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Smart Phone Addiction Alexithymia and Subjective Well-being in University Students

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Abstract

The objective of this study was to investigate the relationship between smartphone addiction, alexithymia, and subjective well-being among university students. Specifically, it was aimed to examine how smartphone addiction may contribute to the development of alexithymic traits and the subsequent impact on students' overall well-being. In a convenient sample of 122 males and 178 female university students (N = 300), age range 18 to 30 (M = 23.63, SD = 3.50) years, collected from various universities of Rawalpindi and Islamabad, a cross-sectional research design was applied, and all participants were asked to complete the Smartphone Addiction Scale-Short Version (SAS-SV) which measured smartphone addiction, Toronto Alexithymia Scale-20 (TAS-20) which measured alexithymia with its three subscales i.e., Difficulty Identifying Feelings (DIF), Difficulty Describing Feelings (DDF), and Externally-Oriented Thinking (EOT), and Subjective Happiness Scale (SHS) that assessed subjective happiness in the participants. The results showed a significant positive correlation ($r = .38$, $p < .001$) between smartphone addiction and alexithymia, primarily driven by a strong association ($r = .61$, $p < .001$) between smartphone addiction and difficulty in identifying feelings (DIF). However, other correlations between SAS-SV and DDF or EOT were not significant. This smartphone addiction accounted for 14% of the variance in alexithymia but did not explain a decrease in subjective happiness. Men (M = 18.35, SD = 5.09) reported higher levels of happiness compared to women (M = 16.34, SD = 5.50). In this study, smartphone addiction affected alexithymia in young adults but not their subjective happiness.

Keywords: smart phone addiction, alexithymia, subjective happiness, Difficulty Identifying Feelings, DIF, Difficulty Describing Feelings DDF, Externally-Oriented Thinking, EOT

Smartphones offer a wide range of functions that include communication, information processing, commerce, education, and entertainment (Serra et al., 2021). Since so many functions are in the palm of our hands, these conveniences make their use excessive in personal lives. People stay with their smartphones for hours communicating with others, getting entertained, or doing serious educational or commercial work. Excessive use of smartphones has raised concerns for users, family members and various professionals who think that excessive use of smartphones could end up as a form of behavioral addiction (Elkholy et al., 2020; Lee & Lee, 2017). This could compromise mental health (Yehuda & Weinstein, 2021) shadowing conveniences by health drawbacks in people (Demirci et al., 2015). Smartphone addiction (SA), a non-substance use addiction, is highlighted by symptoms that include user venerability and *craving* towards these devices (Berardis et al., 2007). Being addicted to smartphones comes with the "inability to express, describe, or distinguish among one's emotions (APA, 2015) or alexithymia," observed in many young adults (Haug et al., 2015).

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Studies therefore report, a positive and a significant association between SA and alexithymia (Xiao et al., 2021). People with alexithymia cling to their smartphones and escape their emotional and social needs (Hao et al., 2020). Alexithymia is a risk factor that can heighten craving for smartphones because it lets users evade expressing, describing or distinguishing emotions (Marchetti et al., 2019).

Adults that are prone to smartphone addiction, struggle to identify and express their emotions or suffer from alexithymia (Duke & Montag, 2017). Excessive use of smartphones, not just for work and personal time (Samaha & Hawi, 2016) can disengage people from emotional commitment or to dissipate emotional experiences and expression (Upadyaya et al., 2017). This *compensatory internet use* (Kardefelt-Winther, 2019) serves as a mechanism behind alexithymia. Lumley and Roby (1995) provide evidence for this by reporting, people with high alexithymia form addictive behaviors easily, especially drug addiction. But those that can discriminate between, comprehend, and regulate their emotions, are better at controlling their addictive behaviors (Parker et al., 2011). Excessive smartphone use, thus, enhances escape and concealment of true emotions, and mitigates negative life situations and boosts negative emotions. So, those that are addicted to smartphones have a strong desire to use them to avoid appropriate emotional handling that cycles this addiction and distracts users from real world issues.

