

Sleep Disturbance and Perceived Stress among Young Adults Aged 20-30 Years: A Survey-Based Study

Sayyid Mohammed Mudassir Thangal K A

Department of Psychology PG Studies, Centre for Distance and Online Education, JAIN (Deemed-to-be University), Bengaluru, India

Abstract: Sleep and stress are closely related aspects of wellbeing, and young adulthood is a period in which both are challenged by educational, occupational and social transitions. This study examined levels of sleep disturbance and perceived stress among young adults aged 20–30 years, the relationship between them, and differences by gender, educational qualification and occupation. A descriptive, cross-sectional, correlational survey design was used. Data were collected online from 100 young adults (53 males, 46 females, one not stated) using a socio-demographic sheet and a 25-item Sleep and Stress Questionnaire rated on a five-point frequency scale (Cronbach's $\alpha = .74, .82$ and $.68$ for the sleep, stress and interrelation sections). Respondents reported moderate average sleep disturbance ($M = 27.07$, $SD = 6.36$) and perceived stress ($M = 28.65$, $SD = 6.58$); 60% had at least moderate sleep disturbance and 70% at least moderate stress. Sleep disturbance correlated positively with perceived stress ($r = .38$, $p < .001$) and predicted it, explaining 14.4% of the variance. Females reported significantly higher stress than males ($t(97) = 2.48$, $p = .015$, $d = 0.50$); the gender difference in sleep disturbance was not significant. No significant differences were found by education or occupation. Respondents most strongly agreed that sufficient sleep helps them manage stress. Sleep and stress should be addressed together in counselling, education and workplace wellness programmes.

Keywords: sleep disturbance, perceived stress, young adults, gender differences, survey

1. Introduction

Sleep is a basic biological need: during sleep the body repairs tissue, the brain consolidates memory and regulates emotion, and hormonal and immune systems restore balance. Stress is the response to demands appraised as taxing or exceeding one's resources (Lazarus & Folkman, 1984); moderate stress can motivate, but chronic stress wears down health through prolonged activation of stress-response systems (McEwen, 2007; Schneiderman et al., 2005).

Young adulthood is a stage in which sleep and stress meet in a particularly demanding way. Arnett (2000) described emerging adulthood as a period of identity exploration, instability and self-focus. Completing education, entering the workforce, financial pressure and family expectations all add demands, while late-night phone and media use and irregular schedules make healthy sleep harder to maintain (Hershner & Chervin, 2014; Gradisar et al., 2013). In India, people aged 20–30 form a very large part of the population, which makes their wellbeing a practical public-health concern.

Sleep and stress influence each other. Stress keeps arousal systems active and encourages worry, making sleep harder (Åkerstedt, 2006; Han et al., 2012), while poor sleep weakens emotion regulation so that daily problems feel larger (Goldstein & Walker, 2014; Palmer & Alfano, 2017). This bidirectional relationship (Kahn et al., 2013; Alvaro et al., 2013) may become a self-maintaining cycle. Much of the evidence, however, comes from Western populations or medical and university students; fewer studies examine mixed groups of students, employed and unemployed young adults, or ask how young adults themselves perceive the sleep–stress link. The present study addresses this gap.

2. Objectives

- 1) To assess levels of sleep disturbance and perceived stress;
- 2) To examine their relationship;
- 3) To compare them across gender, educational qualification and occupation;
- 4) To determine how far sleep disturbance predicts perceived stress; and
- 5) To explore respondents' perception of the sleep–stress link.

Hypotheses (tested at $\alpha = .05$). H1: Sleep disturbance and perceived stress are positively related. H2: Males and females differ in sleep disturbance and perceived stress. H3: Educational groups differ in both variables. H4: Occupational groups differ in both variables. H5: Sleep disturbance predicts perceived stress.

3. Method

Design and Participants:

A descriptive, cross-sectional, correlational survey design was used. Participants were recruited by non-probability (convenience and snowball) sampling through personal contacts and messaging platforms. Inclusion criteria were age 20–30 years, informed consent, and ability to respond in English; incomplete or duplicate responses were excluded. The final sample comprised 100 respondents: 53 males, 46 females and 1 who preferred not to state gender; 51 undergraduates, 42 postgraduates and 7 “Other”; and 62 employed, 17 students, 17 unemployed and 4 self-employed.

