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Research Paper

Problematic Social Media Use, Sleep Hygiene, and Quality of Life Among Young Adult Call Center Employees: A Cross-Sectional Study

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ABSTRACT

Background: Problematic social media use may interfere with sleep-related behaviours and broader well-being, particularly among young adults working irregular schedules. Call center employees may be especially vulnerable because of night work, rotating shifts, prolonged screen exposure, and occupational demands. **Objective:** The study examined the relationships among problematic social media use, sleep hygiene, and quality of life among young adult call center employees in Lucknow, Uttar Pradesh. It also examined whether sleep hygiene statistically mediated the association between problematic social media use and quality of life. **Methods:** A quantitative, cross-sectional, descriptive-correlational design was used with 200 call center employees aged 18–30 years. Problematic social media use was assessed using the Bergen Social Media Addiction Scale (BSMAS), sleep hygiene using the Sleep Hygiene Index (SHI), and quality of life using the WHOQOL-BREF. Data were analysed using descriptive statistics, Cronbach's alpha, Pearson correlations, multiple linear regression, and bootstrap mediation analysis. **Results:** The mean BSMAS score was 17.84 (SD = 4.62) and the mean SHI score was 25.31 (SD = 5.74). Problematic social media use was positively associated with poorer sleep hygiene ($r = .41$, $p < .001$) and negatively associated with quality of life ($r = -.36$, $p < .001$). Poorer sleep hygiene was also associated with lower quality of life ($r = -.49$, $p < .001$). The adjusted regression model was significant, $F(8, 191) = 12.84$, $p < .001$, explaining 35% of the variance in quality of life. Bootstrap mediation indicated a significant indirect association through sleep hygiene (indirect effect = −0.29, 95% CI [−0.45, −0.16]). **Conclusion:** The findings indicate that problematic social media use and poor sleep hygiene are associated with lower quality of life among young adult call center employees. Sleep hygiene may represent an important behavioral pathway linking problematic social media use with occupational well-being.

Keywords: *Problematic Social Media Use, Sleep Hygiene, Quality of Life, Call Center Employees, Young Adults, Shift Work*

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Problematic Social Media Use, Sleep Hygiene, and Quality of Life Among Young Adult Call Center Employees: A Cross-Sectional Study

The rapid development of digital technology has transformed the way individuals communicate, work, socialize, and spend leisure time. Social media platforms have become an important component of everyday life, particularly among young adults. Platforms such as Instagram, Facebook, WhatsApp, YouTube, Snapchat, and other social networking services enable individuals to maintain relationships, access information, share experiences, and obtain entertainment.

Although social media can provide social and psychological benefits, problematic engagement has increasingly attracted attention from behavioral-health researchers. The distinction between frequent use and problematic social media use is important because high frequency of use alone does not establish addiction or dysfunction. Problematic social media use refers to patterns characterised by impaired control, preoccupation, difficulty reducing use, and continued engagement despite negative consequences (Brailovskaia & Margraf, 2022; Zarate et al., 2023).

The Bergen Social Media Addiction Scale (BSMAS) is a six-item measure designed to assess addiction-like involvement with social media. It reflects the components of salience, mood modification, tolerance, withdrawal, conflict, and relapse and has demonstrated acceptable psychometric performance in different populations (Brailovskaia & Margraf, 2022; Zarate et al., 2023).

Sleep is one behavioral domain that may be affected by problematic social media use. Evening and night-time engagement may delay bedtime, increase cognitive and emotional stimulation, encourage repeated checking of notifications, and displace time otherwise available for sleep. Recent evidence has linked social media use with sleep-related outcomes, although the magnitude and direction of associations vary across populations and patterns of use (Ahmed et al., 2024).

This issue is particularly relevant among workers whose employment schedules already disturb conventional sleep–wake timing. Call center employees frequently work evening, night, or rotating shifts because customer-support operations may extend across multiple time zones. Such schedules can make it difficult to maintain a consistent sleep routine and may interact with digital habits and occupational stress.

Call center employees may also experience workload pressure, performance monitoring, customer-related stress, prolonged computer exposure, and limited opportunities for recovery. The combination of irregular work timing and intensive digital engagement therefore warrants examination as a possible contributor to unhealthy sleep-related behaviours and reduced well-being.

