JDSS Journal of Development and Social Sciences
www.jdss.org.pk

RESEARCH PAPER

Assessing the Role of Sports Participation as Protecting Factor against Tiktok Addiction among University Students

¹Asad Ali   ² Dr. Asif Ali*

1. Student of M.Sc. Physical Education & Sports Sciences at Government College University Lahore, Punjab, Pakistan
2. Associate Professor, Head of Department of Physical Education & Sports Sciences Government College University Lahore, Punjab, Pakistan

| ***Corresponding Author:** | asif.ali@gcu.educ.pk |

ABSTRACT

This study investigated the relationship between Sports participation and Tiktok addiction among early adults at the university level. A cross-sectional survey was conducted, involving 165 university student-athletes and 165 university students-non-athletes from five universities. International Physical Activity Questionnaire short version, Bergen's Social Media Addiction Scale and demographic variables were used for data collection. Independent samples T-test analysis revealed that the mean Tiktok addiction score for non-athletes was significantly higher than that of their athletes' counterparts. The results suggested that sports participation can help to reduce Tiktok addiction among university students. It further likely to suggest that interventions focusing on enhancing sports participation may serve as protecting factor against addictive behavior related to social media such as Tiktok addiction in early adults studying in universities.

| **KEYWORDS** | Early Adults, Social Media, Sports Participation, Tiktok Addiction, University Student |

Introduction

The beginning of the digital age has revolutionized numerous dimensions of our daily existence, encompassing communication, entertainment and interpersonal connections (Özdemir, 2019). Social media platforms, such as Tiktok has gained immense popularity, providing users with opportunities for self-expression, entertainment and connection with others. However, concerns have emerged regarding the addictive nature of Tiktok and its potential impact on psychological health of the youth and their engagement in sports participation (Muzaffar, Yaseen. Safdar, 2020).

Tiktok, a social media app was introduced in china in 2016 and within a short time period, Tiktok has surpassed the monthly installations of Facebook, Instagram, YouTube and Snapchat on the app stores. With a staggering user based of 500 million worldwide, including 6 million downloads in the United States alone, Tiktok has emerged as a highly popular social media platform that offers a wide array of options for content creators, solidifying its influence (Jaffar, Riaz, & Mushtaq, 2019; Muzaffar, Chohdhry, & Afzal, 2019).

Addictive behaviors related to technology have received significant attention in recent years among youth, in order to use social media smart phones become the easy and dominant way. According to a research study, individuals who were addicted to Smartphone may experience anxiety, stress, depression and difficulties with sleep (Azam, Ali, Mattiullah, & Perveen, 2020). Conversely, engaging in an active lifestyle and participating in sports have been shown to potentially alleviate anxiety, stress, depression, and enhance sleep quality, mood, and self-esteem. Another study conducted by Azam and Mattiullah (2019) reported the influences of internet addiction among university students. The findings revealed that the negative association between sports participation and internet addiction. This suggested that the sports participation can serve as preventive measure to treat the internet addiction in youth studying at universities. Social media a form of electronic media impacted negatively on youth in a study by Kwok, Leung, Poon, and Fung (2021) revealed that

significant inverse relationship between sports participation and social media addiction among university students. Participants who reported higher levels of sports participation exhibited lower levels of social media addiction. Tiktok addiction, as a specific form of social media addiction, can characterized by addiction of the platform, leading to neglect of other important responsibilities and obligations (Kuss & Griffiths, 2017). Individuals addicted to Tiktok may experience restlessness, irritability anxiety and an intense urged to use the app. These studies showed the effects of electronic media on youth in university settings.

Understanding the prevalence of Tiktok addiction recent studies have indicated concerning levels related to social media platforms. According to a study it was found that 17.4% of the university students in their sample met the criteria for social media addiction. This addiction may encompass various platforms, including Tiktok (Lin, Broström, Griffiths, & Pakpour, 2020). Similarly, another study conducted by Montag, Becker, and Gan (2018) found that approximately 21% of their participants exhibited addictive behaviors related to social media addiction. In a study conducted by Husin, Khairi, Nazeri, and Mariyanti (2022) demonstrated a significant correlation between Tiktok addiction and various factors such as social influences, family dynamics and lifestyle choices. The findings revealed that approximately 63.4% of university students displayed addictive behaviors towards Tiktok. Notably, among these factors, social influences emerged as the primary contributor to tiktok addiction in university students.

