

# Alexithymia and its Association with Smartphone Addiction and Physical Activity in University Students of Islamabad

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## ABSTRACT

**Objective:** Determine the prevalence of alexithymia and its relationship with smartphone addiction and physical activity among university students of Islamabad.

**Methods:** In this cross sectional study, a 20 item Toronto Alexithymia Scale (TAS-20), Smartphone Addiction Scale-Long version (SAS-LV), and International Physical Activity Questionnaire-Short form (IPAQ-SF) were administered to 377 students from 6 universities of Islamabad using convenient sampling technique and the data was analyzed through statistical package for social sciences 26.

**Results:** Alexithymia was present in 29.7% of university students and it was positively correlated with smartphone addiction but not significantly associated with physical activity. The two factors in the subscales of alexithymia DIF and DDF were positively correlated with smartphone addiction whereas EOT was not significantly correlated. Moreover, other sociodemographic variables showed a positive relationship with alexithymia: age, gender, satisfaction with life and residential status.

**Practical implications:** This study would increase the awareness about alexithymia and its associated factors in the local community which would further steer direction to seek help from healthcare practitioners.

**Conclusion:** More than 1/4th of the university students were suffering from alexithymia and the score of alexithymia increased with level of smartphone addiction.

**Keywords:** Alexithymia, University students, Islamabad, Smartphone Addiction Scale-Long version, International Physical activity questionnaire.

## INTRODUCTION

Alexithymia was first introduced by a psychotherapist "Peter E. Sifneos" in 1973, characterized as a personality trait comprised of three components including: Difficulty Identifying Feelings, Difficulty Describing Feeling and Externally Oriented Thinking style, along with a decreased cognitive ability to understand and verbalize emotions of oneself and of others<sup>(1)</sup>. Studies suggest alexithymia to be 17- 18% in West, 22 % in Middle East and 33% in Pakistan<sup>(1-4)</sup>. In the context of accurate etiology of alexithymia a scientific gap exists in literature but in the past literature has linked it with autism, depression, post-traumatic stress disorder, childhood sexual abuse, traumatic brain injury, type 2 diabetes as well as with certain addictive behaviors including smartphone addiction<sup>(5-10)</sup>.

University students face a tremendous mental workload in the form of assignments, projects, presentations which increases their screen time activities and becoming less physically active. WHO describes addiction as "dependence syndrome", the ceaseless use of something for the sake of relief or stimulation with its absence causing cravings, similarly smartphone addiction is broadly categorized under behavioral addiction with excessive use of smartphones to a level where it interferes with the day to day routines of an individual disabling his physical, psychological and social capacity. Smartphone addiction is categorized as high risk factor for students, in Pakistan the prevalence of smartphone addiction was concluded high in a study held in Twin cities and out of 702 adolescents 422 (60%) had smartphone addiction, it has also been associated with decreased interaction between students and connection with the classroom, academic performance, poor sleeping habits, thumb pain and cyber bullying<sup>(11-13)</sup>.

As per the definition of World Health Organization (WHO), physical activity is any movement of the body, during leisure or work time, causing energy usage and resultantly with other health benefits it also improves thinking and judgment skills of an individual. Despite the set recommended criteria of physical activity by World Health Organization, globally 1 out of 4 young adults are not meeting the recommended criteria of physical activity. Regarding the association of mental health and physical activity, a

meta-analysis suggested physical activity with strongest evidence for causal association with cognitive functioning, and to lesser extent with anxiety, depression, and self-esteem<sup>(14)</sup>.

The current study investigates the association of alexithymia with smartphone addiction with physical activity and fills the evidence gap regarding the link of alexithymia in university students with physical activity using the diagnostic criteria of International physical activity questionnaire. Till now, no study has investigated the link of alexithymia with smartphone addiction and physical activity using the exclusion criteria mentioned in this study. Therefore, the purpose of this study is to increase awareness about alexithymia and the associated factors to seek help from healthcare practitioners.

