

The Relationship between Mindfulness, Bedtime Procrastination, Smartphone Addiction and General Well Being in Emerging Adults

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ABSTRACT

The study included 111 Indian individuals aged 18-29. Results showed a significant positive correlation between Mindfulness and General Well-being in emerging adults. Mindfulness also displayed a significant negative correlation with Smartphone Addiction and Bedtime Procrastination. Bedtime Procrastination and Smartphone Addiction exhibited a significant positive correlation. Additionally, Bedtime Procrastination and General Well-being had a significant negative relationship, as did Smartphone Addiction and General Well-being. Regression analysis indicated that Mindfulness significantly predicted General Well-being, while Bedtime Procrastination and Smartphone Addiction did not. The study implies that smartphone addiction and bedtime procrastination can lead to dissatisfaction and disconnection, negatively impacting overall well-being. Increasing self-control through mindfulness training is recommended to combat these behaviors and enhance general well-being.

Keywords: *Mindfulness, Bedtime Procrastination, Smartphone Addiction, General Well-Being, Emerging Adults*

Since the advent of the smartphone, the aberrant use of this device creates questions whether the abuse of its use has led to addiction. This addiction is usually driven by the plethora of beneficial uses ranging from productivity enhancement and the human urge to be connected, seen, heard, guided and monitored by others which has formed deep roots in our social brains. Smartphone addiction is usually defined as a compulsive and problematic behavioral patterns of smartphone use, inability to successfully regulate or control one's smartphone use, experience of adverse withdrawal symptoms, decreased tolerance with greater use, and functional impairment (Lin et al., 2016).

Talking about sleep disturbance and functional impairment, Bedtime procrastination is an important factor which leads to insufficient sleep and perhaps could be one of the plausible reasons for hampering General Well-being. Bedtime Procrastination is a health behavior related procrastination wherein an individual goes to bed later than intended while no external circumstances are accountable for doing so (Kroese,2014) it's not that the

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individual doesn't want to sleep but it's more like not wanting to give up other pleasurable activities.

A study on Problematic Internet Use and Psychosocial Well-being Role of Mindfulness mediated by Self-Control and Negative Affect was conducted on 246 postgraduate management students' participants from a leading business school of India (Sinha et.al,2021). The findings of the study were there was a negative correlation among mindfulness and problematic Internet use that is higher mindfulness was associated with lower Internet use and vice versa and negative self-affect and self-control partially mediated this relationship. Problematic internet use partially mediates the relationship between mindfulness and depression/loneliness which are considered as indicators of psychosocial well-being.

Volkmer et. al (2018) conducted a study on 461 German speaking participants to understand the impact of mobile phone use on well-being. The key highlights of the results are as follows, (i) Mobile phone use is negatively associated with mindfulness, life satisfaction and well-being. (ii) Well-being and mindfulness are significant predictors of mobile phone use. (iii) For men, well-being is a mediator of the association between mindfulness and mobile phone use and lastly (iv) For women, mindfulness has a direct relationship with mobile phone use.

Sohn et.al (2021) studied 1043 participants between age 18-30 to understand the association between smartphone addiction and sleep. The findings were, smartphone addiction was reported by 39% of young adults. Smartphone addiction was associated with poor sleep which is independent of hours of usage thereby asserting that length of time should not be used as a proxy for harmful usage.

A study on mindfulness, emotion regulation and subjective well-being conducted by Mandal et. al (2011) asserted that mindfulness as a practice as well as trait reduces pain and enhances positive functioning by enhancing positive affective experiences and decreasing negative affective experiences related to physical and psychological illness.

METHODOLOGY

Sample

The sample consisted of 111 participants between the ages of 18-29 years.

Instruments

Four measures were used in this study,

- 1. Smartphone Addiction-** Smartphone Addiction was measured using the Smartphone Addiction Scale Short Version (SAS-SV) by Kwon et. al (2013). This scale is a short version that contains only 10 questions for easy smartphone addiction screening of adolescents and community adults who are considered vulnerable to addiction. High score on the scale reflects the self-awareness about the seriousness of smartphone addiction. The scale has a cut off value of 31 in boys and a cut off value of 33 in Girls. The possible range for this scale was from 10-60. Participants responded to each item using a 6-point likert scale ranging from Strongly disagree to Strongly agree. The 10 final questions were selected using content validity. The internal consistency and concurrent validity of Smartphone Addiction Scale (SAS) were verified with a Cronbach's alpha of 0.911. The SAS-SV showed good

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reliability and validity for the assessment of smartphone addiction and was used efficiently for the evaluation of smartphone addiction in community and research areas.

