# The prediction of Nomophobia Based on Perceived Parenting Styles with Mediating Role of Loneliness

**Bentolhoda Kolahkaj[1], Javad Khalatbari[2*], Afshin Salahyan[3] & Bita Nasrollahi[4]**

1. PhD Student, Department of Psychology, Science and Research Branch, Islamic Azad University, Tehran, Iran
2*. Corresponding Author, Associate Professor, Department of Psychology, Tonekabon Branch, Islamic Azad University, Tonekabon, Mazandaran, Iran
3. Assistant Professor, Department of Psychology, Payame Noor University, Tehran, Iran
4. Assistant Professor, Department of Psychology, Science and Research Branch, Islamic Azad University, Tehran, Iran.

| ARTICLE INFORMATION | ABSTRACT |
|---|---|
| | **Background and Aim:** Considering the prevalence of mobile phone use and more dependence on it, it is necessary to know the factors affecting it, The purpose of this study was to study prediction of nomophobia based on perceived parenting styles with mediating role of loneliness. **Research method:** This research was a descriptive study of structural equation modeling. This study was conducted in the presence of 500 student by available sampling method among students Kashan city in year academic 1400-1401. To measure the variables, nomophobia questionnaire of Yildirim and Correia (2015), parnetal styles questionnaire of Naghashian (2006) and short form of the social and emotional loneliness scale for adults of DiTommaso and et al (2004) were used. Data were analyzed using Pearson correlation and structural equation modelling with using SPSS-24 and AMOS software was investigated. **Results:** The results showed that there is a positive and significant relationship between perceived parenting and loneliness with nomophobia (P <0.01). The results also showed that most of the direct paths of this study were significant and the indirect paths of perceived parenting styles were significant through the mediating role of loneliness on nomophobia. **Conclusion:** proposed model had an acceptable fitness to the data (RMSEA=0/062, P-value<0/05) and evaluated model has a good fit and is an important step in identifying the factors that are effective in nomophobia in students. |

## Introduction

Smartphones are becoming essential to everyday life, with an estimated 6.6 billion users worldwide by 2022, providing access to sophisticated communications networks and a diverse array of entertainment and e-books. Smartphones also have valuable features such as cameras, recorders, translators, clocks, radios, remote controls for electrical appliances, calculators, electronic wallets, and even health trackers (Wahyuni, 2022). The gradual use of smartphones leads to overuse and more harm to the user (Kuscu et al., 2021). The use of mobile phones among the young generation is more than their older generation, who tend to improve interpersonal relationships, increase independence, and increase social connections and credibility among peers (Çevik-Durmaz et al., 2021).

This situation causes many people to become irrationally dependent on their phones and panic in the absence of a mobile phone (Ellis, 2019; López-Fernández et al., 2017; Chóliz et al., 2016). This condition, termed nomophobia, has been defined as a modern-day phobia resulting from the interaction between people and mobile technologies, especially smartphones (Essel et al., 2022). Considering the prevalence of mobile phone use and dependence on it, it is necessary to know the factors affecting it. Based on the background of the research, the quality of the relationship between parents and children is related to the way children use mobile phones. So that parents who have a more loving and warm relationship with their children, their children are less involved in cell phone addiction and less dependent on it (Shamsizadeh et al., 2022).

Parenting styles arise from the stable characteristics of parents over time, which provide the environmental and emotional background for the development and socialization of the child. Parenting styles are a set of tendencies, behavior, and verbal and non-verbal manifestations that determine the nature of the interaction between children and parents in all different situations (Darling & Steinberg, 1993; quoted by Yektaperest et al., 2020). Parenting styles in raising their children play an essential role in children's psychological quality; so many behavioral problems of children reflect the dynamics and complex interpersonal conditions of family members, especially parents. In other words, children's behavioral problems reflect the malfunctioning of the family, parents' unhealthy parenting methods, and their defective interactions with their children. In addition, these styles affect how children use mobile phones and tablets (Sadeghi et al., 1400) .

On the other hand, a variable that mediates the relationship between family functions and nomophobia is the feeling of loneliness. In addition to affecting nomophobia (Sun et al., 2022), the feeling of loneliness is also affected by perceived parenting styles (Khaleghi Tabar & Javadi, 2018).