## SUBJECTS AND METHODS

After approval from Ethics Committee of Shifa Clinical Research, the analytical study was conducted on university students of Islamabad from July 2021 to January 2022. The sample was raised using convenient sampling technique and the sample size of 377 was calculated through Rao software using 95% confidence interval. The participants included were undergraduate university students from 18 to 25 years of age with smartphone access. Those with history of traumatic brain injury, childhood sexual abuse, post-traumatic stress disorder, diagnosed clinical depression, autism or type2-diabetes were excluded from the study and undergraduate university students from 18 to 25 years of age with smartphone access were enrolled in the study. The primary objective of the study was to find the frequency of alexithymia and to find its association with smartphone addiction and physical activity.

The participants filled informed consent and a socio demographic form and 20 items Toronto alexithymia scale along with 33 items Smartphone addiction scale and 7 items International physical activity questionnaire. After retrieving data from all the respondents SPSS 26 software was used to perform statistical analysis which included descriptive statics, Pearson co-relation, and chi-square test to interpret the set parameters and justify the research hypothesis.

**RESULTS**

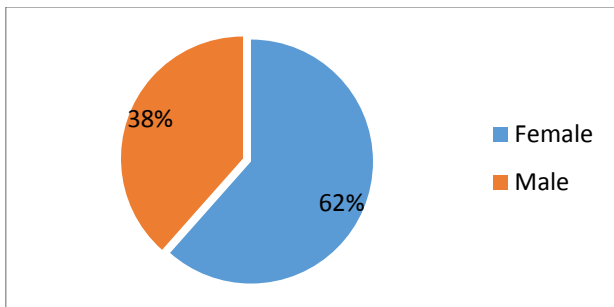


Figure 1: Pie chart representation of gender distribution

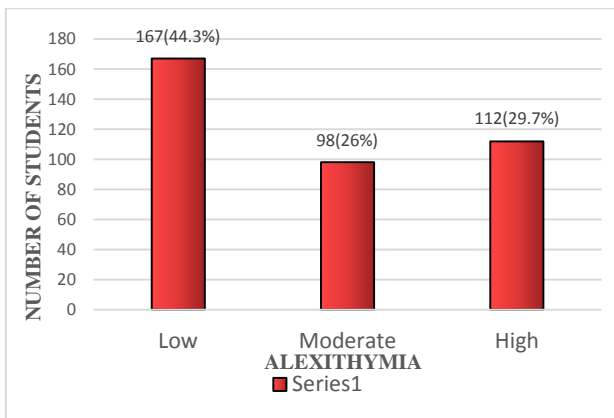


Figure 2: Bar chart representation of levels of Alexithymia

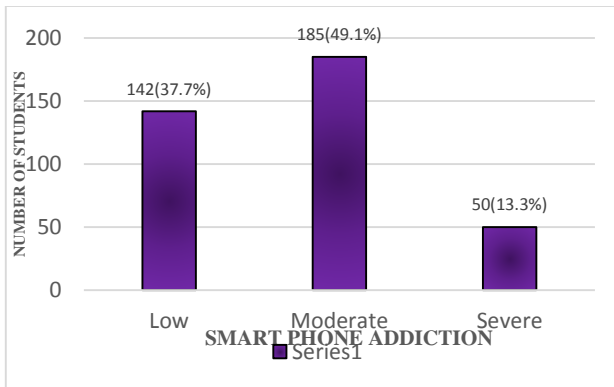


Figure 3: Bar chart representation of smartphone addiction.

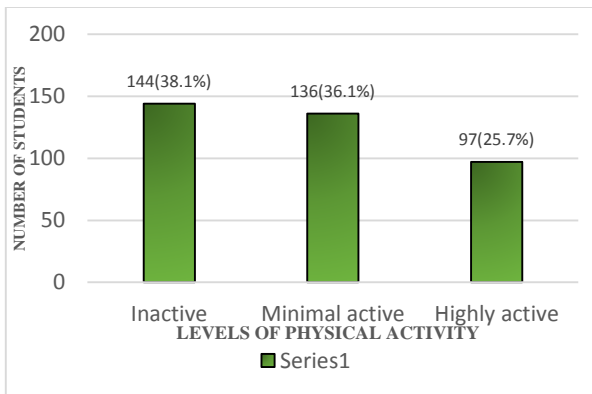


Figure 4: Bar chart representation of levels of physical activity

Table1: Mean and standard deviation for alexithymia (TAS-20), smartphone addiction (SAS), and physical activity (IPAQ) in both genders.

