

Interventions to overcome *No Mobile Phone Phobia* (NOMOPHOBIA) behavior in Adolescents: A Systematic Review

Meidinati Ikhlasul Amalia

Universitas Muhammadiyah Malang

Corresponding Author: Meidinati Ikhlasul : amaliameidinati@gmail.com

ARTICLE INFO

Keywords: Nomophobia, Intervention, Anxiety

Received : 20, April

Revised : 23, May

Accepted: 26, June

©2025 Amalia (s): This is an open-access article distributed under the terms of the [Creative Commons Atribusi 4.0 Internasional](https://creativecommons.org/licenses/by/4.0/).



ABSTRACT

Nomophobia is anxiety and fear caused by the absence of a mobile phone or software in the immediate area. Nomophobia has negative impacts on students, such as decreased concentration, academic achievement, health, and disruption of social relationships. This systematic review aims to identify effective interventions to overcome nomophobia in students. Of the ten journals analyzed, mindfulness training interventions were the most recommended, in addition to cognitive therapy, Islamic counseling, cognitive behavioral therapy (CBT), expressive writing, and dhikr therapy can also be used as intervention options. Mindfulness has been shown to reduce stress and anxiety by reducing cortisol levels and activating the parasympathetic nervous system, which have positive physiological and psychological impacts. Other interventions such as expressive writing and CBT have also shown effectiveness in relieving emotional stress and changing negative thought patterns. These findings indicate that mindfulness has high potential to be implemented in Indonesia in order to improve students' mental well-being and reduce the negative impacts of nomophobia .

INTRODUCTION

The increasingly sophisticated technology today has a good impact on the world of economy, politics, socio-culture, and people's lifestyles. Currently, many community activities are made easier by sophisticated technology in the form of *mobile phones*. This mobile phone has many features such as WhatsApp, internet networks, social media, and so on. According to the Ministry of Communication and Information in 2018, mobile phone usage in Indonesia reached 100 million people, this makes Indonesia the fourth most mobile phone users in the world after China, India and America.

According to data from BPS, the use of mobile phones in 2022 was recorded at 67.88% of the population in Indonesia already had a mobile phone. This figure has increased when compared to the conditions in 2021 which reached 65.87%. Based on a survey conducted by Google involving 1500 respondents aged 18-55 years. Respondents consisted of 60% in Java and 40% outside Java. The results showed that 75% of respondents showed interest in mobile phones, this is because by using a mobile phone, a person can not only communicate long distance, but can also seek entertainment such as playing games or watching YouTube. Behind the sophistication of today's technology, apart from the good impacts, there are also bad impacts, namely for individuals who do not have good time management will experience anxiety and even fear when away from *their mobile phones* . Anxiety and fear of being away from a mobile phone is called *nomophobia*

Nomophobia is anxiety and fear caused by the absence of or software in the immediate area. *Nomophobia* is also defined as anxiety due to the absence of devices such as computers or virtual communication devices (King et al., 2014). Dixit et al. (2010) also define *nomophobia* as anxiety about the distance between a person and their cellphone. When in an area with no signal, running out of quota, or running out of battery, individuals can experience panic or severe anxiety, which will have negative effects especially on their concentration. Yildirim (2014) also said that *nomophobia* is a feeling of fear and anxiety when away from a cellphone.

As for the negative influence of *nomophobia* on students, *nomophobia* is a factor that influences *academic failure*. *Academic failure* is a student's inability to receive lessons (Rahayu et al., 2020). This is caused by a lack of concentration in students because students only think about *their cellphones* . This will certainly also reduce students' interest in learning. The impact caused by *nomophobia* in adolescents is the emergence of psychological instability in students and also has a negative impact on health, namely signal radiation which can cause the risk of brain cancer (Permatasari et al., 2022). In addition, according to Hanika (2015), *nomophobia* has negative impacts, including *nomophobia* can affect academic achievement and hinder social relationships, because individuals will focus more on playing with *cellphones* than interacting with people around them.