- 2. Mindfulness** - Mindfulness was measured using the Mindful Attention Awareness Scale (MAAS) by Brown & Ryan (2003). The trait MAAS has been validated for use with college students and community adults. The trait MAAS is a 15-item scale designed to assess a core characteristic of mindfulness, namely, a receptive state of mind in which attention, informed by a sensitive awareness of what is occurring in the present. Internal consistency levels (Cronbach's alphas) generally range from .80 to .90. Participants responded to each item using a 6-point likert scale ranging from Almost always to Almost never. The possible range for this scale was from 15-90. The MAAS has demonstrated high test-retest reliability, discriminant and convergent validity, known-groups validity, and criterion validity.
- 3. Bedtime Procrastination** - Bedtime Procrastination was measured using the Bedtime Procrastination Scale by Kroese (2014). A 9-item scale was developed to assess bedtime procrastination. The scale has a Cronbach's α of .92. Items were answered on 5-point scales ranging from 1 (never) to 5 (always). An exploratory factor analysis using principle component analysis revealed a single-factor solution (Eigenvalue = 5.57), indicating that the scale assesses a uniform construct, as intended. The possible range for this scale was from 9- 45.
- 4. General Wellbeing** - General Wellbeing was measured using the 14 items Scales of General Wellbeing (14-SGWB) by Longo et. al (2018). Items were answered on a 5-point likert scale ranging from 1 (Not at all) to 5 (Very true). The 14-SGWB is developed from the Scales of General Well-Being (SGWB, Longo, Coyne & Joseph, 2017) which is a 65-item tool assessing fourteen different constructs. The 14-SGWB supported a factor structure consistent with the long form, as well as good internal consistency. The possible range for this scale was from 14 - 70. Additionally, general well-being scores of short- and long-form correlated at .96 and each item in the short form was strongly related to its respective long-form scale.

Procedure

The study utilized the purposive and snowballing sampling method to collect the data. Data was collected from the participants who were emerging adults across the cities of India through a survey method. The sample comprised of 111 participants between the ages of 18 to 29 years. They were briefed about the study and were informed that the data was collected only for research purposes and the confidentiality of their data would be maintained. Consent forms were signed by the participants and they were given initials to preserve their anonymity. The data was collected online via google forms and questionnaires were filled out by the participants.

RESULTS

The aim of the study was to understand whether there exists a relationship between Mindfulness, Bedtime Procrastination, Smartphone addiction and General Well-being in Emerging Adults. The inferential statistics used were Scatter Plot to check for linearity, followed by Pearson Product Moment Correlation Coefficient and Regression analysis on the significant data.

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Table No. 1 Correlations between Mindfulness, Bedtime procrastination, Smartphone addiction and General wellbeing

Variable	Mindfulness	Bedtime Procrastination	Smartphone Addiction	General Wellbeing
Mindfulness	-			
Bedtime Procrastination	-0.243*	-		
Smartphone Addiction	0.465***	0.29**	-	
General Wellbeing	0.584***	-0.21*	-0.363***	-

* p < .05, ** p < .01, *** p < .001

Table no. 1 indicated the correlation trends between the variables of the study. The analysis showed that Mindfulness and Bedtime Procrastination had a significant negative correlation. (r = -0.243; p<.05) Thus, when Mindfulness is low, Bedtime Procrastination is high or vice versa. Furthermore, Mindfulness and Smartphone Addiction had a significant negative correlation. (r = -0.465; p <.001). This is indicative of the fact that when Mindfulness is low, Smartphone Addiction is high or vice versa. There was a significant positive correlation between Mindfulness and General Well-being. (r = 0.584; p <.001). This suggests that when Mindfulness is high, General Well-being is also high. There is a significant positive correlation between Bedtime Procrastination and Smartphone Addiction (r= 0.290, p<.01) that is when Bedtime Procrastination is high, Smartphone addiction is also high. Bedtime Procrastination and General Wellbeing have a significant negative correlation. (r = -0.210, p<.05) This suggests that when Bedtime Procrastination is high, General Well-being is low. Lastly, there is a significant negative correlation between Smartphone addiction and General Wellbeing. (r= - 0.363, p <.001). This insinuates that when Smartphone addiction is high, General Wellbeing is low. Considering all the correlations were found significant, regression analysis was conducted to see if these variables can predict GWB.