Horwood and Anglim (2017) report problematic smartphone use and lower psychological well-being among university students is connected; a connection that gets stronger with weak locus of control, greater social anxiety, increased materialism, and the need for touch (Lee et al., 2018). A study in Taiwan reported excessive use of smartphone in students increased stress and reduced time for face-to-face social interactions and impoverished psychological well-being (Lin et al, 2019). Problematic smartphone use affects mental health in college students in the United States, a study that found higher SA was associated with increased symptoms of anxiety and depression mediated by poor sleep quality, disrupted sleep patterns, and deterioration of psychological well-being (Elkholy et al., 2020).

Rationale

The increasing prevalence of smartphone use among university students has raised concerns about its potential psychological and emotional consequences. Smartphone addiction, characterized by excessive and compulsive use, may interfere with students' ability to identify and express emotions, leading to alexithymia—a condition marked by difficulties in recognizing and describing feelings. This emotional disconnect could negatively impact subjective well-being, reducing overall happiness and life satisfaction. Additionally, the easy availability of entertainment—such as games, videos, and music—makes smartphones a convenient tool for escaping stress, boredom, or difficult emotions, which can foster addictive behaviors. The instant rewards from notifications, likes, and messages further reinforce this behavior, creating a habit loop that is challenging to break. In some cultures, or social settings, expressing emotions may be discouraged, leading individuals to suppress or ignore their feelings. Over time, this suppression can contribute to the development of alexithymic traits, where people struggle to identify and express their emotions. Additionally, exposure to chronic stress, trauma, or adverse life experiences can impair emotional processing, causing alexithymia to develop as a coping mechanism (Horwood & Anglim, 2017). Given the critical developmental stage of university students, understanding the interplay between smartphone addiction, alexithymia, and subjective well-being is essential. This study was designed to explore these relationships, providing insights that could inform interventions aimed at improving emotional health and well-being in this population.

Table 1

Demographic Characteristics of the Sample(N=300)[1]

Variable	*n* (%)
Gender	
Male	122 (40.7)
Female	178 (59.3)
Education	
Undergraduate	123 (41.00)
Graduate	177 (59.00)
Marital status	
Single	253 (84.30)
Married	47 (15.70)

[1]Age range of the sample: 18-30 years

Method

Participants

A sample of 122 (40.6%) males and 178 (59.4%) female university students (N = 300) participated in this study. The purposive sampling technique was used to approach participants. It was collected by using the survey monkey. Particiapnts ranged in age from 18 to 30 (M = 23.63, SD = 3.50) years. Over half (n = 177) of the sample was graduate students and less than half were 123 (41.00%) were undergraduate students. Most of them were unmarried (n = 253) and a small number 47 (15.70%), married (see Table 1 below). Study included those students that spent more than 8 hours on the phone, children, younger teens and adults over 30 years were excluded from the study.

Instrument

Smartphone Addiction Scale-Short Version (SAS-SV)

Developed by Kwon et al. (2013) SAS-SV is a single dimension shorter scale (10 items) of the original Smartphone Addiction Scale with 33 items. The short version scale measures smartphone addiction, a form of behavioral addiction (Lee & Lee, 2017) on a 6-point Likert scale, where each item can be responded on an agreement scale that ranges from 1 (*Strongly agree*) to 6 (*Strongly disagree*). Composite scores range from 10-60 points, where average score (M = 25.26; SD = 10.78) or lesser represent no addiction and higher than this represents greater SA (Kwon et al., 2013). Internal consistency (Cronbach's α = .91) of SAS-SV established by the authors (Kwon et al., 2013) was strong, and so were concurrent validities (r = .96/.76) in two studies. The examples of items are; "Missing planned work due to smartphone use", using my smartphone longer than I had intended'.