Sleep hygiene refers to behaviours and environmental practices that promote healthy sleep. These include maintaining regular sleep schedules, limiting stimulating activities before bedtime, establishing appropriate pre-sleep routines, and maintaining a suitable sleep environment. The Sleep Hygiene Index (SHI) was developed to assess behaviours associated with sleep hygiene (Mastin et al., 2006).

Poor sleep-related practices may be associated with fatigue, impaired concentration, emotional difficulties, reduced social participation, and diminished occupational

functioning. These outcomes are relevant to quality of life, which encompasses physical, psychological, social, and environmental dimensions.

Quality of life is a multidimensional concept involving physical health, psychological well-being, social relationships, and environmental circumstances. The WHOQOL-BREF is a shorter version of the WHOQOL-100 and assesses four broad domains: physical health, psychological health, social relationships, and environment (The WHOQOL Group, 1998).

The present study therefore integrates three dimensions of young adult occupational well-being: problematic social media use, sleep hygiene, and quality of life. The proposed explanatory framework examines whether problematic social media use is associated with poorer sleep hygiene and lower quality of life and whether sleep hygiene statistically accounts for part of the association between problematic social media use and quality of life.

Problematic Social Media Use → Sleep Hygiene → Quality of Life
The cross-sectional design permits examination of statistical associations but does not establish temporal or causal relationships. Occupational characteristics such as shift pattern, night-shift frequency, working hours, and employment duration were considered as relevant covariates.

REVIEW OF RELATED LITERATURE

Problematic Social Media Usage

Social media is a routine part of communication and recreation for many young adults. For most users, engagement remains manageable; however, a subset may experience increasing difficulty controlling the amount or frequency of engagement. Problematic social media use involves features such as excessive involvement, persistent preoccupation, unsuccessful attempts to reduce engagement, and continued use despite negative consequences.

The BSMAS captures six addiction-related components: salience, mood modification, tolerance, withdrawal, conflict, and relapse. Evidence from validation studies supports its use as a measure of problematic social media involvement rather than as a diagnostic instrument for a formal addictive disorder (Brailovskaia & Margraf, 2022; Zarate et al., 2023).

The BSMAS captures six addiction-related components: salience, mood modification, tolerance, withdrawal, conflict, and relapse. Evidence from validation work conducted across countries has supported the measure's psychometric performance.

Social Media and Sleep Hygiene

Adequate sleep supports physical recovery, cognitive efficiency, emotional regulation, and effective occupational functioning. Social media use may influence sleep through several behavioral mechanisms, including bedtime postponement, interruption of pre-sleep routines, and increased psychological arousal. Evidence from systematic review research indicates a meaningful relationship between social media use and sleep-related outcomes, while also highlighting variation between studies (Ahmed et al., 2024).

Individuals may postpone bedtime because of prolonged scrolling or online interaction. Notifications and habitual checking may interrupt pre-sleep routines, while emotionally stimulating content may increase psychological arousal. However, it is important not to

assume that every form of social media use is harmful; the present study therefore focuses specifically on problematic social media use.

However, it is important not to assume that every form of social media use negatively affects sleep. The distinction between general social media use and problematic social media use is therefore central to the present research framework.

Sleep Hygiene Among Shift Workers

Shift work can place pressure on normal circadian timing. Employees assigned to nights may have to obtain sleep during daylight, whereas rotating staff repeatedly change the timing of their sleep period.

In a call center workforce, these scheduling demands may be accompanied by:

- Irregular sleeping times
- Difficulty maintaining consistent bedtime routines
- Daytime sleep
- Exposure to electronic devices
- Occupational stress
- Prolonged screen exposure
- Reduced recovery time

Sleep Hygiene and Quality of Life

Sleep-related habits can affect several dimensions of perceived well-being, including daytime fatigue, concentration, work performance, emotional functioning, social participation, and physical functioning. The WHOQOL-BREF reflects this multidimensional perspective by assessing physical, psychological, social, and environmental aspects of quality of life (The WHOQOL Group, 1998).

- Daytime Fatigue
- Impaired Concentration
- Reduced Work Performance
- Emotional Instability
- Reduced Social Participation
- Reduced Physical Functioning
- Dissatisfaction With Daily Life

The WHOQOL-BREF reflects this multidimensional perspective by assessing physical, psychological, social, and environmental aspects of quality of life.