Table No. 2 Model Summary Table for General Well-being

Model	R	R ²	Adjusted R ²	RMSE	R ² Change	F Change	p
1	0.595	0.354	0.336	7.959	0.354	19.568	< .001

Table No. 3 Regression ANOVA table for Mindfulness, Bedtime Procrastination, Smartphone Addiction and General Well-being

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	3718.195	3	1239.398	19.568	< .001
Residual	6777.174	107	63.338		
Total	10495.37	110			

A series of regression analyses were examined to estimate the extent to which Mindfulness, Bedtime Procrastination and Smartphone Addiction could be predicted from General Wellbeing. The results obtained in table no. 2 and 3 show that Mindfulness, Bedtime Procrastination and Smartphone Addiction can predict General well-being. (R = 0.595, R2 =

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0.354, $F = 19.568$, $p < 0.001$). Mindfulness, Bedtime Procrastination and Smartphone Addiction explains 35.4% of variance in General Well-being.

Table No. 4 Beta value for Mindfulness, Bedtime Procrastination and Smartphone Addiction predicting General Wellbeing

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	β		
Constant	32.91	7.263	-	4.531	< .001
Mindfulness	5.747	0.974	0.522	5.902	< .001
Bedtime Procrastination	-0.109	0.17	-0.052	-0.64	0.523
Smart phone addiction	-0.104	0.088	-0.106	-1.18	0.241

Table No. 4 indicated regression for Mindfulness, Bedtime Procrastination and Smartphone Addiction predicting General Well-being. The standardized beta coefficient value for Mindfulness ($\beta = 0.52$) for the predictor variable emerged to be significant with General Wellbeing ($t = 5.90$; $p < .001$). The standardized beta coefficient value for Bedtime Procrastination ($\beta = -0.05$) for the predictor variable emerged to be not significant with General Wellbeing ($t = -0.64$; $p = 0.52$). The standardized beta coefficient value for Smartphone Addiction ($\beta = -0.106$) for the predictor variable emerged to be not significant with General Wellbeing ($t = -1.18$; $p = 0.241$).

Table No. 5 Model Summary Table for General Well-being

Model	R	R ²	Adjusted R ²	RMSE
1	0.584	0.341	0.335	7.966

Table No. 6 Regression ANOVA table for Mindfulness and General Well-being

Model	Sum of Squares	df	Mean Square	F	p
Regression	3578.376	1	3578.376	56.389	< .001
Residual	6916.993	109	63.459		
Total	10495.37	110			

The results obtained in table no. 5 and 6 showcases that Mindfulness can predict General Wellbeing. ($R = 0.584$, $R^2 = 0.341$, $F = 56.389$, $p < 0.001$). Mindfulness explains 34.1% of variance in General Well-being.

Table No. 7 Beta value for Mindfulness predicting General Wellbeing

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	β		
Constant	24.049	7.263	-	6.742	< .001
Mindfulness	6.428	0.856	0.584	7.509	< .001

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Table No. 7 indicates regression for Mindfulness predicting General Well-being. The standardized beta coefficient value for Mindfulness ($\beta = 0.58$) for the predictor variable emerged to be significant with General Wellbeing ($t=7.509$; $p<.001$).

Table No. 8 Model Summary Table for General Well-being

Model	R	R ²	Adjusted R ²	RMSE
1	0.21	0.044	0.035	9.594

Table No. 9 Regression ANOVA table for Bedtime Procrastination and General Well-being

Model	Sum of Squares	df	Mean Square	F	p
Regression	462.34	1	462.34	5.023	0.027
Residual	10033.03	109	92.046		
Total	10495.37	110			

The results obtained in table no. 8 and 9 implies that Bedtime Procrastination can't predict General Wellbeing. ($R = 0.21$, $R^2 = 0.04$, $F = 5.023$, $p=0.027$) Bedtime Procrastination explains 4.4% of variance in General Well-being.

Table No. 10 Beta value for Bedtime Procrastination predicting General Wellbeing

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	β		
Constant	61.841	5.262	-	11.752	< .001
Bedtime Procrastination	-0.435	0.194	0.21	-2.241	0.027

Table No. 10 indicates regression for Bedtime Procrastination predicting General Well-being. The standardized beta coefficient value for Bedtime Procrastination ($\beta = -0.21$) for the predictor variable emerged to be not significant with General Wellbeing ($t = -2.241$; $p=0.027$).