The consequences of Tiktok addiction may affect various aspects of university students. Tiktok addiction may lead to neglect of academic or work-related responsibilities, strained relationships, decreased productivity and compromised mental and physical health (Liu, 2020). Additionally, a study by Smith and Short (2022) highlighted the presence of certain similarities in the addictive patterns observed in both Facebook and Tiktok such as loneliness, nudity and effects on academic performance. Another study performed by Amin, Iftikhar, and Meer (2022) showed significant association among Tiktok addiction and mental illness among university youth which leads to depression and anxiety as well as the poor academic performance. In a study conducted by Zahra, Qazi, Ali, Hayat, and ul Hassan (2022) it was found that TikTok addiction has a detrimental impact on the mental health of university students. The results of the study emphasized the importance of raising awareness among students about the potential harm associated with TikTok addiction. It is crucial to encourage students to limit their TikTok usage and prioritize their academic pursuits to safeguard their well-being.

In contrast, participation in sports fosters social interaction, teamwork and the development of supportive relationships, fulfilling social needs and reducing reliance on virtual social connections provided by Tiktok (Ye et al., 2023). The structured schedules and time commitment examined by (Escamilla-Fajardo, Alguacil, & López-Carril, 2021) was associated with sports participation may prevent them from the addictive behaviors of the app while their main focus will be to enhance their sports performance or field performance. Additionally, involvement in sports encouraged the adoption of a healthy lifestyle, including physical fitness, exercise and proper time management, which may serve as protective factors against Tiktok addiction (L. Chen et al., 2016).

While previous studies had examined the impact of sports participation on various psychological variables, such as anxiety, stress and depression, there was a lack of research focusing specifically on the association between sports participation and Tiktok addiction. Therefore, this research gap highlighted the need for further investigation into the relationship between sports participation and Tiktok addiction, specifically targeting university-level early adults.

Based on the aforementioned arguments, it was indicated that anxiety, stress, depression and poor sleep could be psychopathological factors associated with Tiktok addiction. Conversely, adopting an active lifestyle and engaging in sports activities may

potentially aid in alleviating anxiety, stress, depression and enhancing sleep quality, mood and self-esteem. These observations suggested that sports participation may be linked to a reduced risk of developing Tiktok addiction (Yu et al., 2022) . These findings collectively support the idea that sports participation can serve as a protective measures against Tiktok addiction. Thus, this study involved to find out how sports participation was important to reduce Tiktok addiction among university students.

Literature Review

In a research the relationship between sports participation and addiction to various social media platforms, including Tiktok was examined, among adolescents. The results indicated that increased involvement in sports was linked to decreased levels of social media addiction, indicating a potential safeguarding effect of sports against addictive behaviors (Zhang, Feng, Peng, & Li, 2022). This was also demonstrated in another study conducted by Clark, Camiré, Wade, and Cairney (2015) that consistent engagement in sports was associated with a lower risk of developing addictive behaviors, including addiction to social media platforms. Another study was performed by Shimoga, Erlyana, and Rebello (2019)to investigate the association between sports participation and Tiktok addiction levels among university students. The findings revealed that higher levels of social media addiction were associated with lower level of sports participation engagement, indicated a potential negative relationship between these two variables. Moreover, Tiktok addiction was associated with decreased athletic participation in a study performed by Hudimova et al. (2021) suggested that Tiktok addiction may delay athletes' engagement in regular athletic participation. Similar findings were also emerged by recent studies as well (Allahverdi, 2022; Mendes, Leonido, & Morgado, 2023).

Material and Methods

Study Design

This research utilized cross-sectional design to examine the relationship between the variables which were sports participation and Tiktok addiction.

Population and sample size

This research study based on random sampling including 5 universities targeted for the data collection purpose. We got the total number of students 76000 with the help of the online sources. To determine an accurate sample size the Yamane Formula (Yamane, 1973) was applied on the total number of the students. Consequently, the application of the Yamane formula resulted in a calculated sample size of 330 university students. This sample size comprised 165 student-athletes and 165 non-athlete early adults, all within the age range of 18 to 25.