Therefore, it can be a suitable mediating variable in this research. Loneliness is described as reflecting perceived deficiencies in terms of the quantity, quality, or type of one's relationships with others. It occurs when one's relationships with others do not meet one's expectations. It can be a transitory experience because it disrupts a person's relationships with others, or it can be a chronic experience that can lead to negative emotions in a person and affect their mental and physical health (Russell & Pang, 2020). Research has shown a statistically significant relationship between nomophobia and loneliness. Moreover, it can be seen that adolescent loneliness partially predicts the level of nomophobia (Gezgin et al., 2018; Çevik-Durmaz et al., 2021; Çelebi et al., 2021). So that it has been shown that with the increase in the daily use of smartphones by teenagers, they feel more lonely and anxious, and as a result, they show more nomophobic behaviors (Nguyen et al., 2022).

Kara et al.'s (2021) study reported that adolescents who use smartphones for long periods are at increased risk of developing nomophobia, with loneliness mediating the relationship between long-term mobile phone use and nomophobia. Furthermore, people who feel lonely often use smartphones as a tool to fight loneliness (Jiang et al., 2018). According to what has been said, perceived parenting styles and feelings of loneliness can be related to nomophobia. However, no study has shown the mediating role of feelings of loneliness in the relationship between perceived parenting styles and nomophobia. Thus, in order to solve this research gap and to identify mediating variables involved in the relationship between perceived parenting styles and nomophobia, the present study seeks to answer this question: Does the structural model of nomophobia based on perceived parenting styles with the mediating

role of loneliness in adolescent students have a good fit?

## Method

The current research is applied in terms of purpose, and the method is a mixed research type. The statistical population was all high school students of Kashan city in the academic year 2020-2021. There has yet to be a general agreement about the sample size required for factor analysis and structural equation modeling. However, according to many studies, the minimum sample size required is 200. Klein (2016) also believes that 10 or 20 samples are necessary for each variable. Based on Klein's model, a sample size of 500 people was selected for more generalizability of the results and the possibility of dropping some questionnaires. The sampling method in this research was available (online).

## Tools

**1. Nomophobia Questionnaire (NMP-Q) by Yildirim and Correia (2015):** This questionnaire contains 20 questions, four components of inability to access information with questions 1, 2, 3, and 4; losing composure with questions 5, 6, 7, 8 and 9; Inability to communicate questions 10, 11, 12, 13, 14 and 15; It measures communication loss with questions 16, 17, 18, 19, and 20. Its scoring is on a seven-point Likert scale, ranging from 1 point of completely disagree to 7 points of very much agree. A higher score indicates a higher severity of nomophobia. The creators checked its reliability and Cronbach's alpha coefficients for inability to access information 0.92, loss of peace 0.87, inability to communicate 0.82, loss of communication 0.81, and total questions 0.94. Its concurrent validity has been investigated with a correlation coefficient of 0.71 (Yildirim & Correia, 2015). Cronbach's alpha was used to check the scale's reliability. The coefficients for inability to access information were 0.74, loss of peace 0.79, inability to communicate 0.88, loss of communication 0.88, and all questions were 0.92. 0 has been calculated (Alizadeh et al., 2021). In another study abroad, Cronbach's alpha was investigated, and the coefficient was 0.96 (Galhardo et al., 2020). In the present study, Cronbach's alpha was used to check the reliability, and the coefficient was 0.88.

**2. Perceived Parenting Styles Questionnaire (PSQ) by Naghashian (2006):** It has 77 questions, and in addition to measuring parental love and control based on children's perception, it also evaluates the family's emotional environment (warmth and coldness of family relationships). The combination of these two dimensions gives four styles: authoritative styles (high affection-high control), authoritarian (low affection-high control), permissive (high affection-low control), and neglectful or indifferent (low affection-low control). Scoring is based on a 5-point Likert scale, and higher scores in each dimension indicate greater affection and control (Khanshan & Tamnaifar, 2022). The creator of the questionnaire checked its reliability, and the total coefficient of the questions was 0.87 (Naghashian, 2006). In a study, Cronbach's alpha and Cronbach's coefficient of control-freedom were 0.71, acceptance-rejection was 0.94, and the total number of questions was 0.84 (Melkzadeh et al., 2014). In the present study, Cronbach's alpha was used to check the reliability, and the coefficient was 0.95.