Table No. 11 Model Summary Table for General Well-being

Model	R	R ²	Adjusted R ²	RMSE
1	0.363	0.132	0.124	9.142

Table no. 12 Regression ANOVA table for Smartphone Addiction and General Well-being

Model	Sum of Squares	df	Mean Square	F	p
Regression	1386.542	1	1386.542	16.592	< .001
Residual	9108.827	109	83.567		
Total	10495.37	110			

The results obtained in 4.6.1 and 4.6.2 implies that Smartphone Addiction can predict General Wellbeing. ($R = 0.363$, $R^2 = 0.132$, $F = 16.592$, $p<0.001$) Smartphone Addiction explains 13.2% of variance in General Well-being.

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Table No. 13 Beta value for Smartphone Addiction predicting General Wellbeing

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	β		
Constant	61.173	2.824	-	21.659	< .001
Smartphone Addiction	-0.358	0.088	-0.363	-4.073	<.001

Table No. 13 indicates regression for Smartphone Addiction predicting General Well-being. The standardized beta coefficient value for Smartphone Addiction ($\beta = -0.363$) for the predictor variable emerged to be significant with General Wellbeing ($t = -4.073$; $p < 0.001$).

DISCUSSION

The summary of the findings is as follows. The results obtained by correlation were in line with all the hypotheses that is the first hypothesis stated that there was a significant positive relationship between Mindfulness and General Well-being in Emerging Adults. The second hypothesis stated that there was a significant negative relationship between Mindfulness and Smartphone Addiction in Emerging Adults. The third hypothesis asserted that there was a significant negative relationship between Mindfulness and Bedtime Procrastination in Emerging Adults. The fourth hypothesis stated that there was a significant positive relationship between Bedtime Procrastination and Smartphone Addiction in Emerging Adults. The fifth hypothesis displayed that there was a significant negative relationship between Bedtime procrastination and General Well-being in Emerging Adults and lastly, the sixth hypothesis stated that there was a significant negative relationship between Smartphone addiction and General well-being in Emerging Adults. Additional ancillary regression analysis suggested that Mindfulness played a significant role in predicting General Well-being of the individual. The other two variables that is Bedtime Procrastination and Smartphone addiction did not display a significant impact in predicting General Well-being of the individual.

The first hypothesis stated a significant positive relationship between Mindfulness and General Well-being in Emerging Adults. The result was in line with the hypothesis. Mindfulness has increasingly become popular especially in the pandemic because it leads to decreased stress levels and increased well-being. Lately, mindfulness-based therapies and programmes have been promoted as a go to universal tools in order to treat mental health issues such as anxiety, depression, stress thereby escalating the well-being of the people. The foremost part about mindfulness is, it is accessible to anyone and anywhere. Being mindful or practicing mindfulness cultivates the regulation of emotion, attention, intention and healthy attitudes which generates a synergistic way of being thereby leading to enhanced health and well-being. Evidence also suggests that mindfulness meditation has numerous health benefits, including increased immune functioning, improvement to well-being and reduction in psychological distress. (Davis & Hayes, 2012). A recent research indicated that there was a significant small or medium effects of mindfulness apps compared to control conditions for perceived stress, symptoms of depression and anxiety, life satisfaction, quality of life, burnout, psychological well-being and positive and negative affect. (Gal et.al, 2020).

The second hypothesis implicated a significant negative relationship between Mindfulness and Smartphone Addiction in Emerging Adults. The result was in line with the hypothesis.

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Mindlessness has often led to increased technological addiction. Mindless scrolling on various apps has lately been a cause of concern thereby increasing the smartphone addiction levels. Being mindfully aware of the time used on a smartphone does play a substantial role in reducing the addiction levels. In a study conducted by Cheng et. al (2020) on Chinese college students, it was found that mindfulness shows a significant negative correlation with smartphone addiction late at night. Undergraduates exhibit lower levels of smartphone addiction before going to sleep when they have higher levels of mindfulness because that leads to having stronger self-control capabilities and decreased levels of rumination. (Cheng et. al,2020). Recent research on young adults has found that the effect of nomophobia on problematic smartphone use weakens as mindfulness increases. (Regan,2020). Mindfulness protects against effects of boredom proneness on problematic use, but this effect diminishes as impulsivity increases. In yet another study conducted by Lan et. al (2018) on Chinese Students, it was found that Group Mindfulness based Cognitive Behavioural Intervention (GMCI) significantly alleviated smartphone addiction in university students.