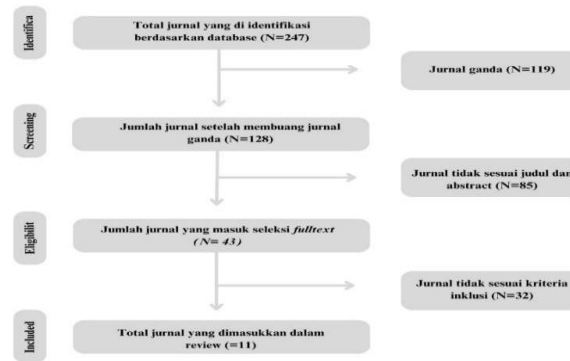
Based on research conducted by Odzmir et al., (2017), several factors were found that are related to nomophobia. First, the loneliness factor, when individuals feel lonely, individuals tend to open their cellphones for more than 7 hours a day. Second, the anxiety factor, individuals often divert their anxiety by opening their cellphones. Third, the happiness factor, in cellphones individuals can get their own happiness with various existing applications. Fourth, the self-control factor, the features contained in cellphones tend to make individuals interested in playing cellphones excessively so that individuals who do not have self-control will play their cellphones excessively. In addition, according to Yuwanto (2010), the factors that can influence nomophobia are internal factors, such as low self-control, low self-efficacy and personal happiness. Situational factors, individual situational factors such as stress and loneliness. Social factors, smartphones are a means and need for interaction. External factors, such as smartphone advertisements that make individuals interested in buy

From the explanation above, it states that the importance of intervention in order to minimize *nomophobia behavior*. Intervention refers to actions taken to create situations that support problem solving or cases (Hidayati, 2014). There are various interventions that can be considered to minimize *Nomophobia behavior*, this systematic review aims to present relevant interventions in an effort to minimize nomophobia behavior. To achieve optimal results, a synthesis of several previous studies is needed. This synthesis is carried out using a systematic review approach and is presented in the form of messages that can be applied.

METHOD

At the beginning of the process of making this systematic review, the author began by creating research questions. The author used the SPIDER formulation as a reference for creating review questions. The question used by the author in this systematic review is, What interventions are used to overcome nomophobic behavior?. Next, the author created search *keywords* in three *databases*, namely *Scopus*, *Garuda* and *Sains Direct*. Furthermore, after several articles were collected, the author began to check for duplication of articles using RAYYAN's help, after that the author *screened* through abstracts and finally *full text screening*. After the selection, there were 247 journals and there were 11 journals that met the criteria, namely journals from 2018 to 2024, and discussed interventions to overcome nomophobic behavior.

Figure 1 RIMA graph of journal selection flow



The journal selection flow can be seen in the PRISMA graph above. Researchers determine the limitations in the journal review with several criteria: 1) The journal discusses nomophobia 2) The journal contains interventions to overcome nomophobia behavior 3) The year of publication of the journal ranges from 2018-2024.

DISCUSSION

Nomophobia is a specific phobia characterized by the emergence of anxiety, nervousness, discomfort, and distress when mobile phones are not used and is considered an emerging public health problem due to the negative consequences on the physical and mental health of young people and adolescents, especially women (Fernandez., et al 20224) . Lin et al categorized *nomophobia* as a form of situational phobia and suggested its inclusion in the specific phobias in the Diagnostic and Statistical Manual of Mental Disorders (DSM-V) as a situational phobia. Yildirim (2014) also said that *nomophobia* is a feeling of fear and anxiety when away from a mobile phone. In addition, in the study of Arpaci et al., 2017, *nomophobia* is defined as the fear of losing contact with a mobile phone, or the feeling of discomfort and anxiety experienced by individuals when they cannot use a mobile phone.