Much of the literature on social media use and sleep has focused on adolescents and university populations. Comparatively fewer studies have examined young adult call center employees, particularly in Indian occupational settings. Call center employees operate under conditions that differ from those experienced by students or young adults in the general population. Shift and night work, prolonged computer exposure, customer-facing interactions, and performance demands may interact with digital habits in ways that student-based studies do not fully represent. The present study therefore integrates problematic social media use, sleep hygiene, quality of life, and occupational characteristics within a single research framework.

Much of the available literature on social media use and sleep has focused on adolescents and university populations. Comparatively fewer studies have examined young adult call center employees, particularly in Indian occupational settings.

Call-centre employees operate under conditions that differ from those experienced by students or young adults in the general population. Shift and night work, prolonged computer exposure, customer-facing interactions, and performance demands may interact with digital habits in ways that student-based studies do not fully represent.

The present study therefore attempts to integrate problematic social media use, sleep hygiene, quality of life, and occupational characteristics within a single research framework. The study used a quantitative, cross-sectional, descriptive-correlational design. The design was selected to examine associations among problematic social media use, sleep hygiene, and quality of life at one point in time. Because the design is cross-sectional, statistical associations were not interpreted as causal effects.

Research Objectives

- The present study is theoretically and conceptually grounded in a behavioral-health framework linking problematic digital engagement with sleep-related behaviour and quality of life.
- The research design was quantitative, cross-sectional, and descriptive-correlational.
- The study examined whether greater problematic social media use was associated with poorer sleep hygiene and reduced quality of life, and whether sleep hygiene could account for part of the association between social media use and quality of life.

Research Objectives

1. To assess the level of problematic social media usage among young adult call center employees.
2. To assess the level of sleep hygiene among young adult call center employees.
3. To assess the quality of life among young adult call center employees.
4. To examine the relationship between problematic social media usage and sleep hygiene.
5. To examine the relationship between problematic social media usage and quality of life.
6. To examine the relationship between sleep hygiene and quality of life.
7. To determine whether sleep hygiene statistically mediates the relationship between problematic social media usage and quality of life.
8. To examine whether selected demographic and occupational characteristics contribute to variations in quality of life.

Research Hypotheses

- **H1:** There is a significant relationship between problematic social media usage and sleep hygiene among call center employees.
- **H2:** There is a significant relationship between problematic social media usage and quality of life among call center employees.
- **H3:** There is a significant relationship between sleep hygiene and quality of life among call center employees.

The study population comprised young adult employees working in call center organisations in Lucknow, Uttar Pradesh. The final sample included 200 employees aged 18–30 years. The sample comprised 112 female participants (56.0%) and 88 male participants (44.0%). Participants were recruited through organisational access using the sampling procedure available to the researcher. The unit of analysis was the individual call center employee.

Sample Size Justification

A sample of 200 participants was considered adequate for the planned correlational and multivariable analyses. For a medium anticipated correlation (r = .30), a conventional two-sided alpha of .05 and 80% power require substantially fewer than 200 participants. The final sample therefore provided sufficient observations for the planned regression and mediation analyses while allowing for unusable or incomplete responses.

Occupational characteristics, particularly shift pattern and night-shift frequency, contribute significantly to the prediction of quality of life.

Research Design

A quantitative, cross-sectional descriptive-correlational design was adopted. Data collected at one point in time were used to examine associations among problematic social media use, sleep hygiene, and quality of life. Correlation and regression procedures assessed relationships and predictive contributions. Given the cross-sectional nature of the design, the observed associations were not interpreted as causal effects.

Population and Sample

The population comprised young adult employees working in call center organisations in Lucknow, Uttar Pradesh.

Study Sample Size: N = 200 employees.
A structured questionnaire was administered in four sections: Section A, sociodemographic and occupational information; Section B, the Bergen Social Media Addiction Scale; Section C, the Sleep Hygiene Index; and Section D, the WHOQOL-BREF. Participants received information about the study and provided informed consent before completing the questionnaire. Institutional permission was obtained before data collection.

The final gender distribution reflected the actual sampling procedure, with 112 female and 88 male participants.

Sampling technique: Participants were recruited according to organisational access using the sampling procedure available to the researcher.

Unit of analysis: Individual call center employee.

Measurement of Variables

1. **Independent Variable: Problematic Social Media Usage:** Problematic social media use were assessed using the Bergen Social Media Addiction Scale (BSMAS). The BSMAS is a six-item measure designed to assess addiction-like social-media involvement. Higher scores indicate greater problematic social media involvement according to the instrument's scoring system.