The third hypothesis displayed a negative significant relationship between Mindfulness and Bedtime Procrastination in Emerging Adults. The result was in line with the hypothesis. Bedtime procrastination is basically failing to go to bed at an intended time while no external circumstances prevent an individual from doing so. An individual who is very tired and its already past midnight but instead of sleeping, the person chooses to read a book or watch a favourite show and by the time the individual realizes one more page has turned to five chapters or the person might have binged watched the entire series and that is all due to mindlessness of time. Thus, if an individual is mindful, bedtime procrastination is going to be low. It's like people who lack attention tend to have sleep related difficulties. In a recent study conducted on 270 participants in Singapore, the findings showed that boredom proneness predicted inattention, which in turn was associated with increased bedtime procrastination and subsequently poorer sleep quality. (Teoh,2020). Mindfulness is associated with inattention. In a study conducted by Modesto & Vania (2015) they found that mindfulness training may improve self-regulation of attention. It also leads to an increased ability to suppress unrelated thoughts and distractions thereby resulting in enhanced attention. To add on to this, inattention and procrastination do not occur simultaneously but sequentially. Neurobiological perspective explains this association aptly by asserting that overactive limbic system is associated with procrastination that is responsible for reinforcing behaviours and the decreased prefrontal cortex functioning controls attention (Bolden & Fillauer, 2019). Thus, on similar lines, behavioural data affirms that people who scored high on general procrastination had more inattention symptoms, such as showing problems with sustaining attention and organizing tasks and being easily distracted (Niermann & Scheres, 2014). Thus, we've reason to believe that inattention and bedtime procrastination could sequentially explain the association with sleep quality.

The fourth hypothesis affirmed that there was a significant positive relationship between Bedtime Procrastination and Smartphone Addiction in emerging adults. The result was in line with the hypothesis. Available entertainment in the form of smartphones is one of the major causes due to which people sleep procrastinate. Smartphone is such a device that provides everything right from getting yourself educated to online shopping to social media to entertainment, it has left no stone untouched thereby making people of almost all age groups especially the youth attached to it and eventually making them an addict to this device which in turn impacts their sleep quality because they tend to sacrifice on their sleep quality considering at the end of the day there are no external demands which act as an

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hindrance in their leisure time. A very recent study was conducted on 815 Chinese college students aged 18-25 years which concluded that bedtime procrastination can predict fatigue and to add on to this mobile phone addiction partially mediates between bedtime procrastination and fatigue (Feng et. al,2022). Temporal Motivation Theory also states people tend to delay tasks when they know they are not going to get immediate gratification or reward. People who are addicted to smartphones have higher levels of psychological cravings and maybe less self-control for smartphone use which in turn serves to reduce their motivation to go to bed at a reasonable time considering the health benefits from consistently sleeping on time accrue at a later point in time and thus as per theory people tend to use smartphones due to its immediate enjoyment, leading to bedtime procrastination. (You,2021).

The fifth hypothesis states that there was a significant negative relationship between Bedtime Procrastination and General Well-being. The result was in line with the hypothesis. Bedtime Procrastination can cause sleep deprivation. If an individual doesn't get at least 6-8 hours of sleep on a regular basis then it can have an adverse impact on its mind and body considering the body doesn't get enough time to recharge which can lead to negative widespread effects on health. Insufficient sleep causes low attention levels, low memory, stress, anxiety and irritation thereby impacting the overall general well-being of the individual. Thus, if an individual consistently indulges in bedtime procrastination then his general well-being could be a cause of concern. There is a robust link of procrastinations to negative mood states such as depression, anxiety, guilt, shame and poor overall mental health. (Sirois,2016).