There are underlying reasons that nomophobic behavior must be minimized. The explanation above explains how individuals who have high nomophobic behavior are depicted. Furthermore, it will show what the impacts are if individuals have nomophobic behavior. The negative impacts of *nomophobia* have been found to be correlated with stress and depression (Durak, 2018), loneliness (Valenti et al., 2022), paranoid ideas (Bekaroğlu & Yılmaz, 2020), FoMO (Mannion et al., 2021), phubbing (Tomczyk & Lizde, 2022), use of telephones while driving (Di Milia et al., 2011) . Another negative impact on psychology, namely reduced individual concentration on the real world, this lack of concentration can be a factor that influences academic failure for students. This systematic review will show some interventions that can be given with age variations and from various views of other countries.

Table 1. List of Interventions that can overcome *Nomophobia*

No	Writer	Subject	Intervention	Results
1	Salma Nazella Fortuna, Ulfa Danni Rosada (2022)	70 students in class X	Cognitive Behavior Therapy (Group Counseling Cognitive Restructuring Techniques)	Group Counseling Services with Restructuring Techniques after being given services with instrument validation by expert validators, then: Students experience changes that initially tend to have anxiety when away from gadgets to behaving normally and even enjoying themselves when away from gadgets.
2	Alini, Bri Novrika (2022)	53 students of State Senior High School 1 Kuala Mudik	Islamic Counseling Treatment	After the <i>Islamic counseling treatment</i> , there was a visible difference in the level of <i>nomophobia</i> . It was also seen from the behavior of the subjects who began to be aware again of their relationship with God and began to reduce time spent with their cellphones.
3	Arpaci, I., Baloğlu, M., Özteke Kozan, H. İ., & Kesici, Ş. (2017)	450 students were recruited through a convenience sampling method.	Increased <i>Mindfulness</i>	Results showed a significant direct effect of mindfulness on decreasing nomophobia for women but not for men.
4	Triantoro Safaria, Diana Putri Arini, Nofrans Eka Saputra (2023)	60 participants aged between 21 to 24 years,	Spiritual Mindfulness	The spiritual awareness intervention had an impact on decreasing the level of <i>nomophobia</i> of individuals in the experimental group. Meanwhile, individuals in the control group showed an increase in their <i>nomophobic behavior</i> . In conclusion, the spiritual awareness intervention was effective in reducing the level of <i>nomophobia</i> by 70.8%, as

				indicated by the partial eta squared value.
5	Torpil, B., & Pekçetin, S. (2022)	The remaining 52 participants had severe nomophobia.	Occupational Therapy (<i>Client-Centered</i>)	Occupational Therapy (<i>Client-Centered</i>) intervention showed that a 45-minute intervention, twice a week for 5 weeks, had a positive effect on reducing <i>nomophobia</i> .
6	Fernandez-Crespo, M., Recio-Rodriguez, JI, Lee, HC, Alonso-Dominguez, R., Montejo, AL, Hernandez-Gonzalez, L, & Rihuete-Galve, MI (2024)	40 young adults (18–35 years)	<i>Mindfulness Training Program</i>	<i>Mindfulness Training Program</i> intervention included in this study reduced internet addiction to a greater or lesser extent.
7	Ortega-Barón, J., Machimbarrena, J.M., Díaz-López, A., Caba-Machado, V., Tejero, B., & González-Cabrera, J. (2024)	726 teenagers	<i>Safety-Net Program</i>	The intervention group showed significant improvement compared to the control group in terms of <i>nomophobia</i> . These results indicate that the <i>Safety.net</i> program effectively prevented the increase in most internet risks as assessed by the number of reduced mobile phone use sessions.
8	Dewy, 2020	33 respondents were teenagers	Application of expressive writing and Islamic dhikr	The influence of the combination of <i>expressive writing</i> and dhikr therapy on the occurrence of <i>nomophobia</i> . The influence of expressive writing activities on health can be shown from the decrease in the activity of the autonomic and cardiovascular nervous systems as experienced