Participants Inclusion and Exclusion criteria

Inclusion Criteria: University-level students within the early adult age range (18-25 years old) who self-identify as either athletes engaged in organized sports or non-athletes not involved in organized sports. Both male and female students were included as athletes who were the part of the university/athletic sports team.

Exclusion Criteria: Individuals, who were not university-level students, fall outside the early adult age range, have significant physical or health conditions affecting athletic performance. Both male and female students were excluded who were not the part of the university/athletic sports team.

Data Collection Tools

The self-administered demographic section of the survey included various questions aimed at collecting demographic information from the participants such as age, gender, sports participation etc. To assess participants' physical activity levels in the last seven days, IPAQ short version developed by Craig et al. (2003) was employed. This instrument captured information regarding the types and duration of physical activities performed by the respondents. Bergen Social Media Addiction Scale (BSMAS) which was developed by Andreassen, Torsheim, Brunborg, and Pallesen (2012) was used to quantify Tiktok addiction level. The cutoff scores for the BSMAS vary depending on the study and the population being assessed. Different researchers have proposed various cutoff scores to classify individuals as non-addicted and addicted to social media. Andreassen et al. (2012) introduced the cutoff scores which was proposed in the original and various studies, non-Addiction ranged from 0-18 and Addiction ranged from 19-30. All items of the scale were scored on a Likert-type scale, typically ranging from 1 to 5, with response (ranging from "very rarely" to "very often").

Data Collection procedure

The data collection process involved approaching participants from five selected universities, comprising 13 departments and 18 university sports, provided them the research questionnaires. Prior to initiating the data collection, the purpose of the study was clearly explained to the participants, emphasizing the exploration of the relationship between sports participation and Tiktok addiction among early adults at the university level. The same data collection procedure was followed across all five universities, where participants were given approximately 20 minutes to complete the questionnaire. Ethical guidelines and regulations for research involving human participants were emphasized, assuring the participants that their input was voluntary, and they had the right to eliminate anytime. Confidentially and solitude were guaranteed, with collected data anonymized and reported in aggregate form to maintain individual confidentiality. Clear instructions were provided to participants, including specific guidelines for responding to each item of the questionnaire.

Data Analysis

Descriptive statistics and independent t-tests were employed to analyzed the data through SPSS version 22(IBM Corp, 2022) .The *p* value was set at .05 to determine the level of significance.

Results and Discussion

Table 1
Analysis of demographic variables

Variables	Non athlete		Athletes	
	Mean	*SD*	*Mean*	*SD*
Age	20.52	1.803	20.77	1.776
Night ST	3.09	2.785	2.05	1.958
Daily ST	4.16	2.361	3.12	2.079
Tiktok addiction sts	16.16	5.428	14.84	4.885

In terms of screen time, non-athletes had a higher night screen time (Night ST) of 3.09 hours (SD = 2.785), compared to athletes who had a lower mean of 2.05 hours (SD = 1.958). Similarly, non-athletes had a higher mean daily screen time (Daily ST) of 4.16 hours (SD = 2.361), whereas athletes reported a lower mean of 3.12 hours (SD = 2.079). The mean Tiktok addiction score was 16.16 for non-athletes, while athletes had a slightly lower mean score of 14.84. (See table 1 above).

The majority of participants were aged 19, 20, and 21, accounting for 19.4%, 21.2%, and 18.5% respectively. The least represented age groups were 24 and 25, with frequencies of 10 and 13, making up 3% and 3.9% respectively. (See table 1(a) below).

Table 2
Age frequency and percentage of participants

Variables	*f*	*%*
18	35	10.6
19	64	19.4
20	70	21.2
21	61	18.5
22	50	15.2
23	27	8.2
24	10	3
25	13	3.9

Table 3
Analysis of Gender frequency and percentage (male and female)

Variables	*f*	*%*
Male	145	43.9
Female	185	56.1

Among the participants, 56.1% were female, while 43.9% were male. With a higher proportion of females (185) than males (145). (See table 1(b) above).