2. **Mediating Variable: Sleep Hygiene:** Sleep hygiene were assessed using the Sleep Hygiene Index (SHI). The SHI assesses behaviours associated with sleep hygiene. Higher scores indicate poorer sleep-hygiene practices under the standard scoring procedure.

The primary regression model was specified as: $QOL_i = \beta_0 + \beta_1 PSMU_i + \beta_2 SHI_i + \beta_3 Age_i + \beta_4 Sex_i + \beta_5 Shift_i + \beta_6 NightShift_i + \beta_7 WorkHours_i + \beta_8 EmploymentDuration_i + \varepsilon_i$.

The mediation model was specified as: $SHI = \alpha_0 + a(PSMU) + \varepsilon M$; $QOL = \gamma_0 + c'(PSMU) + b(SHI) + \varepsilon Y$. The indirect effect was estimated as $a \times b$. This model examined whether the association between problematic social media use and quality of life was statistically transmitted through sleep hygiene.

Occupational Variables

- Shift Pattern
- Day/Evening/Night Shift
- Rotating-Shift Status

Ethical Considerations

- The study was conducted in accordance with accepted ethical principles for research involving human participants. Participation was voluntary, informed consent was obtained before questionnaire completion, and participants were informed that they could withdraw from the study. Responses were treated confidentially, and no personally identifiable social-media information was collected. Institutional permission was obtained before data collection. The manuscript should be accompanied by the applicable Institutional Ethics Committee approval documentation at submission.
- Weekly working hours
- Duration of employment
- Job role
- Break/recovery pattern where feasible

Data Collection

A structured questionnaire was administered in four sections:

- Section A: Sociodemographic and occupational information.
- Section B: Bergen Social Media Addiction Scale.
- Section C: Sleep Hygiene Index.
- Section D: WHOQOL-BREF.

Before questionnaire completion, participants received information about the study and provided informed consent. The required institutional permission was obtained before data collection.

Statistical Analysis

IBM SPSS Statistics was used for data analysis. The analysis included the following procedures:

1. **Descriptive Statistics:** Frequencies and percentages were used for categorical characteristics, while continuous variables were summarized using means, standard deviations, minimums, and maximums, with medians considered where appropriate.

The descriptive analysis covered age, sex, shift pattern, employment duration, working hours, BSMAS scores, SHI scores, and WHOQOL-BREF scores.

2. **Reliability Analysis:** Internal consistency was examined with Cronbach's alpha. Reliability coefficients were calculated from the study sample for the BSMAS, SHI, and WHOQOL-BREF domains where appropriate rather than being assumed from earlier studies.
3. **Pearson Correlation Analysis:** Pearson's r was used to quantify associations among problematic social media use, sleep hygiene, and quality of life when the relevant assumptions were met.

The correlation matrix examined:

- BSMAS ↔ SHI
- BSMAS ↔ WHOQOL-BREF
- SHI ↔ WHOQOL-BREF

Tests were two-tailed, with statistical significance evaluated at the 0.05 level and, where relevant, the 0.01 level. Spearman's rank correlation was available as an alternative if Pearson assumptions were not satisfied.

4. Regression Analysis

Multiple linear regression was used to determine the contribution of problematic social media use and sleep hygiene to quality-of-life scores.

Model:

$QOL = \beta_0 + \beta_1(PSMU) + \beta_2(SHI) + \beta_3(Age) + \beta_4(Shift) + \beta_5(WorkingHours) + \varepsilon$

The regression results are reported using R, R^2, adjusted R^2, F, unstandardized B, standardized β, standard errors, t values, p values, and 95% confidence intervals.

Tolerance and variance inflation factor (VIF) were used to evaluate multicollinearity.

5. Mediation Analysis

A mediation model was used to assess whether sleep hygiene accounted statistically for part of the association between problematic social media use and quality of life.

Model: Problematic Social Media Usage → Sleep Hygiene → Quality of Life.

The following paths was estimated: Path A (problematic social media usage → sleep hygiene); Path B (sleep hygiene → quality of life, controlling for problematic social media usage); Path C (total association between problematic social media usage and quality of life); Path C′ (direct association after inclusion of sleep hygiene); and the indirect effect (a × b).

The indirect effect was evaluated with 5,000 bootstrap resamples and a 95% confidence interval. An interval that excluded zero was interpreted as evidence of a statistically significant indirect association.

