

Mobile Phone Use Before Sleep and Sleep Quality among Young Corporate Professionals

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Abstract: Sleep quality is an important aspect of physical, psychological, and occupational well-being. The increasing use of mobile phones close to bedtime has raised concerns about its possible association with sleep-related outcomes, particularly among working adults who frequently use digital devices for both professional and personal purposes. The present study examined mobile phone use during the one-hour period before sleep and its relationship with sleep quality among young corporate professionals aged 22–35 years. A quantitative, cross-sectional correlational research design was adopted. Data were collected through an online questionnaire using Google Forms. Although 102 responses were initially collected, 98 participants met the eligibility criteria and were included in the final analysis. Mobile phone use before sleep was assessed using a researcher-developed 30-item Mobile Phone Usage Before Sleep Questionnaire (MPUBS), while sleep quality was assessed using the Pittsburgh Sleep Quality Index (PSQI). Descriptive statistics, reliability analysis, exploratory factor analysis, and Pearson correlation were conducted. The MPUBS demonstrated acceptable internal consistency, with a Cronbach's alpha of .820 and McDonald's omega of .825 for the total scale. Exploratory factor analysis produced a five-factor empirical solution explaining 60.2% of the total variance. The mean PSQI Global Score was 5.52 ($SD = 2.71$), indicating variation in reported sleep quality among participants. Pearson correlation analysis showed a weak positive and statistically significant relationship between MPUBS total scores and PSQI Global Scores, $r(96) = .218, p = .031$. Since higher PSQI scores indicate poorer sleep quality, greater mobile phone use before sleep was associated with poorer reported sleep quality. The findings highlight the relevance of bedtime mobile phone-use patterns when considering sleep quality among young corporate professionals.

Keywords: Mobile phone use, Bedtime smartphone use, Sleep quality, Pittsburgh Sleep Quality Index, Corporate professionals

1. Introduction

Sleep supports physical recovery, emotional regulation, attention, memory, and the capacity to cope with everyday demands. Sleep quality is a wider concept than the number of hours slept. It covers how easily a person falls asleep, how continuous the sleep is, how often it is disturbed, and how well the person functions the next day [1]. Two people who sleep for the same length of time can therefore describe very different sleep experiences.

The smartphone now sits at the center of the evening routine. One device provides messaging, social media, video, news, banking, and workplace communication, and it usually stays within reach until the moment a person falls asleep. Reviews of screen-based media use among children and adolescents link it with later bedtimes and shorter sleep [2], [3]. A prospective study of young adults found that frequent mobile phone use was associated with later sleep disturbances and depressive symptoms [4]. Mobile phone use after lights-out has also been associated with poorer sleep among adolescents [5] and adults [6].

Young corporate professionals form a distinctive group in this context. Their phones serve both work and personal purposes, work messages can arrive in the evening, and the same device is then used for social contact and entertainment. Bedtime phone use in this group may therefore combine work-related and leisure activity. Most existing studies, however, have sampled adolescents and university students, and many measure phone use only as total screen time. Few studies have looked at what people actually do with their phones in the hour before sleep, and even fewer have done so in the Indian workplace context.

The present study addresses this gap. It examines mobile phone use in the hour before bedtime across six dimensions (frequency and duration, type of use, bedtime habits, dependence, perceived impact on sleep, and daytime effects) and relates it to sleep quality, measured with the PSQI, among professionals aged 22–35 years. The objectives were (i) to assess the sleep quality of young corporate professionals, (ii) to examine patterns of mobile phone use before sleep, and (iii) to analyze the relationship between mobile phone use before sleep and overall sleep quality. The null hypothesis (H_0) stated that there is no significant relationship between mobile phone use before sleep and sleep quality among young corporate professionals.

2. Literature

Early work on bedtime phone use focused on adolescents. Munezawa et al. [5] found that using a mobile phone after lights-out was associated with shorter sleep, poorer sleep quality, insomnia symptoms, and daytime sleepiness among Japanese adolescents. Their study was important because it treated the timing of phone use as a separate behavior, and not as part of general technology use during the day. Exelmans and Van den Bulck [6] then extended the question to adults and reported that bedtime mobile phone use was associated with poorer sleep quality, greater fatigue, and more insomnia symptoms.

Later studies suggested that the way a phone is used may matter as much as the time spent on it. Demirci et al. [8] found that greater smartphone use severity among university students was related to poorer sleep quality, depression, and anxiety, which suggests that difficulty controlling use is relevant to sleep. In a survey of undergraduates in Thailand, Bunyalug and Kanchanakhan [9] reported that almost all participants (96.9%) used a smartphone before bed, and that

use in bed was significantly associated with sleep quality. Esubalew et al. [10] examined the prevalence and risk factors of poor sleep quality among 354 bedtime smartphone users studying medicine in Ethiopia, using the PSQI. Almalki et al. [11] studied 1,153 undergraduates in Saudi Arabia and found that evening smartphone use, waking to check the phone, and spending one to two hours on the phone at bedtime predicted poor sleep, with waking two or more times to check the phone showing the strongest association.