				by individuals in the relaxation process.
9	Utami, MAP, & Syamsuddin, S. (2020)	A student with <i>nomophobia</i> , by applying several criteria.	Social Interaction Approach	The average smartphone usage in the initial phase was 8 hours, the intervention phase decreased to 4 hours 57 minutes, and after the intervention or in the second phase the duration of smartphone usage became 6 hours 21 minutes. This shows that the intervention given in this case the social interaction approach has a good impact or is able to reduce smartphone usage in <i>nomophobic children</i> .
10	Kurnia, R. (2024)	Students of the Islamic Guidance and Counseling Department, FDKI IAIN Syekh Nurjati	Cognitive Behavior Therapy	Cognitive behavioral therapy group counseling is effective in reducing <i>nomophobia behavior</i> among students. This is indicated by a decrease in the level of <i>nomophobia</i> with an average score of 11.03 before and after treatment. The initial results when the pretest was 35.59 and the final results when the posttest was 24.57

The systematic review conducted aims to answer research questions regarding interventions that can be used to overcome nomophobia behavior. Based on the table, it can be seen that 3 out of 10 journals suggest the use of *mindfulness interventions*. *training* to overcome nomophobia behavior. Meanwhile, several other journals recommend intervention through *cognitive therapy*, Islamic counseling, *cognitive behavioral therapy*, *expressive writing* and *dhikr therapy*. Various interventions have been proven by researchers to help overcome nomophobia in students. From some of the interventions above that have been carried out from various countries and one of them also comes from our own country. This is relevant to be applied in Indonesia to overcome nomophobia in students.

In general, mindfulness is described as “awareness that arises through intentional, present, nonjudgmental attention to the unfolding of experience over time” (Kabat-Zinn, 2005). Mindfulness is the practice of managing one’s attention by adopting an attitude of acceptance, curiosity, and openness to ongoing experiences (Williams & Bakitas, 2012). According to Baer, 2003 and Arpaci et al., 2020 (in Safaria et al., 2023), cortisol is a stress hormone that can increase

symptoms of nomophobia. By reducing stress and cortisol levels, *mindfulness* can help relieve anxiety associated with fear of losing access to mobile devices. *Mindfulness practices* can also stimulate a relaxation response through the parasympathetic nervous system, which helps balance the “fight or flight” response of the sympathetic nervous system. This can lower heart rate and blood pressure, which are often elevated with symptoms of nomophobia. In this case, *mindfulness* can provide physiological and psychological impacts that contribute to alleviating nomophobia symptoms (Safaria et al., 2023). Research also shows that mindfulness has been shown to reduce stress levels and reduce cortisol hormone production (Creswell et al., 2014).

In his experiment (Dewy, 2020) also found that nomophobia can be overcome by implementing *expressive writing* and dhikr therapy. The combination of expressive writing and dhikr therapy are two interventions that are combined to get better results in implementing interventions for *nomophobia*. Expressive writing makes individuals re-evaluate their lives. Writing down stressful events, traumatic events, makes a person understand the moment better. The positive impact of expressive writing activities on health can be seen from the decreased activity of the autonomic nervous system and cardiovascular system, similar to the condition of the body when it is relaxed. This can be explained through inhibition theory, which states that storing thoughts and emotions related to traumatic experiences can trigger stress buildup in the body, increased physiological responses, and obsessive thought patterns towards stressful events. This accumulation, in the long term, makes individuals feel constantly under pressure and socially threatened. By expressing experiences through writing, these emotional barriers slowly decrease, which ultimately has a positive impact on health (Pennebaker & Smyth, 2016)

In addition, the *Cognitive Behavioral Therapy* (CBT) approach has various techniques, one of which is *cognitive restructuring*. This technique focuses on the process of identifying and evaluating individual thought patterns, understanding how negative thoughts affect behavior, and training individuals to develop more realistic, appropriate, and adaptive ways of thinking. *Cognitive restructuring* can be applied to individuals who experience emotional stress and tend to exhibit detrimental behavior, both towards themselves and others (Fortuna et al., 2022). This technique is also effective for those who often use absolute language such as "must", "always", or "never", and have a belief system that limits personal development. Through guidance and counseling services that are applied effectively, this technique can encourage positive changes in the way individuals think and behave.