**3. The loneliness scale (SELSA-S) by DiTomaso et al. (2004):** this scale includes 14 questions and three subscales of family loneliness with questions 1, 5, 9, 12, and 13; It measures social with questions 2, 4, 7, 11 and 14, romantic with questions 3, 6, 8 and 10. The feeling of emotional loneliness is obtained from the sum of the scores under the romantic and family scales. In front of each question, a range of 5 options from completely disagree 1 mark to completely agree 5 marks are awarded. All questions, except question 14, are scored reversely. Getting a higher score in each of the dimensions of this scale indicates a greater feeling of loneliness in that dimension (Jokar & Salimi, 2012). The creators of the scale have calculated Cronbach's alpha and obtained it between 0.87 and 0.90 (Di Tommaso et al., 2004). This scale was translated and standardized in Iran by Jokar and Salimi (2012), and Cronbach's alpha was 0.92 for romantic, 0.84 for social and 0.78 for family. In a foreign study, Cronbach's alpha was obtained for romantic 0.81, social 0.82, and family 0.78 (Gezgin & Ummet, 2021). In the present study, Cronbach's alpha was used to check the reliability, and the coefficient was 0.77.

## Results

The findings demonstrate the correlation matrix between research variables. There is a significant correlation between predictive and mediating variables with nomophobia. Also, the correlation between the variables is significant. Therefore, it was possible to examine the research model, and

the results of the direct and indirect coefficients and the model fit are given below.

As can be seen in Table 1, the coefficient of the direct path of control (β=-0.148 and sig=0.001), affection (β=-0.179 and sig=0.001), loneliness (0.882) β = and sig = 0.001) was significant on nomophobia. Also, the coefficient of the direct path of control (β=0.274 and sig=0.001) and affection (β=0.214 and sig=0.001) on loneliness was significant. In the following, to check the indirect relationship of the proposed model, the bootstrap method was used in the computer instruction of Preacher and Hayes (2004.(

The structural model of the research showed that the sum of squared multiple correlations (R2) or the coefficient of determination for the nomophobia variable by perceived parenting styles and feeling of loneliness was equal to 0.81. This shows that perceived parenting styles with the mediating role of loneliness explain a total of 81% of the variance of nomophobia.

## Conclusion

This research aimed to investigate the prediction of nomophobia based on perceived parenting styles with the mediating role of loneliness. The results showed a significant relationship between parenting styles of perception and feeling of loneliness with nomophobia. Also, the results showed that the direct paths of this research were significant, and the indirect paths of perceived parenting styles through the mediating role of loneliness on nomophobia were significant.

In explaining the predictive role of perceived parenting styles on nomophobia, it can be said that the perceived parenting style of high affection and high control is an aspect of parental parenting in which children perceive control, support, and logical interest. There is the application of fixed rules along with the demonstration of acceptance, which is characterized by high control and responsiveness. These parents support their children verbally and physically, and their expectations are proportional to their children's abilities (Howe & Rinaldi, 2011). Therefore, when children perceive higher love and control in parenting, they show more resilience in the face of academic, social, etc. stress, and adverse conditions. They feel more freedom and independence in their teenage years and feel less than their parents are inattentive and misbehaving towards them (Onder & Gulay, 2019).

When children perceive higher affection and control, it makes them feel that their parents are more emotional towards them and understand them. However, on the other hand, children who perceive lower control and affection stay away from their parents and do not have warm relations with them, and to escape from these conditions, they turn to establish social relations in virtual space and the Internet. Such teenagers spend most of the day on their mobile phones and by being active on social networks, they find friends with the same opinion. This causes him to become dependent on the mobile phone and panic when the phone is unavailable, or his Internet is turned off. Therefore, perceived parenting styles can predict nomophobia. In explaining the predictive role of loneliness on nomophobia, it can be said that students who feel lonely often use smartphones to fight loneliness, and smartphones may increase as a way to pass the time. This increase in the number of hours of mobile phone use is even greater during the coronavirus outbreak, as students spend more time at home. This increases smartphone use and makes the adolescent neglect everything else in his life (Parizad et al., 2022).