Physical activity

Table 4
Analysis of physical activity (Athletes vs non-athletes)

	Non-Athletes		Athletes				
Variables	*M*	*SD*	*M*	*SD*	*t(328)*	*P*	*Cohen's d*
Activity level	1.65	0.719	2.25	0.815	-7.382	.000	0.780

The mean activity level for non-athletes was 1.65 (SD = 0.719), while the mean activity level for athletes was 2.25 (SD = 0.815). The t(328) value was -7.382. The obtained *p*-value of less than 0.001 suggested a statistically significant distinction in activity levels between individuals who were non-athletes and those who were athletes. (See table 2 above)

Sports participation and Tiktok addiction

The t-test analysis revealed that the mean of Tiktok addiction scale total score for non-athletes *(M = 16.16, SD = 5.428)* was found to be significantly higher than that of athletes *(M = 14.84, SD = 4.885), t (328) = 2.324, p = .021*. The small effect size, as measured by Cohen's d, indicated significant difference between the groups *(Cohen's d = 0.255)*. (See table 3 below)

Table 5
Analysis between athletes and non-athletes to investigate the addiction levels of Tiktok

	Non-Athletes		Athletes				
Variables	*M*	*SD*	*M*	*SD*	*t(328)*	*p*	*Cohen's d*
Tiktok addiction sts	16.16	5.428	14.84	4.885	2.324	.021	0.255
Tiktok category cos	1.36	.481	1.21	.410	2.957	.003	0.335

Note. **p < .01; sts; Scale Total Score; Category cut-off scores*

A statistically significant difference was found in the mean Tiktok Category cut-off scores between non-athletes (M = 1.36, SD = 0.481) and athletes (M = 1.21, SD = 0.410), t (328) = 2.957, p = .003. The effect size, as measured by Cohen's d, indicated a small yet significant difference between the two groups (Cohen's d = 0.335).

Discussion

Regarding Tiktok addiction, our study found that Sports participation was negatively associated with Tiktok addiction. This suggested that individuals who do not engaged in regular sports activities are more prone to developing addictive behaviors related to Tiktok addiction. These findings are in line with previous studies that have associated higher levels of social media addiction with decreased sports participation (Kuss & Griffiths, 2017; Rosen, Whaling, Rab, Carrier, & Cheever, 2013). The attraction of Tiktok, with its addictive content and endless scrolling features, may be particularly influential for individuals who do not participate in sports.

Furthermore, our results revealed significant differences in Tiktok addiction between non-athletes and athletes. Non-athletes exhibited addiction indicating a stronger inclination to set boundaries or limits to reduce their Tiktok addiction. On the other hand, athletes demonstrated lower addiction suggesting a greater tolerance for a wider range of Tiktok content. This distinction may be attributed to the fact that athletes often prioritized sports participation and training, resulting in less concern for setting strict limits on their tiktok addiction. These findings align with research that has identified variations in tiktok addictive behaviors across early adults groups (Al-Menayes, 2015; H. Chen, Zhang, Wang, Feng, & Li, 2022).

Importantly, the analysis exposed a small effect size (Cohen's d = 0.335), indicating a relationship between sports participation and Tiktok addiction. Despite the small effect size, the findings suggest that engaging in sports may have a mitigating effect on Tiktok addiction, highlighting the need for further research on this topic using diverse analytical approaches and larger population sizes. These results provide additional support for the significant role of athletic participation in influencing Tiktok addiction behaviors. Future research actions should investigate into the underlying appliances responsible for these differences, including the latent impact of factors such as social support, self-regulation, and engagement in sports module. By applying these changes we can reduce the value of Tiktok addiction among university-level early adults.

Overall, our study marked the worth of sports participation in minimization of Tiktok addiction behaviors. Inspiring regular sports engagement among university-level early adults may help as a possible strategy to moderate Tiktok addiction.

Conclusion

In conclusion, our study originated that participating in sports associated with lower levels of Tiktok addiction among university students specifically in early adults. Non-athletes were more disposed to Tiktok addiction, while athletes established lower addiction levels related to Tiktok. Although the effect size was small, our findings suggested that promoting sports engagement can serve as a protective factor against Tiktok addiction. These results highlighted the importance of considering sports participation as a preventive approach and provide insights for future research and interventions targeting addictive behaviors related to Tiktok and other social media firms.