The interventions identified in this systematic review, including *mindfulness training*, cognitive therapy, and other approaches, have been shown to be effective in addressing nomophobic behavior in students. Among these interventions, *mindfulness* has been shown to have great potential in reducing anxiety and stress associated with mobile device dependency, as well as providing positive impacts on physiological and psychological aspects. Given its relevance, especially in Indonesia, implementing *mindfulness interventions* among

students can be an effective step in addressing the growing phenomenon of nomophobia. Therefore, the implementation of this intervention is expected to help improve students' mental well-being and reduce the negative impacts arising from excessive dependence on technology.

CONCLUSION

Nomophobia is a phobia characterized by anxiety and discomfort when unable to access a mobile phone, which is now considered a public health problem with negative impacts on physical and mental health, especially among adolescents. Nomophobic behavior needs to be minimized because it can cause various negative impacts, such as stress, depression, loneliness, impaired concentration, and even academic failure in students. This systematic review shows that various interventions, including mindfulness training, cognitive therapy, and cognitive behavioral therapy group counseling, are effective in overcoming nomophobic behavior in students. Mindfulness, in particular, has been shown to reduce anxiety and stress, as well as provide positive impacts both physiologically and psychologically. Given these positive results, the implementation of mindfulness interventions in Indonesia is a relevant and important step to overcome the increasingly widespread phenomenon of nomophobia, especially among students.

Based on the results of the systematic review that showed the effectiveness of various interventions in overcoming *nomophobia*, further research is recommended to test the implementation of *mindfulness-based interventions* in the Indonesian educational context by considering cultural and social aspects. In addition, it is important to explore contextual factors such as academic pressure, family environment, and social media use that may affect the level of *nomophobia*. Comparative studies between interventions such as *mindfulness*, *cognitive behavioral therapy*, and group counseling are also needed to determine the most effective method.

STATEMENT

Thank-you note

I would like to thank Mrs. Dr. Nida Hasanati, as the lecturer in charge of the Scientific Writing course, who has provided input and guidance during the process of completing this assignment. I would also like to thank Mr. Surahman, M.Si, who has provided training and shown how to compile a systematic review. With the support of Mr. and Mrs., I was able to complete this systematic review well.

BIBLIOGRAPHY

- Alini, A., & Novrika, B. (2022). Islamic counseling PKM to overcome nomophobia in adolescents at SMAN 1 Kuantan Mudik Lubuk Jambi. *COVIT (Community Service of Tambusai)* , 2 (2), 220-226. <https://doi.org/10.31004/covit.v2i2.9521>
- Arpaci, I., Baloğlu, M., Özteke Kozan, H. İ., & Kesici, Ş. (2017). Individual differences in the relationship between attachment and nomophobia among college students: The mediating role of mindfulness. *Journal of medical Internet research* , 19 (12), e404.
- Bekaroğlu, E., & Yılmaz, T. (2020). Nomophobia: Differential diagnosis and treatment. *Current Approaches in Psychiatry* , 12(1), 131-142. <https://doi.org/10.18863/pgy.528897>
- Creswell, J.D., Pacilio, L.E., Lindsay, E.K., & Brown, K.W. (2014). Brief mindfulness meditation training alters psychological and neuroendocrine responses to social evaluative stimuli. *Psychoneuroendocrinology* , 1-12. <https://doi.org/10.1016/j.psyneuen.2014.02.007>
- Durak, HY (2018). Investigation of predictors of nomophobia and smartphone addiction among adolescents in Turkey: Demographic variables and academic achievement Investigation of nomophobia and smartphone addiction variables and academic achievement. *Journal of Social Sciences* . <https://doi.org/10.1016/j.sosci.2018.09.003> .
- Di Milia, L., Smolensky, M.H., Costa, G., Howarth, H.D., Ohayon, M.M., & Philip, P. (2011). Demographic factors, fatigue, and driving accidents: An examination of the published literature. *Accid Anal Prev* , 43(2), 516-532. <https://doi.org/10.1016/j.aap.2009.12.018>
- Fernandez-Crespo, M., Recio-Rodriguez, JI, Lee, H.C., Alonso-Dominguez, R., Montejo, A.L., Hernandez-Gonzalez, L, & Rihuete-Galve, M.I. (2024). Study protocol of a proposed Neurofeedback-Assisted Mindfulness Training Program on symptoms of anxiety and psychological distress associated with smartphone use in young adults: a randomized controlled trial. *Frontiers in Public Health* , 12 , 1410932.
- Fortuna, Salma Nazella, and Ulfa Danni Rosada. "The Effectiveness of Group Counseling Services Using Cognitive Restructuring Techniques in Overcoming Nomophobia in Students." *Guidance: Journal of Guidance and Counseling* 19.02 (2022): 177-185. <https://doi.org/10.34005/guidance.v19i02.2415>
- Kabat-Zinn, J. (2005). *Coming to our senses: Healing ourselves and the world through mindfulness*. Hachette UK .

