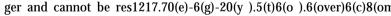
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pointed out some fundamental issue with smartphone use [4–6]. Accordingly, both American Psychiatric Association and World Health Organization have been aware of smartphone-related issues. us, they have attempted to de ne disorders relevant to the use of such technology.

eir work has materialized in the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (DSM-5) [7] and in the *International Classification of Diseases 11th Revision* (ICD-11) [8].

Some theories have been proposed to understand the development of smartphone and internet addiction [9–12]. For example, the *Interaction of Person-Affect-Cognition-Execution (I-PACE)* model suggests that individuals could use smartphones and/or internet as a coping strategy to overcome their di culties in daily lives and to satisfy their emotional needs. However, when the individuals develop habitual and automatic behaviors of using smartphone/internet use due to the frequently used method of smartphone/internet, they are at risk of developing an addition to the mentioned. Moreover, the craving in smartphone/internet users may become stron-





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themselves. ose with high levels of narcissism are likely to use this method more frequently for self-promotion, which will, in turn, a ect their dependency on smartphone and internet use [10]; the *Fit Model* indicates that people having high levels of narcissism perceive enjoyment from super cial social connects, which is easily achieved on the social media platforms, and thus they may frequently use and develop an addiction to them [12]; the *Trait Model* says that people with high levels of narcissism have extraversion characteristics to use more social media platform to make friends [11]. However, the mechanisms regarding smartphone/internet addiction development remain unclear because behavioral addiction is complex and additional evidence is needed to corroborate these proposed theories and models.

Apart from the mechanisms delineating the development of smartphone and internet addiction could be developed, healthcare providers and researchers are interested in how such behavioral addictions associate with health impairments. Indeed, current evidence from cross-sectional and longitudinal design has demonstrated the associations between smartphone/internet addiction and various health outcomes, such as psychological distress [13, 14], sleep problems [15, 16], and quality of life [17]. However, some scienti c evidence reports positive e ects of smartphone/internet addiction on health, such as the increase of physical activity [18, 19]. In this regard, the e ects of smartphone and internet addiction on human being's health needs additional evidence to provide a clear picture for healthcare providers in order to help them evaluate the bene ts and harms of such addictions.

Given that smartphone technology continues improving and that the amount of people which possess them is steadily increasing, it is of utmost importance that we address the behavioral addictions related to smartphone use. For that reason, we are interested in collecting and cumulating scienti c evidence associated with smartphone addiction and internet addiction across a variety of groups. In this regard, we expect that the present collection will be helpful in several aspects, such as clinical decision making, health programs design, and policy making, amongst others.

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### Authors' contributions

CY, ZAR and AHP all contributed to the conception of the article and drafting of the manuscript. All authors read and approved the final manuscript.