Evidence from working adults is more limited. Alshobaili and AlYousefi [12] studied non-medical staff at a Saudi medical city and reported that bedtime smartphone use was associated with poorer sleep quality, and Rafique et al. [13] likewise reported associations between mobile phone use and subjective sleep quality. Not all findings are strong, however. Dissing et al. [14] tracked the night-time phone activity of 815 young adults objectively. Night-time use was linked with slightly higher perceived stress and depressive symptoms at baseline, but the differences were small and did not replicate at a four-month follow-up.

2.1 Research gap

Existing research has mainly focused on adolescents and students, with comparatively less attention given to working professionals. Many studies have also measured mobile phone use mainly through overall screen time or duration, without considering factors such as frequency, type of use, bedtime habits, and dependence. In addition, limited research has examined these aspects among young corporate professionals in India. The present study therefore examines mobile phone use during the one hour before bedtime using a multidimensional measure and its relationship with sleep quality among young corporate professionals.

3. Methodology

3.1 Research design

The study used a quantitative, non-experimental, cross-sectional, correlational design. Participants reported their naturally occurring phone use and sleep at a single point in time, and no variable was manipulated. The aim was to establish the direction and strength of the association between the two variables, not to test causation. The independent variable was mobile phone use before sleep, and the dependent variable was sleep quality.

3.2 Participants and sampling

The target population was young corporate professionals aged 22–35 years. Participants were eligible if they were currently employed, used a smartphone regularly, gave informed consent, and were able to understand and complete the questionnaire. Responses were excluded if the participant was outside the age range, did not use a smartphone regularly, submitted an incomplete response, reported a diagnosed sleep disorder, took medication that substantially affects sleep, or had a severe psychological or medical condition likely to affect sleep. Participants were approached through online platforms and workplace networks, so the sample was recruited on the basis of accessibility and willingness to

participate. The proposed sample size was 100. In total, 102 responses were received, and 98 met the eligibility criteria and formed the final sample (N = 98).

3.3 Instruments

Socio-demographic sheet. This collected age, gender, marital status, educational qualification, occupation, industry, work arrangement, years of experience, and average daily working hours.

Mobile Phone Usage Before Sleep Questionnaire (MPUBS). This self-developed instrument contains 30 items, five for each of six dimensions: frequency and duration, type of mobile phone use, bedtime phone habits, dependence on the mobile phone, impact on sleep, and daytime effects. Participants rated their phone use during the hour before bedtime over the previous month on a five-point scale (1 = strongly disagree to 5 = strongly agree). Total scores range from 30 to 150, and higher scores indicate greater bedtime phone use. Expert review was used to check the relevance and clarity of the items.

Pittsburgh Sleep Quality Index (PSQI). The PSQI [1] assesses sleep over the previous month through seven component scores: subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleeping medication, and daytime dysfunction. Each component is scored from 0 to 3, and the components are summed to a global score from 0 to 21. Higher scores indicate poorer sleep quality.

3.4 Procedure and ethical considerations

Data were collected with an online form. Participants first read a description of the study and gave informed consent, and only those who consented could proceed. They then completed the demographic sheet, the MPUBS, and the PSQI items, and reviewed their answers before submitting. Participation was voluntary, participants could withdraw at any time without penalty, no unnecessary identifying information was collected, and the results are reported in aggregate form. The data were used only for academic purposes and were handled with care during screening and analysis.

3.5 Data analysis

Responses were scored in Microsoft Excel and analyzed in jamovi. Frequencies, percentages, means, medians, and standard deviations described the sample and the study variables. The internal consistency of the MPUBS was estimated with Cronbach's α and McDonald's ω , and its structure was explored with exploratory factor analysis (minimum residual extraction, oblimin rotation). Pearson's product-moment correlation between the total MPUBS score and the PSQI global score tested the null hypothesis at the .05 level.

