) greater belief in unconscious processes, (b) use a larger number of techniques to a greater degree, and (c) tend to be intrinsically motivated (i.e., are not final product oriented) when they engage in creative efforts. However, there are no differences between those who see themselves as more and less creative with respect to using other people, designing special environments, and using strategies based on superstition. Lack et al. (2003) found that fantasy prone individuals were more likely to report being creative, and using Other People, Environmental Control and Behavioral Self-Regulation, and Superstition-based strategies for fostering their creative efforts.

Given the characterization of Prone sleepers as less confident, anxious, rigid, perfectionistic, and less social, they would be less likely to (a) believe in unconscious processes, (b) be intrinsically motivated, (c) make use of other people in being creative, and (c) make use of environmental control and behavioral regulation strategies. Given Domino and Bohn's (1980) results that the Semi-fetal position sleepers were more sociable than Full-fetal position sleepers, it is likely that the former would be more likely to make use of other people in their creative efforts.

Sleep Positions and Hypnotizability

While historically some have viewed hypnosis as a sleep-like state (see Kirsch, Lynn, & Rhue, 1993), to the authors' knowledge no study has looked at the relationship between sleep positions and hypnotizability. Given that hypnotizability and creativity have been characterized to involve imaginative processes, fantasy, and absorption (see Manmiller et al., 2005), it is hypothesized that individuals preferring the Royal position, characterized by Dunkell (1994) as open, expansive and sensation seeking, would be most responsive to hypnotic suggestions, relative to individuals preferring other positions.

METHOD

Participants

Participants were 332 students (Males = 93, Females = 239; Mean Age = 20, Age Range = 18-39) from several psychology courses at West Chester University. All students received credit toward completing their research requirement for their respective courses. Nevertheless, participation was voluntary and students were free to withdraw their participation at any time during the study with impunity. Participants were mainly Caucasian students ($n = 300$, 90.4%). The other ethnic groups represented were 16 (4.8%) African American, 3 (0.9%) Asians, 6

(1.8%) Hispanic, and 2 (0.6%) American Indian, and 5 students did not identify their ethnic group.

Instruments

Four questionnaires were administered to the participants.

Sleep Position. A single question was asked to measure the body position at sleep onset. The instructions along with the options are as follows:

When it's time for you to sleep, which of the following best describes the most comfortable position for you to fall asleep?

1. Lie on the side with the body curled upon itself. The legs are flexed at the knees. The knees are drawn up as though attempting to touch the chin, sometimes the entire body is rolled into a kind of ball. In some instances the folded body position may curve around an object such as a pillow, which serves as the core. Usually the arms and the hands complete the circle enfolding the knees or being tucked in such a way as further to cover the center of the body
2. Lie face down on the bed, usually with arms extended over their heads and their legs stretched out with the feet somewhat apart.
3. Lie on my back.
4. Lie on the side with the knees drawn partway up.
5. Use varied positions or do not know.

The "1" through "5" descriptions correspond to the following sleep positions: Full-fetal, prone, royal and semi-fetal.

Zuckerman- Kuhlman Personality Questionnaire (ZKPQ). The ZKPQ is a measure of five personality factors, also described as the Alternative Five-Factor Model, that emerged from factor analyses of personality scales used in psychobiological research (Ball, 1995; Zuckerman, 2002; Zuckerman, Kuhlman, Joireman, Teta & Kraft, 1993). The ZKPQ, contains 99 items, uses a true-false response format for measuring Neuroticism-Anxiety (fear, worry, emotional upset, tension, being indecisive, having low confidence, and being sensitive to criticism); General Activity (need for being active, busy life, challenging work; high energy level, unable to relax and do nothing.); Sociability (outgoing, many friends, spend time with friends, not preferring to be alone); Impulsive Sensation Seeking (lack of planning, acting impulsively, need for thrill and excitement, preference for unpredictable situations and friends and the need for change and novelty in individuals), and Aggression-Hostility (readiness to express verbal aggression, rude, thoughtless or antisocial behavior, vengefulness and spitefulness, quick temper and impatience).