Toronto Alexithymia Scale-20 (TAS-20)

Developed by Bagby et al. (1994) TAS-20 is a self-report scale with 20 items (5 items reversed scored) were used to assess people with alexithymia that have difficulty in recognizing and expressing their emotions and are unable to identify their emotional experiences. Divided into three subscales, Difficulty Identifying Feelings (DIF, 7 items, Score range: 7-35), Difficulty Describing Feelings (DDF, 5 items, Score range 5-25) and Externally-Oriented Thinking (EOT, 8 items, score range: 8-40) each item is measured on a 5-point Likert scale, scored from 1 (*Strong disagreement*) to 5 (*Strong agreement*). The composite score range of TAS-20 is between 20-100 with scores between 52-60 as *possible alexithymia* and 61+ *alexithymia present*. The authors (Bagby et al., 1994) reported acceptable internal consistency (Cronbach's α = .81) for TAS-20 with lower internal consistencies for the three subscales (DIF, α = .78; DDF, α = .75; EOT, α = .66). The examples of items are "I don't know what's going inside me, "I hard to decide how I feel about people" etc. The authors also report good test-retest reliability (r = .77) of the TAS-20 using 72 students, over two occasions three weeks apart.

Subjective Happiness Scale (SHS)

Lyubomirsky and Lepper (1999) developed SHS, a 4-item self-report instrument to gauge general happiness. Each item is measured on a 7-point Likert scale that measures strength of happiness from 1 (low level of happiness) to 7 (high level of happiness); item 4 is reversed scored. Composite scores range from 4-28, where scores under 5.6 indicate that a person is not

as happy than the average person, and a score of 5.6 indicates average happiness (Lyubomirsky & Lepper, 1999). The internal consistency (Cronbach's α = .51) of the SHS is moderate. The convergent validity of the SHS was tested with measures of happiness and well-being which revealed a substantial correlation range from .56 to .72 (Lyubomirsky & lepper, 1999).

Procedure

Departmental Research Advisory Committee approved the study and issued a no objection certificate (NOC) to collect data from the desired population at local universities. University departments were debriefed about the study and students were briefly told about the study i.e., the role of excessive use of smartphone and its association with alexithymia and subjective happiness. All participants gave their verbal consent before they completed the above scales and demographic questions on Google Forms. At the competition of the scales a short debriefing about the study was provided followed by a *thank you* for participating in the study. Participants were told they could discontinue the study any time without incurring any penalty and were told that their personal and data information would be kept confidential and anonymous. And if they had any questions at the end of completing the scales they could email or text for clarifications. For most participants it took 10-15 minutes to complete the scales. The analysis of data was done on SPSS version 25 (IBM, 2017).

Results

Since there was no missing data, and the data was normally distributed descriptive and inferential analyses could be carried out. The interpretation of the results indicates that the internal consistency for the Smartphone Addiction Scale-Short Version (SAS-SV), Toronto Alexithymia Scale (TAS-20), and its subscale Difficulty Identifying Feelings (DIF) is adequate to good. However, the internal consistency for the subscales Difficulty Describing Feelings (DDF) and Externally-Oriented Thinking (EOT), as well as the Subjective Happiness Scale (SHS), is lower, likely due to the fewer items in these measures.

Table 2

Descriptive Statistics, Internal Consistencies and Intercorrelation among Scales and Subscales (N=300)

Scale &			Range								
Subscale	M (SD)	*k*	Potential	Actual	α	SAS-SV	TAS-20	DIF	DDF	EOT	SWS
SAS-SV	37.00 (9.90)	10	10-60	13-57	.83	-	.38**	.61**	.11	.03	-.05
TAS-20	64.50 (10.00)	20	20-100	27-94	.80		-	.08	.07	.07	-.11
DIF	35.08 (10.73)	7	7-35	4-32	.79			-	.51**	.39**	.08
DDF	31.90 (5.63)	5	5-25	5-23	.67				-	.48**	.07
EOT	51.89 (7.07)	8	8-40	11-33	.67					-	.06
SHS	17.10 (4.20)	4	4-28	6-27	.52						-