Variable	Range	Total Mean	Female Mean	Male Mean
TAS-20 (Score)	22-84	53.90±0.5	55.46±12.12	51.58±10.85
SAS (Score)	33-198	102.11±33.68	102.91±33.26	100.80±33.04
IPAQ (METS)	0-16506	2171.97±2603.95	1845.82±2385.22	2697.45±2853.09

Table2: Relationship of alexithymia with Smart phone addiction and Physical activity.

Variables	P
Smartphone addiction	0.00(<0.01) (r=0.42*)
Physical activity	-0.43(>0.01) (r=-0.05)

Table3: Relationship between subscales of alexithymia and smartphone addiction.

Variable	r	P
Difficulty identifying feelings	0.424**	.00 (<.01)
Difficulty describing feelings	0.338**	.00 (<.01)
Externally oriented thinking	0.012	0.81 (>.01)

Table4: Relationship of alexithymia with sociodemographic variables

Variables	P
Satisfaction with life	0.00(<0.01)
Gender	0.00(<0.01)
Age	0.05(≤ 0.05)
Residential status	0.02(≤ 0.05)
Year of degree program	0.77(≤0.05)
GPA	0.66(≤0.05)
BMI	0.27(≤0.05)
Educational institution	0.27(≤0.05)

As shown in Figure 1 out of 377 students 232 (61.54%) were females and 145 (38.5%) were males. The prevalence of alexithymia in university students on Toronto Alexithymia scale was 167 (44.3%) for low alexithymia, 98 (26%) for moderate alexithymia and 112 (29.7%) for high alexithymia as mentioned in Figure 2. Furthermore, the level of smartphone addiction was 142 (37.7%), 185 (49.1%), and 50 (13.3%) for low, moderate and severe smartphone addiction respectively. (Figure 3) As shown above in Figure 4 Physical inactive students were 144 (38%), minimal active were 136 (36.1%) and highly active were 97(25.7%).

The mean and standard deviation of alexithymia, smartphone addiction and physical activity is shown in Table 1. In Table 2 Pearson correlation test showed alexithymia is associated positively with smartphone addiction but it is not associated with physical activity. Table 3 shows smartphone addiction is also associated with alexithymia 2 subscales i.e. difficulty in identifying feelings and difficulty in describing feelings and according to Table 4 Chi square test shows the association of alexithymia with sociodemographic variables.

**DISCUSSION**

The present study addressed the prevalence and associated factors with alexithymia in university students of Islamabad. In our study the prevalence of alexithymia among university students for the total sample was 29.7% and these results were higher than most of the previous studies i.e. 14% alexithymia in students of Greek university, 21.2% in university students of Istanbul, 30.2% in university students of kingdom Saudi Arabia, 33% among undergraduates of Baluchistan University (4, 15-17). Contrary to past studies alexithymia score was higher in females than males in this study and the results were consistent with some previous studies (3, 18, 19).

The present study reveals that alexithymia was associated with smartphone addiction. These findings were consistent with prior researches that found alexithymia is linked to smartphone addiction. A study was done on young adults to find relationship between alexithymia and technology addiction and results showed that technology addiction (smartphone addiction, internet addiction, problematic internet use) is associated with alexithymia (20). Also, this study found no association of alexithymia with physical activity and these results were similar to Jordanian university students, King Abdul-Aziz University students, Alexithymia in type 1 diabetes mellitus patients, and alexithymia relation with intensive training in athletes (3, 21-23). Some studies reported that alexithymia was associated with physical activity (10, 24). Those studies on university

students done in past didn't use IPAQ to measure the physical activity of students rather than they used physical activity in demographics as a lifestyle factor.

There are few limitations in our study which affected the generalizability of the results. Firstly, the cross-sectional study design is not sufficient to predict a causal relationship. Secondly, the participants were conveniently selected. Thirdly, due to pandemic the data was collected through E-distribution of questionnaires. Fourthly, the area of the current study was restricted within Islamabad.

## CONCLUSION

It was concluded that there is an association between smartphone addiction and alexithymia and no association between alexithymia and levels of physical activity in university students of Islamabad.

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