The ZKPQ has been tested extensively for its psychometric properties. It has demonstrated good internal consistency reliability (.74 -

.84), test-retest reliability (.82-.87), validity and cross-cultural replication (De Pascalis & Russo, 2003; Ostendorf & Angleitner, 1994; Shiomi, Kuhlman, Zuckerman, Joireman, Sato & Yata, 1996; Wu, Wang, Du, Li, Jiang & Wang, 2000; Zuckerman, 2002). The questionnaire has shown consensual validity (Gomà-i-Freixanet, Wismeijer & Valero, 2005) and concurrent validity. The ZKPQ appears to describe the characteristics of drug abusers and predicts their success in therapy (Ball, 1995) and predicts psychopathology (Gomà-i-Freixanet et al., 2008; O'Sullivan, Zuckerman & Kraft, 1996; Thornquist & Zuckerman, 1995) and risk taking (O'Sullivan, Zuckerman & Kraft, 1998; Zuckerman & Kuhlman, 2000).

Creativity Styles Questionnaire-Revised (CSQ-R). The CSQ-R (Kumar & Holman, 1997) consists of 8 subscales: (a) Self-Perceived Creative Capacity (SPCC) (b) Belief in Unconscious Processes; (c) Use of Techniques; (d) Use of Other People; (e) Final Product Orientation; (f) Superstition; (g) Environmental Control and Behavioral Self-Regulation; and (h) Use of the Senses. On all subscales, higher scores suggest higher amount of the attribute being measured. Thus, for example, for Final Product Orientation, higher scores are indicative of extrinsic motivation for creativity—that is, the person is motivated by the notion of completing tangible final products and lower scores higher intrinsic motivation..

The SPCC has yielded Cronbach α reliability values between .59 and .76 (Median = .73) and evidence of convergent validity in five studies (Fuchs, Kumar, & Porter, 2007; Lack, Kumar, & Arevalo, 2003; Manmiller, Kumar, & Pekala, 2005; Pollick & Kumar, 1997). The range and median Cronbach α reliability coefficients for the style subscales in the aforementioned five studies were as follows: .65 to .75 (Median = .67) for Belief in Unconscious Processes; .70 to .81 (Median = .77) for Use of Techniques; .22 to .75 (Median = .74) for Use of People; .23 to .45 (Median = .40) for Final Product orientation; .72 to .83 (Median = .81) for Environmental Control and Behavioral Self-Regulation; .53 to .72 (Median = .56) for Superstition; and .69 to .82 (Median = .73) for Use of Senses.

The Creative Imagination Scale. The *Creative Imagination Scale* (CIS) is a test of hypnotic responsiveness with high reliability and validity (Barber & Wilson, 1977, 1978; Wilson & Barber, 1979). The participants rate the 10 items of the scale as to how realistic their responses were to each suggestion, using a 5-point scale (0-4). Kumar and Farley (2009) using Smallest Space Analysis (SSA) to examine structural aspects of the *Creative Imagination Scale* (CIS) suggested the presence of one facet, focus of processing or variation in processing requirements with two elements: somato-sensory and imagination-

sensory. The two subsets of items can serve as two subscales. Although both sets of items require imagining experiences, the six somato-sensory items all require making a movement and/or imagining some sort of muscle movement, and imagining associated sensory experiences. In contrast, the imagination-sensory items require no actual or imaginary movements; instead, they require focusing on the experience.

Procedure

The participants were tested in groups. They completed an informed consent form and answered the four questionnaires in the following order: Sleep position, ZKPQ, and the CSQ-R. Afterwards, the “think-with” instructions and 10 items of CIS were administered via a pre-recorded audiotape to standardize the administration of the items. The “think with” instructions are “designed to demonstrate how to think along with the imaginative focus on the suggested themes” (Barber & Wilson, 1977, p. 36). The participants then responded to the CIS questionnaire.

RESULTS

Table 1 shows the means, SDs, and internal consistency reliability values (Cronbach α) for each of the scales used in the present study. The internal consistency reliability values were generally consistent with values reported for the respective scales. The two scales with the lowest reliability were Superstition and Final Product Orientation.

Table 2 displays the cross-tabulation of sex with sleep positions. The pattern of frequencies was similar for both males and females ($\chi^2 [4] = 6.51, p = .164$). Given that the χ^2 was not significant, sex was not included in any of the subsequent analyses. The overall (across both males and females) choice of positions differed significantly ($\chi^2 [4] = 111.76, p = .0001$) with semi-fetal as the most popular sleep position ($n = 136; 41.09\%$) followed by Prone ($n = 77; 23.26\%$), and then the Full-fetal position ($n = 51, 15.41\%$). The least chosen positions were Varied or Do Not Know ($n = 38, 11.48\%$) and Royal ($n = 29, 8.76\%$).