Note: *M* = Mean, *SD* = Standard deviation, *k* = number of items, SAS-SV = Smart Phone Addiction-Short Version, TAS-20 = Toronto Alexithymia Scale-20, DIF = Difficulty Identifying Feelings, DDF = Difficulty Describing Feelings, EOT = Externally-Oriented Thinking, SHS = Subjective Happiness Scale

**$p < .01$

Participants, on average, exhibited mild levels of smartphone addiction, alexithymia, and subjective happiness. A significant positive relationship was found between smartphone addiction and alexithymia, driven mainly by the strong correlation between smartphone addiction and difficulty in identifying feelings (DIF). The other subscales of alexithymia (DDF and EOT) did not show significant correlations with smartphone addiction, nor did smartphone addiction correlate significantly with subjective happiness. Additionally, moderate inter-correlations were observed among the TAS-20 subscales, particularly between DIF and DDF, and DIF and EOT, suggesting that difficulties in emotional identification and description are related to an external experience. Mean SA in women (*M* = 37.75, *SD* = 9.40) was greater than men (*M* = 35.87, *SD* = 10.70), but not significant ($p > .05$); alexithymia in women (*M* = 64.50, *SD* = 10.00) was essentially equal to men (*M* = 64.50, *SD* = 11.30) and not different ($p < .05$). However, women significantly *t* (298) = -3.19, $p < .05$ scored higher (*M* = 18.35, *SD* = 5.09) than men (*M* = 16.34, *SD* = 5.55) on DIF subscale, which partly rejected our hypothesis, that men had higher alexithymia than women. Both men (*M* = 16.13, *SD* = 2.90) and women (*M* = 16.15, *SD* = 3.30) were similar and not different ($p > .05$) on DDF subscale; and men (*M* = 27.67, *SD* = 4.41) and women (*M* = 27.64, *SD* = 3.70) were not different ($p > .05$) on EOT subscale. Subjective happiness in men (*M* = 18.06, *SD* = 4.50) was significantly [$t(224) = 2.04$, $p < .05$] higher than women (*M* = 16.80, *SD* = 3.90) rejecting our second hypothesis.

Table 3

Regression Analysis showing the influence of SA on Alexithymia and Subjective Happiness (N=300)

	Smartphone Addiction (SAS-SV)			
Scale	*B*	*SE*	*t*	*p*
Alexithymia (TAS-20)	.42	.05	7.23	.000
R^2	.14			
F	52.31**			
Subjective Happiness (SHS)	-.02	.02	-.84	.39
R^2	.00			
F	.71			

Note. B = Standardized beta, SE = Standard Error, SAS-SV =Smart Phone Addiction-Short Version scale, TAS-20 = Toronto Alexithymia Scale-20, SHA = Subjective Happiness Scale

**$p < .01$

The standardized beta coefficient (B = .42) indicated a moderate positive relationship between SA and alexithymia or in other words SA increased alexithymia supporting our main hypothesis. This relationship was significant (t = 5.80, p < .001) and accounted for 14% of the variance in alexithymia explained by SA. A very weak (B = -.02) relationship between SA and subjective happiness and was not significant (p > .05) leading us to retain null hypothesis, SA does not account for a decrease in subjective happiness.