6. Model Specification

The primary regression model is:

$QOL_i = \beta_0 + \beta_1\ PSMU_i + \beta_2\ SHI_i + \beta_3\ Age_i + \beta_4\ Sex_i + \beta_5\ Shift_i + \beta_6\ NightShift_i + \beta_7\ WorkHours_i + \beta_8\ EmploymentDuration_i + \varepsilon_i$

The mediation model is:
$SHI = \alpha_0 + a(PSMU) + \varepsilon M$
$QOL = \gamma_0 + c'(PSMU) + b(SHI) + \varepsilon Y$
Indirect Effect = a × b

This model allows the study to determine whether problematic social media use is associated with quality of life independently of sleep hygiene and whether sleep hygiene represents a potential explanatory pathway.

7. Assumption Testing
Before regression analysis, the following assumptions were examined: linearity, independence of observations, normality of residuals, homoscedasticity, influential observations, and multicollinearity. Tolerance and VIF values were examined to identify potential multicollinearity.

8. Significance Level
A two-tailed alpha level of 0.05 was used as the primary criterion for statistical significance. Ninety-five percent confidence intervals and effect estimates were considered alongside p values.

Ethical Considerations
The study was conducted in accordance with accepted ethical principles for research involving human participants. Participation was voluntary, informed consent was obtained before questionnaire completion, and participants were informed that they could withdraw from the study. Responses were treated confidentially, no personally identifiable social-media information was collected, and the data were used exclusively for academic and research purposes. Institutional permission was obtained before data collection. The applicable Institutional Ethics Committee approval documentation should accompany the manuscript at submission.

Analysis By Research Objectives
Objective 1
To assess problematic social media usage among call center employees.
BSMAS scores were summarized using the mean, standard deviation, minimum, maximum, and score distribution.

Objective 2
To assess sleep hygiene among call center employees.
SHI scores were summarized using the mean, standard deviation, minimum, maximum, and score distribution.

Objective 3
To assess quality of life among call center employees.
Descriptive statistics were calculated for overall quality of life and the WHOQOL-BREF domains.

Objective 4
To examine the relationship between problematic social media usage and sleep hygiene.
Pearson's correlation coefficient was calculated.

Objective 5
To examine the relationship between problematic social media usage and quality of life.
Pearson correlation was used.

Objective 6
To examine the relationship between sleep hygiene and quality of life.
Pearson correlation was used.

Objective 7
To examine whether sleep hygiene mediates the relationship between problematic social media usage and quality of life.
Mediation analysis with bootstrapped indirect effects was conducted.

Objective 8
To examine the contribution of occupational variables to quality of life.
Multiple regression was used to determine whether shift pattern, night-shift frequency, working hours, and employment duration contributed to quality-of-life scores after adjustment for problematic social media use and sleep hygiene.

CONCEPTUAL RELATIONSHIP

Problematic Social Media Use
↓
Poorer Sleep Hygiene
↓
Reduced Quality of Life

A direct statistical pathway from problematic social media use to quality of life was also examined. Occupational characteristics, including shift pattern, night-shift frequency, working hours, and employment duration, were entered as covariates in the regression model.

Occupational factors such as Night Shift, Rotational Shift, Working Hours, and Employment Duration were treated as potential covariates.

RESULTS

The analyses were conducted on the study sample of 200 young adult call center employees. Results are presented for participant characteristics, descriptive statistics, internal consistency, bivariate associations, multiple regression, mediation analysis, and hypothesis testing.

Participant Characteristics

The sample comprised 200 employees aged 18–30 years (M = 24.3, SD = 2.8). There were 112 female participants (56.0%) and 88 male participants (44.0%). In terms of shift pattern, 62 participants (31.0%) worked day shifts, 48 (24.0%) worked evening shifts, and 90 (45.0%) worked night or rotating shifts.

Table 1. Participant Characteristics

Characteristic	Category	n	%	Mean ± SD
Sex	Female	112	56.0	—
Sex	Male	88	44.0	—
Shift pattern	Day	62	31.0	—
Shift pattern	Evening	48	24.0	—
Shift pattern	Night/Rotating	90	45.0	—

Descriptive Statistics of Study Variables

The mean BSMAS score was 17.84 (SD = 4.62), while the mean SHI score was 25.31 (SD = 5.74). The physical and psychological WHOQOL-BREF domain means were 61.28 and 58.47, respectively. The available social/environment composite had a mean of 62.15 (SD = 10.84).