Measures: A socio-demographic sheet recorded gender, education and occupation (no names or contact details). The 25-item Sleep and Stress Questionnaire is a self-report measure rated Never (1) to Always (5), with three sections: sleep disturbance (items 1–10, range 10–50), perceived stress

(items 11–20, range 10–50) and sleep–stress interrelation (items 21–25, range 5–25). Positively worded items 3, 4 and 10 were reverse-scored (6 minus response). For description, Section A and B totals were classified as low (up to 25), moderate (26–35) or high (above 35); these researcher-set cut-offs are not clinical thresholds. Items were drawn from content domains of the Pittsburgh Sleep Quality Index (Buysse et al., 1989) and the Perceived Stress Scale (Cohen et al., 1983); the questionnaire is not a standardised instrument and was not formally validated. Cronbach's alpha in this sample was .74 (sleep), .82 (stress), .68 (interrelation) and .83 for the combined 20 sleep and stress items.

Procedure and Ethics: The questionnaire was administered as an online form on 20–21 October 2026. The first page explained the purpose, assured anonymity and confidentiality, and requested voluntary consent; participants could withdraw at any time. No missing values were found. Respondents who felt distressed were advised to seek support from a counsellor or health professional.

Analysis: Descriptive statistics, Pearson's correlation (supported by Spearman's), independent-samples t-test, one-way ANOVA with Tukey's post-hoc test, and linear regression were used, with effect sizes (Cohen's d , η^2 , R^2). Shapiro–Wilk tests showed no significant departure from normality (sleep disturbance $W = 0.98$, $p = .29$; stress $W = 0.99$, $p = .51$), justifying parametric tests.

4. Results

Levels: Mean sleep disturbance was 27.07 (SD = 6.36; item average 2.71) and mean perceived stress was 28.65 (SD = 6.58; item average 2.87), both moderate. The mean interrelation score was 15.28 (SD = 3.83; item average 3.06).

Table 1: Levels of sleep disturbance and perceived stress ($N = 100$)

Level (total score)	Sleep disturbance f (%)	Perceived stress f (%)
Low (up to 25)	40 (40%)	30 (30%)
Moderate (26–35)	53 (53%)	58 (58%)
High (above 35)	7 (7%)	12 (12%)

Item-level findings. The most frequent sleep problems were maintaining a regular schedule (item 5, $M = 2.94$; 30% often/always) and disturbance by noise, light or other factors (item 8; 31% often/always); difficulty falling asleep was least frequent (item 1, $M = 2.49$). Among stress items, anxiety when unexpected problems arise (item 19, $M = 3.19$), feeling there are too many things to manage (item 16, $M = 3.12$) and worry about the future (item 15, $M = 3.03$) were highest. The highest mean on the whole questionnaire was for item 25, “getting sufficient sleep helps me manage stress more

effectively” ($M = 3.67$; 55% often/always), followed by item 24, “poor sleep makes it harder for me to cope” ($M = 3.20$).

H1: Relationship: Sleep disturbance and perceived stress were significantly positively correlated ($r = .38$, $p < .001$; 95% CI [.20, .54]; Spearman $\rho = .35$), a moderate association sharing about 14% of variance. Both correlated with the interrelation score ($r = .46$ and $.57$ respectively, $p < .001$). H1 was supported.

H2: Gender: Females scored higher on all three measures (Table 2). The difference was significant for perceived stress ($d = 0.50$) and interrelation ($d = 0.48$) but not for sleep disturbance ($d = 0.32$). H2 was partly supported. Exploratory item-level comparisons showed females higher on anxiety when problems arise (item 19, $p = .002$), difficulty staying calm (item 20, $p = .005$) and stress affecting sleep quality (item 22, $p = .007$); only item 19 approached a Bonferroni-corrected threshold.

Table 2: Comparison of males ($n = 53$) and females ($n = 46$)

Variable	Male M (SD)	Female M (SD)	t (df = 97)	p	d
Sleep disturbance	26.13 (6.37)	28.17 (6.31)	1.6	0.113	0.32
Perceived stress	27.23 (6.30)	30.43 (6.53)	2.48	.015*	0.5
Sleep–stress interrelation	14.47 (3.29)	16.28 (4.21)	2.4	.018*	0.48

Note. * $p < .05$.

H3: Education: No significant differences emerged in sleep disturbance ($F(2, 97) = 0.65$, $p = .525$, $\eta^2 = .01$) or perceived stress ($F(2, 97) = 0.24$, $p = .789$, $\eta^2 = .005$). The interrelation score differed ($F(2, 97) = 3.18$, $p = .046$, $\eta^2 = .06$), with the “Other” group ($n = 7$, $M = 18.71$) scoring higher than undergraduates ($M = 15.10$) and postgraduates ($M = 14.93$); this should be treated with caution given the group size. H3 was not supported for the two main variables.