Discussion

This study aimed to explore the relationship between smartphone addiction, alexithymia, and subjective well-being among university students. The findings indicate several noteworthy patterns that contribute to our understanding of these constructs and their interrelations in a young adult population. A significant positive relationship between smartphone addiction and alexithymia was observed, with smartphone addiction explaining 14% of the variance in alexithymia. This finding aligns with previous research suggesting that excessive smartphone use may contribute to difficulties in emotional processing, particularly in identifying feelings (DIF). The strongest correlation was found between smartphone addiction and the DIF subscale of the Toronto Alexithymia Scale (TAS-20), indicating that individuals who are more addicted to smartphones may struggle significantly with recognizing and identifying their emotions. This relationship is crucial, as it suggests that smartphone addiction may not only serve as a distraction from emotional awareness but may also exacerbate or contribute to emotional dysregulation (Huang et al, 2019). Interestingly, the other subscales of alexithymia, Difficulty Describing Feelings (DDF) and Externally-Oriented Thinking (EOT), did not show significant correlations with smartphone addiction. This could imply that while smartphone addiction primarily disrupts the identification of emotions, it may not significantly affect one's ability to describe emotions or the tendency to focus on external rather than internal experiences (Mendia et al, 2024). These findings emphasize the need for targeted interventions addressing emotional awareness in individuals with high levels of smartphone addiction

Contrary to our initial hypothesis, smartphone addiction did not significantly correlate with subjective happiness. The weak relationship observed (B = -.02) suggests that while smartphone addiction is linked to emotional dysregulation, it does not necessarily lead to a decrease in overall happiness. This finding could be interpreted in several ways. It is possible that the immediate gratification and social connectivity provided by smartphones may offset some negative emotions, maintaining a sense of happiness despite underlying emotional difficulties (Boumosleh & Jaalouk, 2017; (Elkholy et al., 2020). Alternatively, the absence of a strong relationship may indicate that other factors, such as social support, academic stress, or personality traits, play a more critical role in determining subjective happiness among university students (Tweng, 2018).

Our results also revealed men were significantly happier than women, a result that was aligned with another Pakistani study with the same outcome (Rehman et al., 2018). This result runs counter to other data that have compared women and men in the world; in a Gallup World Poll surveys of 167 countries including Pakistan, between 2005 and 2021, women rated themselves happier to men (Montgomery, 2002) despite a higher burden of psychological disorders, women are more likely to report being happy (Chen et al., 2013; Maharlouei et al., 2020). We can only speculate about this result; perhaps men are happier in our sample because they use their phones to play games, watch movies, listen to music along with personal communication (Field, 2020), and women use smartphones primarily for social networking and personal communication to make their lives more meaningful (Brakus et al., 2022). It is possible that in our study, women despite using smartphones could not bring meaningfulness in their lives and were less happy than men.

Conclusion

This study highlights a significant positive relationship between smartphone addiction and alexithymia, specifically in difficulty identifying feelings, among university students. However, smartphone addiction did not significantly impact subjective happiness. The findings suggest that while smartphone addiction may influence emotional processing, it does not necessarily reduce overall well-being in this population.

Limitations and Recommendations

The main limitation of this study lies in its relatively small sample size, which may limit the generalizability of the results. A larger sample would reduce data variability and offer a more robust connection between smartphone addiction, alexithymia, and subjective happiness. Additionally, the sample was exclusively drawn from the metropolitan areas of Rawalpindi and Islamabad, where smartphone usage is higher compared to rural areas, where simpler mobile phones are more common. Future research could examine the role of different smartphone types in addiction, alexithymia, and happiness. Furthermore, exploring the impact of various career types (e.g., professionals vs. homemakers) may yield further insights into how smartphone addiction affects emotional processing and well-being. Finally, while this study indicates that smartphone addiction may impair emotional recognition and expression, leading to decreased happiness, this effect might be more pronounced in women. Clinicians can use these findings to design targeted interventions aimed at enhancing emotional and psychological health in young adults with alexithymia.

Implications

University programs should integrate strategies to tackle smartphone addiction and enhance emotional awareness to prevent the onset of alexithymic traits. Mental health professionals should assess alexithymia when

working with individuals struggling with smartphone addiction, as difficulties in recognizing and articulating emotions may worsen emotional regulation challenges. Additional research is required to investigate the long-term impacts of smartphone addiction on well-being and to identify effective interventions that address both addictive behaviors and emotional processing difficulties.

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