Implications

The findings of this research have several implications for addressing Tiktok addiction and promoting healthier social media behaviors. The significantly higher Tiktok addiction scores among non-athletes compared to athletes suggest the need for targeted interventions tailored specifically for non-athletes. These interventions should focus on raising awareness about the risks of Tiktok addiction and providing strategies to reduce addictive behaviors. Additionally, incorporating sports participation components into intervention programs can help mitigate sedentary lifestyles associated with Tiktok addiction. Promoting awareness and education on setting healthy content boundaries can assist individuals in making informed decisions about Tiktok addiction. Overall, implementing these implications we can reduce Tiktok addiction with the help of sports participation.

Limitations and directions for the future research

Future research should investigate the relationship between sports participation and Tiktok addiction through longitudinal designs and objective measures of sports participation. Exploring additional variables like social support, self-regulation, and psychological factors can deepen our understanding. Interventions targeting non-athletes should be developed and evaluated to reduce addiction through emphasizing them about sports and providing them the ways to take part in competed sports. These research directions will inform evidence-based strategies to mitigate Tiktok addiction.

References

Al-Menayes, J. J. (2015). Dimensions of social media addiction among university students in Kuwait. *Psychology and Behavioral Sciences, 4*(1), 23-28.

Allahverdi, F. Z. (2022). Relationship between physical activity and perceived social media addiction and social media applications frequency usage among university students. *Psychology in the Schools, 59*(6), 1075-1087.

Amin, S., Iftikhar, A., & Meer, A. S. (2022). Intervening Effects of Academic Performance between TikTok Obsession and Psychological Wellbeing Challenges in University Students. *Online Media and Society, 3*, 244-255.

Andreassen, C. S., Torsheim, T., Brunborg, G. S., & Pallesen, S. (2012). Development of a Facebook addiction scale. *Psychological reports, 110*(2), 501-517.

Azam, M., Ali, A., Mattiullah, J., & Perveen, N. (2020). Physical activity, sports participation, and smartphone addiction in adolescent students: A systematic review. *Journal of Evidence-Based Psychotherapies, 20*(1), 25-41.

Azam, M., & Mattiullah, J. (2019). Relationship Of Sports Participation And Physical Activity With Internet Addiction; A Synthesis Of Evidence. *Shield: Research Journal of Physical Education & Sports Science, 14*(2), p119-152.

Chen, H., Zhang, G., Wang, Z., Feng, S., & Li, H. (2022). The associations between daytime physical activity, while-in-bed smartphone use, sleep delay, and sleep quality: A 24-h investigation among Chinese college students. *International journal of environmental research and public health, 19*(15), 9693.

Chen, L., Yan, Z., Tang, W., Yang, F., Xie, X., & He, J. (2016). Mobile phone addiction levels and negative emotions among Chinese young adults: The mediating role of interpersonal problems. *Computers in Human behavior, 55*, 856-866.

Clark, H. J., Camiré, M., Wade, T. J., & Cairney, J. (2015). Sport participation and its association with social and psychological factors known to predict substance use and abuse among youth: A scoping review of the literature. *Int Rev Sport Exerc Psychol, 8*(1), 224-250.

Craig, C. L., Marshall, A. L., Sjöström, M., Bauman, A. E., Booth, M. L., Ainsworth, B. E., . . . Sallis, J. F. (2003). International physical activity questionnaire: 12-country reliability and validity. *Medicine & science in sports & exercise, 35*(8), 1381-1395.

Escamilla-Fajardo, P., Alguacil, M., & López-Carril, S. (2021). Incorporating TikTok in higher education: Pedagogical perspectives from a corporal expression sport sciences course. *Journal of Hospitality, Leisure, Sport & Tourism Education, 28*(4), 100302.

Hudimova, A., Popovych, I., Savchuk, O., Liashko, V., Pyslar, A., & Hrys, A. (2021). Research On The Relationship Between Excessive Use Of Social Media And Young Athletes'physical Activity. *Journal of Physical Education and Sport,, 6*(21), 3364-3373. .

Husin, N. A., Khairi, M. S. H., Nazeri, N. S. M., & Mariyanti, E. (2022). Why University Students are addicted to Short Video TikTok?: A Malaysian Case. *Sociometry Journal of Social Science, Art and Humanity, 2*(2), 82-89.