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### **Declarations**

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## Competing interests

Ni

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#### References

- Moses JC, Adibi S, Wickramasinghe N, Nguyen L, Angelova M, Islam SMS. Smartphone as a disease screening tool: a systematic review. Sens (Basel) 2022;22(10):3787. https://doi.org/10.3390/s22103787.
- Alimoradi Z, Lotfi A, Lin CY, Gri ths MD, Pakpour AH. Estimation of behavioral addiction prevalence during COVID-19 pandemic: a systematic review and meta-analysis. Curr Addict Rep. 2022;9(4):486–517. https://doi.org/10.1007/ s40429-022-00435-6.
- Kamolthip R, Chirawat P, Ghavifekr S, Gan WY, Tung SEH, Nurmala I, Nadhiroh SR, Pramukti I, Lin C-Y. Problematic internet use (PIU) in youth: a brief literature review of selected topics. Curr Opin Behav Sci. 2022;46:101150.
- James RJE, Dixon G, Dragomir MG, Thirlwell E, Hitcham L. Understanding the construction of 'behavior' in smartphone addiction: a scoping review. Addict Behav. 2023;137:107503. https://doi.org/10.1016/j.addbeh.2022.107503.
- Panova T, Carbonell X. Is smartphone addiction really an addiction? J Behav Addict. 2018;7(2):252–9. https://doi.org/10.1556/2006.7.2018.49.
- Yu S, Sussman S. Does smartphone addiction fall on a continuum of addictive behaviors? Int J Environ Res Public Health. 2020;17(2):422. https://doi.org/10.3390/ijerph17020422.
- Pontes HM, Gri ths MD. Measuring DSM-5 internet gaming disorder: development and validation of a short psychometric scale. Comput Hum Behav. 2015;45:137–43. https://doi.org/10.1016/j.chb.2014.12.006.
- Pontes HM, Schivinski B, Sindermann C, Li M, Becker B, Zhou M, Montag C. Measurement and conceptualization of gaming disorder according to the World Health Organization framework: the development of the Gaming Disorder Test. Int J Ment Health Addiction. 2021;19:508–28. https://doi. org/10.1007/s11469-019-00088-z.
- Brand M, Wegmann E, Stark R, Müller A, Wölfling K, Robbins TW, Potenza MN. The Interaction of person-a ect-cognition-execution (I-PACE) model for addictive behaviors: Update, generalization to addictive behaviors beyond internet-use disorders, and specification of the process character of addictive behaviors. Neurosci Biobehav Rev. 2019;104:1–10. https://doi.org/10.1016/j. neubiorev.2019.06.032
- Bu ardi LE. Narcissism and the world wide web. In: Campbell WK, Miller JD, editors. The handbook of narcissism and narcissistic personality disorder: theoretical approaches, empirical findings, and treatments. John Wiley & Sons, Inc; 2011. pp. 371–81. https://doi.org/10.1002/9781118093108.
- Gosling SD, Augustine AA, Vazire S, Holtzman N, Gaddis S. Manifestations
  of personality in online social networks: self-reported Facebook-related
  behaviors and observable profile information. Cyberpsychol Behav Soc Netw.
  2011;14(9):483–8. https://doi.org/10.1089/cyber.2010.0087.
- McCain JL, Campbell WK. Narcissism and social media use: a meta-analytic review. Psychol Pop Media Cult. 2018;7(3):308–27. https://doi.org/10.1037/ ppm0000137.
- Chen IH, Chen CY, Liu CH, Ahorsu DK, Gri ths MD, Chen YP, Kuo YJ, Lin CY, Pakpour AH, Wang SM. Internet addiction and psychological distress among chinese schoolchildren before and during the COVID-19 outbreak: a latent class analysis. J Behav Addict. 2021;10(3):731–46. https://doi.org/10.1556/2006.2021.00052. Published 2021 Sep 15.
- Kakul F, Javed S. Internet gaming disorder: an interplay of cognitive psychopathology. Asian J Soc Health Behav. 2023;6:36–45. https://doi.org/10.4103/ shb.shb\_209\_22.
- 15. Chang KC, Chang YH, Yen CF, Chen JS, Chen PJ, Lin CY, Gri ths MD, Potenza MN, Pakpour AH. A longitudinal study of the e ects of problematic

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- smartphone use on social functioning among people with schizophrenia: mediating roles for sleep quality and self-stigma. J Behav Addict. 2022;11(2):567–76. https://doi.org/10.1556/2006.2022.00012.
- Ranjan LK, Gupta PR, Srivastava M, Gujar NM. Problematic internet use and its association with anxiety among undergraduate students. Asian J Soc Health Behav. 2021;4:137–41. https://doi.org/10.4103/shb.shb\_30\_21.
- Kwok C, Leung PY, Poon KY, Fung XC. The elects 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 J Soc Health Behav. 2021;4:36–44.
- Huang PC, Chen JS, Potenza MN, Gri ths MD, Pakpour AH, Chen JK, Lin YC, Hung CH, O'Brien KS, Lin CY. Temporal associations between physical
- activity and three types of problematic use of the internet: a six-month longitudinal study. J Behav Addict. 2022;11(4):1055–67. https://doi.org/10.1556/2006.2022.00084.
- Xu P, Chen JS, Chang YL, Wang X, Jiang X, Gri ths MD, Pakpour AH, Lin CY. Gender di erences in the associations between physical activity, smartphone use, and weight stigma. Front Public Health. 2022;10:862829. https://doi. org/10.3389/fpubh.2022.862829.

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