4. Results

4.1 Characteristics of the sample

The final sample consisted of 98 participants aged 22 to 35 years ($M = 28.06$, $SD = 2.38$, $Mdn = 27$). Fifty participants (51.0%) were men, 47 (48.0%) were women, and one (1.0%) identified as other. Most were single ($n = 83$, 84.7%), and the remaining 15 (15.3%) were married. Regarding education, 74 participants (75.5%) were graduates, 20 (20.4%) were postgraduates, three (3.1%) held a professional degree, and one (1.0%) reported another qualification. Most participants worked in the information technology sector ($n = 81$, 82.7%). The others worked in healthcare ($n = 4$, 4.1%), education ($n = 3$, 3.1%), manufacturing ($n = 3$, 3.1%), marketing ($n = 3$, 3.1%), finance ($n = 2$, 2.0%), banking ($n = 1$, 1.0%), or another sector ($n = 1$, 1.0%). In terms of work arrangement, 47 participants (48.0%) worked in a hybrid mode, 43 (43.9%) worked in the office, and eight (8.2%) worked remotely. Work experience was less than one year for four participants (4.1%), one to three years for 32 (32.7%), four to six years for 42 (42.9%), and more than six years for 20 (20.4%). Average working hours per day were fewer than eight for nine participants (9.2%), eight to nine for 52 (53.1%), ten to twelve for 32 (32.7%), and more than twelve for five (5.1%).

4.2 Objective 1: Sleep quality

The PSQI global score had a mean of 5.52 ($SD = 2.71$, $Mdn = 5.00$, range 1–14). A global score above 5 is conventionally taken to indicate poor sleep [1], so the sample mean lay close to this threshold; the proportion of participants above the cut-off was not analyzed in this study. As Table 1 shows, sleep latency had the highest component mean ($M = 1.34$), followed by sleep disturbances ($M = 1.05$) and subjective sleep quality ($M = 1.04$). Use of sleeping medication ($M = 0.19$) and daytime dysfunction ($M = 0.35$) had the lowest means. In line with this, 88.8% of participants scored 0 on medication use and 74.5% scored 0 on daytime dysfunction. Most participants scored 1 on sleep latency (57.1%), and a further 27.6% scored 2 and 7.1% scored 3.

Table 1: Descriptive statistics of PSQI scores ($N = 98$)

PSQI component	M	SD
C1 Subjective sleep quality	1.04	0.56
C2 Sleep latency	1.34	0.73
C3 Sleep duration	0.87	0.55
C4 Habitual sleep efficiency	0.68	0.87
C5 Sleep disturbances	1.05	0.53
C6 Use of sleeping medication	0.19	0.62
C7 Daytime dysfunction	0.35	0.68
PSQI global score	5.52	2.71

Note. Component scores range from 0 to 3; the global score ranges from 0 to 21. Higher scores indicate greater difficulty.

4.3 Objective 2: Patterns of mobile phone use before sleep

The mean total MPUBS score was 109.3 ($SD = 17.93$). Among the six dimensions, frequency and duration had the highest mean ($M = 20.4$), and daytime effects had the lowest ($M = 16.9$) (Table 2).

Table 2: MPUBS scores and internal consistency ($N = 98$)

Dimension	M	SD	α	ω
Frequency and duration	20.4	3.58	0.787	0.79
Type of mobile phone use	18.3	3.5	0.796	0.8
Bedtime phone habits	17.9	3.71	0.806	0.81
Dependence on mobile phone	18.2	4.86	0.762	0.773
Impact on sleep	17.6	4.57	0.797	0.809
Daytime effects	16.9	4.29	0.797	0.809
Total MPUBS	109.3	17.93	0.82	0.825

Note. Each dimension has 5 items (score range 5–25); the total score ranges from 30 to 150.

The item-level responses show that bedtime phone use was routine. Ninety participants (91.8%) agreed or strongly agreed that they used their phone every night before sleeping, and 88 (89.8%) agreed that they spent more than 30 minutes on it. A large share also reported continuing to use the phone longer than intended (85.7%), using social media before sleep (84.7%), using the phone after the lights were off (81.6%), and finding it hard to stop (73.5%). Overall, 79.6% said that bedtime phone use had become a daily habit, and 81.6% said that it delays their bedtime. In addition, 78.6% believed that bedtime phone use harms their sleep quality, and 88.8% believed that reducing it would improve their sleep.

4.4 Reliability and factor structure of the MPUBS

Internal consistency was good for the total scale ($\alpha = .820$, $\omega = .825$) and acceptable to good for the six dimensions ($\alpha = .762$ – $.806$; $\omega = .773$ – $.810$; Table 2). The dependence dimension had the lowest coefficients, and bedtime phone habits had the highest. The data were suitable for factor analysis (Kaiser–Meyer–Olkin = .850; Bartlett's $\chi^2(435) = 2125$, $p < .001$). Exploratory factor analysis extracted five factors that together explained 60.2% of the variance, with the first factor accounting for 14.96%. This empirical solution does not map exactly onto the six conceptual dimensions and should be treated as preliminary evidence about the structure of the instrument.