To examine if the five sleep positions differentiated the five major personality dimensions assessed by the ZKPQ scales, a Multivariate Analysis of Variance (MANOVA) was performed. The analysis revealed a significant effect over all five personality variables (Roy's Largest Root = .05, $F[5,319] = 2.99, p = .012$). Consequently, further univariate analyses were done on the five personality scales. Levene's Test of Equality of Error Variance was significant across the five sleeping positions groups for the Impulsive Sensation Seeking Scale ($F[4,320] = 2.44, p = .047$) and marginally significant for the Aggression-Hostility scale ($F[4,320] = 2.26, p = .074$). For all other scales, the assumption of the homogeneity of variance assumption was met ($F < 1.01, p > .41$ in all cases).

TABLE 1 Means, SDs and Internal Consistency Reliability Values for all Instruments Used in the Study

Subscale	Cronbach α	<i>M</i>	<i>SD</i>
Neuroticism	.83	9.16	4.52
Activity	.74	7.33	3.53
Sociability	.81	9.97	3.96
Impulsive Sensation	.78	9.64	3.93
Aggression	.78	7.56	3.67
		<i>M/item</i>	<i>SD/item</i>
Self-Perceived Creativity Capacity	.79	6.01	1.99
Belief in Unconscious Processes	.67	3.22	.45
Use of Techniques	.75	3.07	.49
Use of Other People	.70	3.14	.66
Final Product Orientation	.28	2.88	.48
Environmental Control	.78	2.39	.53
Superstition	.55	1.96	.84
Use of Senses	.72	2.98	.77
Creativity Imagination Scale	.75	28.52	6.87

The results of one-way analyses (see Table 3) on the five scales show that there were significant differences among the means of the five sleep positions on the General Activity Scale ($F [4, 320] = 2.88, p = .023, \eta^2 =$

TABLE 2 Cross-Tabulation of Sex with Sleep Positions

	Full-fetal	Prone	Royal	Semi-fetal	Varied/DNK
Female	37	50	20	107	24
Male	14	27	9	29	14
<i>N</i>	51	77	29	136	38

Note: DNK = Do Not Know

.04). Post-hoc analysis (assuming Bonferroni $p = .01$ for 10 pairwise comparisons for an overall α of .10, given small sizes), using the Fishers Least Significant Difference test revealed none of the pairwise

comparisons to be significant. The analysis of variance also showed a marginally significant effect on Neuroticism-Anxiety ($F[4,320] = 2.28$; $p = .06$, $\eta^2 = .028$). Post-hoc analysis using the Fishers Least Significant Difference (assuming Bonferroni $p = .01$ for 10 pairwise comparisons, for an overall α of .10, given small sizes) test revealed a marginally significant difference between the Full-fetal group ($M = 10.44$, $p = .02$) and the Royal group ($M = 8.00$) and from the Varied or Do Not Know Group ($M = 8.00$, $p = .012$).

A MANOVA on SPCC and the seven creativity styles scales revealed no significant differences on any of the scales (Roy's Largest Root = .04, $F[8, 322] = 1.45$, $p = .175$). Thus no further details are reported.

TABLE 3 Means (SDs) and ANOVA Results for ZKPO Scales

	Full Fetal	Prone	Royal	Semi- fetal	Varied/DNK	<i>F</i> (<i>p</i>)
<i>N</i>	50	74	29	134	38	
SOC	9.20 (4.3)	10.44 (3.6)	10.79 (4.3)	9.74 (3.9)	10.02 (3.8)	1.17 (.32)
IMP	9.34 (4.5)	9.42 (4.0)	9.17 (3.0)	9.63 (4.0)	10.63 (3.5)	.83 (.51)
ACT	7.80 (3.0)	7.61 (3.8)	7.66 (3.8)	6.63 (3.5)	8.55 (3.4)	2.88 (.02)
AGG	8.14 (4.1)	8.28 (3.1)	6.55 (4.1)	7.22 (3.7)	7.56 (3.7)	1.86 (.12)
NEUR	10.44 (4.6)	9.55 (4.4)	8.00 (4.6)	9.17 (4.4)	8.00 (4.4)	2.28 (.06)

Note: SOC= Sociability; IMP= Impulsive-Sensation Seeking; ACT= Activity; AGG= Aggression; NEUR= Neuroticism

A univariate analysis of variance did not reveal any significant differences among the five sleep position groups on the CIS scale ($F [4, 325] < 1.0$). A MANOVA on the two CIS subscales Somato-Sensory Activities and Imagination-Sensory Activities revealed no significant differences (Roy's Largest Root = .015, $F[4, 310] = .118$, $p = .321$). Thus no further details are reported.