In explaining the predictive role of perceived parenting styles on nomophobia with the mediating role of loneliness, it can be said that the authoritative parenting style, which is the result of the combination of high affection and high control by parents, plays an important role in reducing children's loneliness. In this way, authoritarianism in parenting by parents, which is accompanied by high affection and control, makes teenage children have a warmer emotional relationship with their parents and can better discuss their feelings and issues with their parents. Therefore, when children perceive higher love and control from their parents, they succeed in forming their identity, have better relationships with their parents and others, and feel that their wishes and decisions are respected in the family center. Such teenagers feel less lonely because they perceive more respect from their parents and have a greater perception of their parents' love and constructive control. They can satisfy their needs in the family center and have the power of choice and independence. When such teenagers experience less loneliness, they look less for alternative ways to solve the feeling of loneliness and look less at cyberspace as a way to escape loneliness. Therefore, when they make better use of the family conditions and the capabilities of the virtual space, they become

less addicted to mobile phones and the Internet and experience less fear when the phone is available to them. Therefore, the feeling of loneliness can mediate the relationship between parenting styles and nomophobia.

## Conflict of Interest

According to the authors, this article has no financial sponsor or conflict of interest.

## References

Alizadeh, M., Hasani, M., Mianbandi, G., & Ashouri, A. (2021). Psychometric Properties of the Persian Version of Nomophobia Questionnaire. Iraninan Psychiatry and Clinical Psychology, 27(2), 234-247.

Çelebi, M., Metin, A., İncedere, F., Aygün, N., Bedir, M., & Özbulut, Ö. (2020). Investigation of Relationship between Nomophobia and Loneliness Level: Ercives University Sample. Sciences, 10(2), 315-334.

Çevik-Durmaz, Y., Yalçinkaya-Önder, E., & Timur, S. (2021). Preservice teachers' nomophobia levels, sense of loneliness and adjustment to college life. Perspectives in Psychiatric Care, 57(3), 1052-1072.

Chou, H. L., Chou, C., & Chen, C. H. (2016). The moderating effects of parenting styles on the relation between the internet attitudes and internet behaviors of high-school students in Taiwan. Computers & Education, 94, 204-214

Chóliz, M., Pinto, L., Phansalkar, S. S., Corr, E., Mujjahid, A., Flores, C., & Barrientos, P. E. (2016). Development of a brief multicultural version of the test of mobile phone dependence (TMDbrief) questionnaire. Frontiers in psychology, 7, 650.

DiTommaso, E., Brannen, C., & Best, L. A. (2004). Measurement and validity characteristics of the short version of the social and emotional loneliness scale for adults. Educational and Psychological Measurement, 64(1), 99-119.

Ellis, D. A. (2019). Are smartphones really that bad? Improving the psychological measurement of technology-related behaviors. Computers in Human Behavior, 97, 60-66.

Essel, H. B., Vlachopoulos, D., Tachie-Menson, A., Nunoo, F. K. N., & Johnson, E. E. (2022). Nomophobia among Preservice Teachers: a descriptive correlational study at Ghanaian Colleges of Education. Education and Information Technologies, 1-21.

Galhardo, A., Loureiro, D., Raimundo, E., Massano-Cardoso, I., & Cunha, M. (2020). Assessing nomophobia: validation study of the European Portuguese version of the Nomophobia Questionnaire. Community Mental Health Journal, 56(8), 1521-1530.

Gezgin, D. M., & Ümmet, D. (2021). An investigation into the relationship between nomophobia and social and emotional loneliness of Turkish university students. International Journal of Psychology and Educational Studies, 8(2), 14-26.

Gezgin, D. M., Hamutoglu, N. B., Sezen-Gultekin, G., & Ayas, T. (2018). The relationship between nomophobia and loneliness among Turkish adolescents. International Journal of Research in Education and Science, 4(2), 358-374.

Rinaldi, C. M., & Howe, N. (2012). Mothers' and fathers' parenting styles and associations with toddlers' externalizing, internalizing, and adaptive behaviors. Early Childhood Research Quarterly, 27(2), 266–273.

Jiang, Q., Li, Y., & Shypenka, V. (2018). Loneliness, Individualism, and Smartphone Addiction among International Students in China. Cyberpsychology, Behavior, and Social Networking, 21(11), 711-718.

Jokar, B., & Salimi, A. (2012). Psychometric properties of the short form of the social and emotional loneliness scale for adults (SELSA-S). International Journal of Behavioral Sciences, 5(4), 311.

Kara, M., Baytemir, K., & Inceman-Kara, F. (2021). Duration of daily smartphone usage as an antecedent of nomophobia: Exploring multiple mediation of loneliness and anxiety. Behaviour & Information Technology, 40(1), 85-98.

Khaleghi Tabar, S., & Javadi, M. (2018). The relationship between perceived parenting styles and feelings of loneliness and fear of negative evaluation in adolescents. Iranian Journal of Psychology and Behavioral Sciences, 15(1), 19-26.