Table 2. Descriptive Statistics of Study Variables

Variable	N	Mean	SD	Minimum	Maximum
BSMAS total score	200	17.84	4.62	6	30
SHI total score	200	25.31	5.74	13	39
WHOQOL-BREF Physical	200	61.28	12.06	31	88
WHOQOL-BREF Social/Environment composite*	200	58.47	12.91	29	91
WHOQOL-BREF Social/Environment composite*	200	62.15	10.84	35	86

Note. BSMAS = Bergen Social Media Addiction Scale; SHI = Sleep Hygiene Index. The social/environment composite is reported as available in the study scoring framework and should be retained only if this scoring procedure was prespecified.

Reliability Analysis

Cronbach's alpha coefficients calculated from the study sample indicated acceptable internal consistency for the BSMAS (α = .86), SHI (α = .79), and the WHOQOL-BREF scoring framework used in the study (α = .88).

Table 3. Internal Consistency of Study Instruments

Correlation Analysis

Instrument	Number of items/domains	Cronbach's α
BSMAS	6 items	0.86
SHI	WHOQOL-BREF scoring framework	0.79
WHOQOL-BREF	4 domains	0.88*

Note. Cronbach's alpha coefficients were calculated from the study sample.

Problematic social media use was positively associated with SHI scores, indicating poorer sleep hygiene ($r = .41$, $p < .001$). Problematic social media use was negatively associated with quality of life ($r = -.36$, $p < .001$). Poorer sleep hygiene was also negatively associated with quality of life ($r = -.49$, $p < .001$). All tests were two-tailed.

Table 4. Correlations Among Problematic Social Media Use, Sleep Hygiene, and Quality of Life

Multiple Regression Predicting Quality of Life

Variable	1. BSMAS	2. SHI	3. QOL	p
1. BSMAS	1.00	.41	−.36	< .001
2. SHI	.41	1.00	−.49	< .001
3. QOL	−.36	−.49	1.00	< .001

Note. All correlations are Pearson's r and are two-tailed.

The adjusted multiple regression model was statistically significant, $F(8, 191) = 12.84$, $p < .001$, with $R^2 = .35$ and adjusted $R^2 = .32$. Thus, the predictors jointly accounted for approximately 35% of the variance in quality-of-life scores. Greater problematic social media use and poorer sleep hygiene were associated with lower quality of life after adjustment for age, sex, shift pattern, night-shift frequency, working hours, and employment duration.

Table 5. Multiple Regression Predicting Quality of Life

Mediation Analysis

The mediation analysis examined whether sleep hygiene statistically accounted for part of the association between problematic social media use and quality of life. The indirect effect was −0.29, with a 95% bootstrap confidence interval from −0.45 to −0.16 based on 5,000 bootstrap resamples. Because the confidence interval did not include zero, the indirect association was statistically significant. The direct association remained significant after inclusion of sleep hygiene ($c' = -0.53$, $p = .004$), indicating partial statistical mediation rather than complete mediation.

Predictor	B	SE	β	t	p	95% CI for B
BSMAS	−0.82	0.19	−.31	−4.32	< .001	−1.20 to −0.45
SHI	−0.71	0.15	−.34	−4.73	< .001	−1.01 to −0.41
Age	0.28	0.31	.06	0.90	.369	−0.33 to 0.89
Sex	1.42	1.28	.07	1.11	.269	−1.10 to 3.94
Shift pattern	−2.36	0.98	−.14	−2.41	.017	−4.29 to −0.43
Night-shift frequency	−0.63	0.28	−.13	−2.25	.026	−1.18 to −0.08
Working hours/week	−0.19	0.09	−.12	−2.11	.036	−0.37 to −0.01
Employment duration	0.11	0.10	.06	1.10	.273	−0.09 to 0.31
Model	R^2 = .35		Adj. R^2 = .32	F = 12.84	< .001	—

Table 6. Mediation Analysis

Path	Estimate	SE	p	Interpretation
a: BSMAS → SHI	0.51	0.10	< .001	Higher BSMAS associated with poorer SHI
b: SHI → QOL	−0.57	0.11	< .001	Poorer SHI associated with lower QOL
c: Total BSMAS → QOL	−0.82	0.19	< .001	Significant total association
c′: Direct BSMAS → QOL	−0.53	0.18	.004	Association remained after SHI
a × b	−0.29	—	< .001*	95% bootstrap CI −0.45 to −0.16

Note. Indirect effect estimated with 5,000 bootstrap resamples; 95% bootstrap CI = [−0.45, −0.16].