H4: Occupation: No significant differences were found in sleep disturbance ($F(3, 96) = 0.52$, $p = .671$), perceived stress ($F(3, 96) = 0.67$, $p = .574$) or interrelation ($F(3, 96) = 0.41$, $p = .747$); effect sizes were negligible ($\eta^2 = .01$ –.02). H4 was not supported.

H5: Prediction: Sleep disturbance significantly predicted perceived stress ($B = 0.39$, $SE = 0.10$, $\beta = .38$, $t = 4.07$, $p < .001$; $F(1, 98) = 16.53$, $R^2 = .144$). Each additional point of sleep disturbance was associated with about 0.39 points more stress. Adding gender ($n = 99$) raised R^2 to .179; sleep disturbance remained significant ($\beta = .35$, $p < .001$) and female gender was a smaller significant predictor ($\beta = .19$, $p = .047$). H5 was supported.

Table 3: Regression of perceived stress on sleep disturbance

Model	Predictor	B	SE	β	p	R^2
1 ($N = 100$)	Sleep disturbance	0.39	0.1	0.38	<.001	0.144
2 ($N = 99$)	Sleep disturbance	0.36	0.1	0.35	<.001	
	Gender (female = 1)	2.47	1.23	0.19	0.047	0.179

Supplementary analyses: The sleep–stress correlation was $r = .26$ ($p = .056$) in males and $r = .46$ ($p = .001$) in females, a difference that was not significant ($z = 1.09$, $p = .274$). Item-

total analysis supported the sleep and stress sections (corrected item-total $r = .24$ –.62), but item 25 was almost unrelated to the other interrelation items ($r = .04$); alpha for

that section would rise from .68 to .78 without it, so the interrelation total should be interpreted cautiously.

5. Discussion

Respondents reported moderate average sleep disturbance and stress, with a substantial minority in the high range (7% and 12%). An irregular sleep schedule and environmental disturbance were more common than difficulty falling asleep, in line with evidence that irregular schedules and external factors drive poor sleep in young people (Lund et al., 2010; Hershner & Chervin, 2014; Gradisar et al., 2013). Anticipatory worry and overload were the commonest stress experiences, fitting descriptions of this life stage as one of uncertainty and multiple simultaneous demands (Arnett, 2000; Pascoe et al., 2020).

The positive association between sleep disturbance and stress agrees with a large literature (Åkerstedt, 2006; Han et al., 2012; Almojali et al., 2017). Sleep disturbance explained about 14% of the variance in stress, a meaningful but modest share consistent with stress having many other sources. Because the design is correlational, direction cannot be established; bidirectional models (Kahn et al., 2013; Alvaro et al., 2013; Palmer & Alfano, 2017) suggest both directions operate. Respondents' own answers point the same way: they endorsed the benefit of sleep for coping (items 24–25) more than the effect of worry on their sleep (items 21–23), paralleling experimental evidence that sleep loss increases emotional reactivity (Goldstein & Walker, 2014).

Higher stress among women replicates national survey evidence (Cohen & Janicki-Deverts, 2012) and findings of greater chronic and daily stress among women (Matud, 2004). Proposed explanations include social roles, coping styles and willingness to report distress; the present data cannot decide among them. The higher, but non-significant, sleep disturbance among women is in the direction reported by Zhang and Wing (2006) and may reflect limited power. The absence of education and occupation differences suggests these problems are spread across young adults whether studying, working or seeking work, although the small student and self-employed groups limit this conclusion.

6. Limitations

The sample was small, non-probability and self-selected, limiting generalisation. Measures were self-reported using a non-standardised, unvalidated questionnaire whose interrelation section had modest reliability. The cross-sectional design precludes causal inference; some subgroups (self-employed $n = 4$; "Other" education $n = 7$; gender not stated $n = 1$) were too small for dependable comparison; confounders such as sleep duration, caffeine, screen use and mental health were not measured; and several tests were run without correction for multiple comparisons, so results near .05 ($p = .015, .018, .046$) are indicative only.

7. Implications

Counsellors and health professionals should assess sleep when assessing stress and vice versa; colleges and workplaces can include sleep hygiene and regular schedules in stress-

management programmes; and stress-support initiatives should attend to the pressures faced by young women. Future research should use larger probability samples, validated instruments (e.g., PSQI, Perceived Stress Scale), longitudinal or interventional designs, objective sleep measures and additional mediators such as screen time, coping style and anxiety.

8. Conclusion

Young adults aged 20–30 in this sample reported moderate levels of sleep disturbance and stress. Sleep disturbance was significantly associated with and predictive of perceived stress, females reported higher stress than males, and no differences were found by education or occupation. Respondents recognised that adequate sleep helps them manage stress, which offers a receptive starting point for interventions that address sleep and stress together.

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