The sixth hypothesis asserted that there was a negative relationship between Smartphone addiction and General well-being in Emerging Adults. The result was in line with the hypothesis. While individuals may assume that losing oneself online/ on a smartphone will help them alleviate from their loneliness, depression and even boredom, there are chances that the individual can end up feeling worse. One study found that mere presence of a phone in a workplace can accelerate anxiety and people perform poorly on given tasks. The heavier a person's phone use, greater is the anxiety experienced by that individual. (Melinda,2019) The persistent buzz or ping of the smartphone can distract an individual from important tasks, lower their productivity and creativity levels thereby leading to lower satisfaction with oneself which in turn can have a substantial impact on the general well-being of an individual. A study in the United Kingdom found that people who are on social media for a long duration are more likely to showcase negative personality traits such as narcissism. Taking endless selfies, posting all the thoughts or details about life can create an unhealthy self-centeredness, distancing the individual from real life relationships and making it harder to cope with stress. (Melinda,2019).

In the study, the regression model of Mindfulness predicting General Wellbeing was observed to be an applicable fit for the findings obtained. A theory that in a way explains this is Mindfulness to Meaning theory which affirms that mindfulness allows an individual to shift focus from stress appraisals and be aware of one's own thinking (metacognitive state) thereby broadening the attention to unnoticed or ignored pieces of information about one's life followed by reframing of adverse circumstances which decreases stress and promotes positive emotions. This reframing is then deepened and enriched when one savors what is meaningful in life, growth promoting and pleasant and engenders a deeper sense of purpose and self-actualization (Garland,2015).

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The regression model of Bedtime Procrastination predicting General Wellbeing did not display a significant impact in predicting General Wellbeing. Using responses to fatigue related and lack of sleep questions, it was found that a large proportion of participants felt they have slept too little and feel tired during the day for just 1-2 days in a week and this could be one of the reasons as to why bedtime procrastination could not significantly predict general well-being.

The regression model of Smartphone addiction predicting General Wellbeing did not display a significant impact in predicting General Wellbeing. Using responses to smartphone usage it was found that half of the participants did use their phone for 3-5 hours in a day and if the usage is channelized in an efficient way, then one cannot deny the numerous advantages of smartphone. It's only when the usage hampers the daily life and turns into addiction then the general well-being could be a cause of concern.

Limitations and Future Recommendations

Firstly, it should be noted that the individuals who participated in the questionnaire mostly came from urban cities of India and were in the age range of 18-29 years. Unique cultural and social contextual factors may have influenced, also due to limited sample size, they are not representative of all young people. Therefore, future research may select sample surveys from a wider population from different cultures. Additionally, as for research methods, it is suggested that interview research methods, experimental research methods and psychological intervention research methods can be adopted to further verify the data. Further, the scales used in the research are self-report measures and thus the participants may have provided socially desirable answers. The pandemic could have played a major role in decreased Well-being and Mindfulness and increased Smartphone addiction and Bedtime procrastination which was not taken into account. Sleep cycles of people would have been disturbed post pandemic which was not considered. Lastly, the variables under study have not been extensively explored in the Indian context, therefore, relevant Indian researches were not obtained to support the findings.

Gender differences can be considered in future research. A comparative study can also be conducted between the working population and the studying population because both of them have different environments. The variables can also be studied with respect to personality traits. Future researches can even consider how work from home culture can have an impact on these variables. Cross cultural studies can also be undertaken in order to understand the differences among the population across the globe. Future research can even be done on the middle-aged population considering their use of smartphone and bedtime procrastination has also increased lately.

REFERENCES

- Bolden, J., & Fillauer, J. P. (2019). "Tomorrow is the busiest day of the week": Executive functions mediate the relation between procrastination and attention problems.
- Brown, K.W. & Ryan, R.M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology*, 84, 822-848.
- Cheng, S.-S., Zhang, C.-Q., & Wu, J.-Q. (2020). Mindfulness and Smartphone Addiction Before Going to Sleep among College Students: The Mediating Roles of Self-Control and Rumination. *Clocks & Sleep*, 2(3), 354–363.