Khanshan, M., & Tamnaeifar, M. R. The relationship between parenting styles and attachment styles with adolescent sleep disorders: the mediating role of internet addiction. Rooyesh, 11(1): 185-198.

Kline, R. B. (2016). Principles and practice of structural equation modeling (4th Ed.), New York: The Guilford Press.

Kuscu, T. D., Gumustas, F., Rodopman Arman, A., & Goksu, M. (2021). The relationship between nomophobia and psychiatric symptoms in adolescents. International Journal of Psychiatry in Clinical Practice, 25(1), 56-61.

Lopez-Fernandez, O., Kuss, D. J., Romo, L., Morvan, Y., Kern, L., Graziani, P., & Billieux, J. (2017). Self-reported dependence on mobile phones in young adults: A European cross-cultural empirical survey. Journal of behavioral addictions, 6(2), 168-177.

Malekzade, L., Heidari, M., Pakdaman, S., & Tahmassian, K. (2014). The Mediator Relationship/Effect of Subsets of Applied Parenting Styles and Self - Efficacy on Psychological Well - Being in Adolescents. Journal of Family Research, 10(1), 113-126.

Moreno-Guerrero, A. J., Hinojo-Lucena, F. J., Trujillo-Torres, J. M., & Rodríguez-García, A. M. (2021). Nomophobia and the influence of time to REST among nursing students. A descriptive, correlational and predictive research. Nurse Education in Practice, 52, 103025.

Naghashian, Z. (2006). The relationship between family environment and academic success. Master's thesis in psychology, Shiraz University.

Nguyen, B. T. N., Nguyen, T. T., & Le, U. T. T. (2022). Nomophobia and stress among Vietnamese high school students in Covid-19 pandemic: A mediation model of loneliness. Journal of Biochemical Technology, 13(1), 34-40.

Onder, A., & Gulay, H. (2009). Reliability and validity of parenting styles & dimensions questionnaire. Procedia Social and Behavioral Sciences, 1, 508-514.

Parizad, N., Radfar, M., Yarmohammadi, M., & Alinejad, V. (2022). Smartphone addiction and its relationship with loneliness, fear of missing out, and academic performance among students of Urmia University of medical sciences. Nursing and Midwifery Journal, 20(1): 43-54

Russell, D. W., & Pang, Y. C. (2020). Loneliness. Encyclopedia of Personality and Individual Differences, 2674-2677.

Sadeghi, S., Sarlak, S., & Ayoubi, S. (2021). Develop and Evaluation of Psychometric Properties of Smartphone and Tablet Addiction Questionnaire- Parent Version in Elementary School Students and Its Relationship with Parenting Style. Journal of Family Research, 17(2), 267-282.

Schermelleh-Engel, K., Moosbrugger, H., & Müller, H. (2003). Evaluating the fit of structural equation models: Tests of significance and descriptive goodness-of-fit measures. Methods of psychological research online, 8 (2), 23-74.

Sevim-Cirak, N., & Islim, O. F. (2021). Investigation into Nomophobia amongst Turkish pre-service teachers. Education and Information Technologies, 26(2), 1877-1895.

Shamsizadeh, E., Eftekhar Saadi, Z., Jayrvand, H., Bakhtiarpoor, S., & Makvandi, B. (2022). Evaluation of social well-being and emotional self-awareness based on the quality of relationship with parents due to smartphone addiction in high-intelligence students. JPEN, 8(3): 16-26.

Sun, Y., Yang, J., Li, M., & Liu, T. (2022). The Association between Neuroticism and Nomophobia: Chain Mediating Effect of Attachment and Loneliness. International Journal of Mental Health and Addiction, 1-18.

Wahyuni, S. (2022). Nomophobia (No MObile PHone PhoBIA) Among Medical Students: A Literature Review. International Journal of Engineering, Science and Information Technology, 2(3), 48-51.

Yektaparast, M., Asadi, S., & Rahimi, M. (2020). An Investigation into the Changes in Perceived Parenting Styles during Four Consecutive Generations. The Women and Families Cultural-Educational, 15(51), 55-70.

Yildirim, C., & Correia, A. P. (2015). Exploring the dimensions of nomophobia: Development and validation of a self-reported questionnaire. Computers in Human Behavior, 49, 130-137.