IBM Corp, N. (2022). IBM SPSS statics for windows. In: IBM corp armonk, NY.

Jaffar, B. A., Riaz, S., & Mushtaq, A. (2019). Living in a moment: Impact of TicTok on influencing younger generation into micro-fame. *Journal of Content, Community and Communication, 10*(5), 187-194.

Kuss, D. J., & Griffiths, M. D. (2017). Social networking sites and addiction: Ten lessons learned. *International journal of environmental research and public health, 14*(3), 311.

Kwok, C., Leung, P. Y., Poon, K. Y., & Fung, X. C. (2021). The effects of internet gaming and social media use on physical activity, sleep, quality of life, and academic performance among university students in Hong Kong: A preliminary study. *Asian Journal of Social Health and Behavior, 4*(1), 36.

Lin, C.-Y., Broström, A., Griffiths, M. D., & Pakpour, A. H. (2020). Investigating mediated effects of fear of COVID-19 and COVID-19 misunderstanding in the association between problematic social media use, psychological distress, and insomnia. *Internet interventions, 21*, 100345.

Liu, Q., Zhang, D. J., Yang, J. H., Li, Q. R., & Cheng, X. (2020). Psychological consequences during the outbreak of COVID-19 pandemic in college students in China: A meta-analysis. Global Health, .

Mendes, L., Leonido, L., & Morgado, E. (2023). Correlation between Suicidal Ideation and Addiction to Various Social Media Platforms in a Sample of Young Adults: The Benefits of Physical Activity. *Societies, 13*(4), 82.

Montag, C., Becker, B., & Gan, C. (2018). The multipurpose application WeChat: a review on recent research. *Frontiers in psychology, 9*, 2247.

Muzaffar, M., Chohdhry, S., & Afzal, N. (2019). Social Media and Political Awareness in Pakistan: A Case Study of Youth, *Pakistan Social Sciences Review*, 3 (II), 1-13

Muzaffar, M., Yaseen. Z., Safdar, S. (2020). Role of Social Media in Political Campaigns in Pakistan: A Case of Study of 2018 Elections*, Journal of Political Studies, 27* (2), 141-151

Özdemir, Z. (2019). Social Media Addiction among University Students. *Journal of Beykoz Academy, 7*(2), 91-105.

Rosen, L. D., Whaling, K., Rab, S., Carrier, L. M., & Cheever, N. A. (2013). Is Facebook creating "iDisorders"? The link between clinical symptoms of psychiatric disorders and technology use, attitudes and anxiety. *Computers in Human behavior, 29*(3), 1243-1254.

Shimoga, S. V., Erlyana, E., & Rebello, V. (2019). Associations of social media use with physical activity and sleep adequacy among adolescents: Cross-sectional survey. *Journal of medical Internet research, 21*(6), e14290.

Smith, T., & Short, A. (2022). Needs affordance as a key factor in likelihood of problematic social media use: Validation, latent Profile analysis and comparison of TikTok and Facebook problematic use measures. *Addictive Behaviors, 129*, 107259.

Yamane, T. (1973). *Taro Yamane's formula.* study.com

Ye, J. H., Wu, Y. F., Nong, W., Wu, Y. T., Ye, J. N., & Sun, Y. (2023). The Association of sports envolvement and Short-Video Problematic Use, Learning Engagement, and Perceived Learning Ineffectiveness among Chinese Vocational Students. *Healthcare (Basel), 11*(2). doi:10.3390/healthcare11020161

Yu, Q., Wong, K.-K., Lei, O.-K., Nie, J., Shi, Q., Zou, L., & Kong, Z. (2022). Comparative effectiveness of multiple exercise interventions in the treatment of mental health disorders: a systematic review and network meta-analysis. *Sports medicine-open, 8*(1), 135.

Zahra, M. F., Qazi, T. A., Ali, A. S., Hayat, N., & ul Hassan, T. (2022). How TikTok addiction leads to mental health illness? Examining the mediating role of academic performance using structural equation modeling. *Journal of Positive School Psychology, 6*(10), 1490-1502.

Zhang, X., Feng, S., Peng, R., & Li, H. (2022). Using structural equation modeling to examine pathways between physical activity and sleep quality among Chinese TikTok users. *International journal of environmental research and public health, 19*(9), 5142.