DISCUSSION

The results of the study were more supportive of the popularity of the Semi-fetal position than that of the relationship between sleep positions and personality. There was no evidence of sex differences on the choice of sleep positions. Although overall results for two personality factors, General Activity and Neuroticism, were significant, a consideration of post-hoc comparisons and effect sizes suggest a very weak relationship between sleep positions and personality.

The Semi-fetal position was the overwhelming choice by both males and females (41.08%)—a result consistent with those reported in the Domino and Bohn (1980) and Schredl (2002) studies. However, this similarity in results cannot be construed to indicate that the Semi-fetal position is universally the most popular. The sample sizes in both Domino and Bohn (1980) and Schredl (2002) were woefully small and the differences between the Semi-fetal and other positions were not as marked as found in the present study. The prone position was the second highest in Domino and Bohn (1980), but not in Schredl's (2002) study, where the Royal and Prone positions were least chosen. The Full-fetal was second most popular in Schredl (2002) study, but one of the least popular in the Domino and Bohn (1980) study. In our study, it was third most popular, with 15.41% of the participants choosing it.

There were two main expectations concerning differences on the ZKPQ personality scales: (a) the Semi-fetal position would be most associated with higher scores on General Activity and Sociability, and lower scores on Impulsive Sensation Seeking, Aggression-Hostility, and Neuroticism-Anxiety Scales; and (b) the individuals choosing the Royal and Prone positions would be expected to score higher on Neuroticism-Anxiety, but lower on General Activity and Sociability, compared with individuals who choose other positions.

The results did not support either of the two expectations. Although the analysis of variance revealed significant *F* values for General Activity, none of the post-hoc comparisons reached significance. For Neuroticism-Anxiety scores, the differences between the Full-fetal position ($M = 10.44$) and the Royal ($M = 8.0$) and Varied or Do Not Know positions ($M = 8.0$) were marginally significant. Furthermore, the overall effect sizes were small (.04 for General Activity and .03 for Neuroticism, per Cohen's guidelines, see Sheskin, 2007). The results of the present study also yielded no significant findings to indicate that relationships exist between sleep positions, and self-perceived creative capacity, styles (beliefs and approaches to being creative) of creativity, and hypnotizability.

Clearly, more large-scale studies are needed. However, the measurement of sleep positions needs to be standardized—there are so many types used with so many variations of the same types that some consensus is needed as to both the labeling and the descriptions of the various sleep positions. Extant studies have varied in terms of what was asked—position at sleep onset or typical sleep position used, yet another aspect that needs standardization.

One definite lack in the literature on sleep positions is that the investigators have not provided a sound theoretical rationale as to why sleep positions should be associated with personality. It is possible that

sleep positions may have an impact on the quality of sleep, which in turn might have an impact on how one behaves during the daytime, such as being irritable or pleasant. Koninck, Gagnon, and Lallier (1983) found that sleep positions are indeed related to the quality of sleep. They observed “poor sleepers” were more likely to sleep on their backs and head straight for long periods of immobility, a position that is associated with sleep difficulties and respiratory problems. They specifically noted that “poor” sleepers scored higher on the MMPI scales of depression and hysteria and higher on the *Eysenck Personality Inventory*’s neuroticism scale. The “poor” sleepers also reported more awakenings at night, spending more time being awake at night, and more agitation than did “good” sleepers.

Although, the sample size in the present study was large ($n = 332$), it was still limited in terms of the frequencies obtained for different sleep positions, possibly limiting the power of statistical tests to detect significant differences. The relationship of sleep positions to personality does seem to have popular appeal as suggested by enthusiastic media reports, complete with colorful labels and colorful descriptions of sleeping positions and claims of their validity as predictors of personality. Although the results of our study suggest that sleep positions may be reflective of certain personality characteristics, the results were very weak with small effect sizes and generally inconsistent with the results of prior studies, raising questions about the extant media reports.

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