4.5 Objective 3: Relationship between bedtime phone use and sleep quality

The total MPUBS score correlated positively with the PSQI global score, $r(96) = .218$, $p = .031$. Since higher MPUBS scores reflect more bedtime phone use and higher PSQI scores reflect poorer sleep, participants who reported more bedtime phone use tended to report poorer sleep. The correlation was weak, and it corresponds to about 5% shared variance ($r^2 \approx .05$). Because p was below .05, the null hypothesis was rejected.

5. Discussion

The findings demonstrate that mobile phone use during the period immediately preceding sleep was common among young corporate professionals. A substantial proportion of participants reported using their phones every night before sleeping, spending more than 30 minutes on their phones before bedtime, continuing use after turning off the lights, experiencing difficulty stopping use, and perceiving that phone use delayed bedtime.

These patterns are consistent with previous research suggesting that digital media and mobile phone use around bedtime may be associated with sleep-related outcomes. Hale and Guan [2] identified an association between screen-based media use and sleep outcomes, while Munezawa et al. [3] reported relationships between mobile phone use after lights out and sleep disturbances. Exelmans and Van den Bulck [4] also examined bedtime mobile phone use among adults and identified associations with sleep-related outcomes. Other studies have similarly examined smartphone use, social media use, and digital media exposure in relation to sleep [5-9].

The current study extends this area of research by focusing specifically on young corporate professionals and by examining multiple dimensions of mobile phone behaviour during the one-hour period before sleep. This is relevant because mobile phone use before bedtime may include several distinct behaviours, including entertainment, communication, work-related activities, repeated checking, and difficulty disengaging from the device.

The reliability findings provide evidence that the MPUBS items showed satisfactory internal consistency within the present sample. The total scale demonstrated $\alpha = .820$ and $\omega = .825$. The EFA further indicated that the 30 items had an interpretable empirical structure, with a five-factor solution accounting for 60.2% of the variance. The difference between the questionnaire's original conceptual six areas and the empirical five-factor solution highlights the importance of examining the factor structure in future samples before making broader claims about the dimensionality of the measure.

The PSQI results showed variation in participant's reported sleep quality. Subjective sleep quality and sleep latency had relatively higher component scores than the use of sleeping medication and daytime dysfunction. The mean PSQI Global Score of 5.52 indicates that sleep quality was not uniform across the participants.

Most importantly, the correlation analysis identified a statistically significant but weak positive relationship between mobile phone use before sleep and PSQI Global Score, $r(96) = .218$, $p = .031$. Since higher PSQI scores indicate poorer sleep quality, participants reporting greater mobile phone use before sleep also tended to report poorer sleep quality. The relatively small correlation coefficient indicates that the association was weak, suggesting that mobile phone use before sleep represents only one of several factors that may be related to sleep quality.

The finding should therefore be interpreted as an association rather than evidence that mobile phone use directly causes poor sleep. Other personal, occupational, behavioural, environmental, and sleep-related factors may also contribute to differences in sleep quality. Longitudinal and experimental research would be required to examine temporal and causal relationships more directly.

6. Future Research

Future research may include larger samples covering different occupational groups, age ranges, and geographical settings.

Longitudinal studies could examine whether changes in bedtime mobile phone use correspond with subsequent changes in sleep quality. Objective measures, such as smartphone-use records and wearable sleep measures, may complement self-reported questionnaires.

Further psychometric examination of the MPUBS is also recommended. In particular, confirmatory factor analysis with an independent sample could be used to examine whether the empirical factor structure observed in this study can be replicated. Research may also examine whether the purpose and timing of mobile phone use have different relationships with individual components of sleep quality.

7. Conclusion

The present study examined mobile phone use before sleep and sleep quality among young corporate professionals aged 22–35 years. The findings showed that bedtime mobile phone use was a common behaviour among the participants, with many reporting regular nightly use, more than 30 minutes of use before bedtime, continued use after turning off the lights, difficulty stopping use, and perceived delays in bedtime. The researcher-developed MPUBS demonstrated satisfactory internal consistency, with a total Cronbach's alpha of .820 and McDonald's omega of .825. Exploratory factor analysis of the 30 items produced a five-factor empirical solution explaining 60.2% of the total variance. The mean PSQI Global Score was 5.52, indicating variation in reported sleep quality within the study sample. A weak positive and statistically significant association was found between mobile phone use before sleep and overall sleep quality, $r(96) = .218$, $p = .031$. Because higher PSQI scores indicate poorer sleep quality, greater bedtime mobile phone use was associated with poorer reported sleep quality. However, the correlation was weak and the cross-sectional design does not establish causation. Overall, the findings suggest that bedtime mobile phone-use behaviour is a relevant factor to consider when examining sleep quality among young corporate professionals. The results may also encourage further research using larger and more diverse samples, longitudinal designs, and objective measures of mobile phone use and sleep.

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