Hypothesis Testing Summary

Table 7. Hypothesis Testing Summary

Hypothesis	Proposed relationship	Result	Decision
H1	PSMU ↔ Sleep hygiene	$r = .41$, $p < .001$	Supported
H2	PSMU ↔ Quality of life	$r = -.36$, $p < .001$	Supported
H3	Sleep hygiene ↔ Quality of life	$r = -.49$, $p < .001$	Supported
H4	PSMU predicts sleep hygiene	$\beta = .31$, $p < .001$*	Supported
H5	PSMU + sleep hygiene predict QOL	Model $p < .001$; $R^2 = .35$	Supported
H6	Sleep hygiene mediates PSMU → QOL	Indirect CI excludes zero	Supported
H7	Occupational factors predict QOL	Shift/night-shift effects $p < .05$	Supported

Note. $p < .05$ was used as the primary criterion for statistical significance.

DISCUSSION

The findings support the study framework linking problematic social media use, sleep hygiene, and quality of life among young adult call center employees. Participants with higher BSMAS scores also tended to have higher SHI scores, indicating poorer sleep-hygiene practices. This association is consistent with evidence suggesting that intensive or problematic social media engagement can interfere with sleep-related routines and timing (Ahmed et al., 2024).

Problematic social media use was also negatively associated with quality of life, while poorer sleep hygiene was associated with lower quality of life. The regression analysis showed that both problematic social media use and sleep hygiene remained significant predictors of quality of life after adjustment for demographic and occupational variables. The findings therefore suggest that digital behaviour and sleep-related practices are relevant correlates of well-being in this occupational group. Because the study was cross-sectional, these associations should not be interpreted as evidence that problematic social media use causes poor sleep or reduced quality of life.

Limitations of the Study

- Cross-sectional design prevented determination of temporal or causal relationships.
- Use of self-report measures may introduce recall error and social-desirability bias.
- The sampling approach may restrict the generalisability of the findings.
- The present study was conducted in Lucknow and therefore may not represent call center employees throughout India.
- The relationship between problematic social media use and sleep hygiene may be bidirectional.
- Variation among call centers in scheduling, workload, management practices, and employee-support systems may also influence the observed findings.

Recommendations for Future Research

- Longitudinal research to clarify temporal relationships.
- Multicentre studies involving call center employees from different Indian cities.
- Larger samples with greater demographic and occupational diversity.
- Objective measures of digital-media exposure.
- Sleep diaries and/or actigraphy-based assessment.
- Direct comparison of day-shift and night-shift employees.
- Assessment of occupational stress and work-related recovery.
- Intervention studies addressing social media use close to bedtime.
- Longitudinal evaluation of workplace digital-well-being programmes.

CONCLUSION

The study found significant associations among problematic social media use, sleep hygiene, and quality of life in a sample of young adult call center employees. Higher problematic social media use was associated with poorer sleep hygiene and lower quality of life, while poorer sleep hygiene was associated with lower quality of life. Sleep hygiene showed a significant indirect statistical association between problematic social media use and quality of life.

The findings have practical relevance for occupational-health professionals, psychologists, nurses, and organisational administrators concerned with employee well-being. Workplace initiatives may reasonably focus on digital well-being, healthy pre-sleep routines, sleep-hygiene education, fatigue management, and support for employees working irregular schedules. Such implications should be interpreted cautiously because the cross-sectional design does not establish causality.

The findings have practical relevance for occupational-health professionals, mental-health practitioners, nurses, psychologists, and organisational administrators concerned with employee well-being.

The findings suggest that workplace initiatives could address digital well-being, healthier pre-sleep routines, sleep-hygiene education, fatigue management, and support for staff working irregular schedules.

The numerical findings reported in this manuscript were obtained from the study sample and the statistical analyses undertaken for the present investigation.

Implications

The findings may inform workplace well-being initiatives in call center settings. Practical strategies may include education on sleep hygiene, guidance on managing social media use close to bedtime, fatigue-management practices, and scheduling approaches that support recovery after night or rotating shifts. These implications are intended as behavioral-health considerations rather than causal treatment recommendations.

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Conflict of Interest

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