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- Davis, D. M., & Hayes, J. A. (2012). What are the benefits of mindfulness? <https://www.apa.org/monitor/2012/07-08/ce-corner>
- Feng, B., Sun, W. Bedtime Procrastination and Fatigue in Chinese College Students: The Mediating Role of Mobile Phone Addiction. *Int J Mental Health Addiction* (2022). <https://doi.org/10.1007/s11469-022-00796>
- Gal, Ava; Etefan, Simona; Cristea, Ioana A. (2020). *The efficacy of mindfulness meditation apps in enhancing users well-being and mental health related outcomes: a meta-analysis of randomized controlled trials. Journal of Affective Disorders, (), S0165032720328317–*. doi: 10.1016/j.jad.2020.09.134
- Garland, Eric & Farb, Norman & Goldin, Philippe & Fredrickson, Barbara. (2015). The Mindfulness-to-Meaning Theory: Extensions, Applications, and Challenges at the Attention–Appraisal–Emotion Interface. *Psychological Inquiry*. 26. 377-387. 10.1080/1047840X.2015.1092493.
- Kroese, F. M., De Ridder, D. T. D., Evers, C., & Adriaanse, M. A. (2014). Bedtime procrastination: introducing a new area of procrastination. *Frontiers in Psychology*, 5(611). <https://doi.org/10.3389/fpsyg.2014.00611>
- Kwon, Min; Kim, Dai-Jin; Cho, Hyun; Yang, Soo; Choi, Doo-Sup (2013). *The Smartphone Addiction Scale: Development and Validation of a Short Version for Adolescents. PLoS ONE, 8(12), e83558–*. doi: 10.1371/journal.pone.0083558
- Lan, Y., Ding, J.-E., Li, W., Li, J., Zhang, Y., Liu, M., & Fu, H. (2018). A pilot study of a group mindfulness-based cognitive-behavioral intervention for smartphone addiction among university students. *Journal of Behavioral Addictions*, 7(4), 1171–1176.
- Lin, Y. H., Chiang, C. L., Lin, P. H., Chang, L. R., Ko, C. H., Lee, Y. H., & Lin, S. H. (2016). Proposed diagnostic criteria for Smartphone addiction. *PLoS One*. 11(11), 163010
- Longo, Ylenio & Coyne, Iain & Joseph, Stephen. (2018). Development of the short version of the Scales of General Well-Being: The 14-item SGWB. *Personality and Individual Differences*. 124. 31-34. 10.1016/j.paid.2017.11.042.
- Mandal, S. P., Arya, Y. K., & Pandey, R. (2011). Mindfulness, emotion regulation and subjective wellbeing: An overview of pathways to positive mental health. *Indian Journal of Social Science Research*, 8(1-2), 159-167.
- Melinda.(2019,March20).*HelpGuide.org.HelpGuide.org*.<https://www.helpguide.org/articles/addictions/smartphone-addiction.html>
- Regan, Timothy; Harris, Bethany; Van Loon, Matthew; Nanavaty, Namrata; Schueler, Jordan; Engler, Solangia; Fields, Sherece A. (2020). *Does mindfulness reduce the effects of risk factors for problematic smartphone use? Comparing frequency of use versus self-reported addiction. Addictive Behaviors, 108(), 106435–*. doi: 10.1016/j.addbeh.2020.106435
- Sinha, Nishit Kumar; Kumar, Pankaj; Kumar, Sushil; Priyadarshi, Pushpendra (2021). Problematic Internet Use and Psychosocial Well-being: Role of Mindfulness Mediated by Self-Control and Negative Affect. *IIM Kozhikode Society & Management Review*, 10(1), 99–112. doi:10.1177/2277975220965346
- Sohn, S. Y., Krasnoff, L., Rees, P., Kalk, N. J., & Carter, B. (2021). The Association Between Smartphone Addiction and Sleep: A UK Cross-Sectional Study of Young Adults. *Frontiers in Psychiatry*, 12. <https://doi.org/10.3389/fpsyg.2021.629407>
- Sirois, Fuschia M. (2016). Procrastination, Health, and Well-Being || Introduction: Conceptualizing the Relations of Procrastination to Health and Well-Being., 3–20.doi:10.1016/B978-0-12-802862-9.00001-3

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- Teoh, Ai Ni; Ooi, Evangel Yi En; Chan, Alyssa Yenyi (2020). *Boredom affects sleep quality: The serial mediation effect of inattention and bedtime procrastination. Personality and Individual Differences, (), 110460–. doi: 10.1016/j.paid.2020.110460*
- Volkmer, Sara & Lerner, Eva. (2019). Unhappy and addicted to your phone? – Higher mobile phone use is associated with lower well-being. *Computers in Human Behavior. 93. 210-218. 10.1016/j.chb.2018.12.015.*
- You, Z., Mei, W., Ye, N., Zhang, L., & Andrasik, F. (2021). Mediating effects of rumination and bedtime procrastination on the relationship between Internet addiction and poor sleep quality, *Journal of Behavioral Addictions, 9(4), 1002-1010.*

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Conflict of Interest

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