- Khosravi, Z., Javadzade, H., Mahmoodi, M., & Basirian-Jahromi, R. (2021). The effectiveness of web-based educational programs on optimal use of smartphones among students with nomophobia based on self-efficacy theory: The role of the medical librarian. *Iranian Journal of Health Education and Health Promotion* , 9 (3), 246-257.
- Kurnia, R. (2024). Effectiveness of Cognitive Behavior Therapy Group Counseling to Reduce Nomophobia Behavior in Students. *Prophetic: Professional, Empathy, Islamic Counseling Journal* , 7 (1), 18-31.
- Mannion, K. H., Nolan, S. A., & Monacis, L. (2021). The effect of smartphones on anxiety: An attachment issue or fear of missing out? *Cogent Psychology*, 7(1). <https://doi.org/10.1080/23311908.2020.1869378>
- Ortega-Barón, J., Machimbarrena, J.M., Díaz-López, A., Caba-Machado, V., Tejero, B., & González-Cabrera, J. (2024). Eficacia de un programa de prevention multirriesgo en internet: Safety. net. *Revista de Psicodidáctica* . <https://doi.org/10.1016/j.psicod.2024.01.004>
- Safaria, T., Arini, DP, & Saputra, NE (2023). Spiritual Mindfulness-Based Intervention for Nomophobia: A Randomized Controlled trial. *Islamic Guidance and Counseling Journal* , 6 (2). <https://doi.org/10.25217/0020236404400>
- Tomczyk, Ł., & Lizde, E. S. (2022). Nomophobia and Phubbing: Wellbeing and new media education in the family among adolescents in Bosnia and Herzegovina. *Children and Youth Services Review* , 137(July 2021). <https://doi.org/10.1016/j.childyouth.2022.106489>
- Torpil, B., & Pekçetin, S. (2022). The effectiveness of two different occupational therapy interventions on time management and on perceived occupational performance and satisfaction in university students with severe Nomophobia: A Single-blind, randomized controlled trial. *Occupational Therapy in Mental Health* , 38 (1), 86-102. <https://doi.org/10.1080/0164212X.2021.1977758>
- Utami, MAP, & Syamsuddin, S. (2020). Nomophobia Behavior Change Through Social Interaction Approach: Single Case Research (Scr). *Preschool: Journal of Early Childhood Development and Education* , 2 (1), 133-140.
- Valenti, G.D., Bottaro, R., & Faraci, P. (2022). Effects of Difficulty in Handling Emotions and Social Interactions on Nomophobia: Examining the Mediating Role of Feelings of Loneliness. *Int J Ment Health Addict* , 0123456789, 1-15. <https://doi.org/10.1007/s11469-022-00888-w>

Williams, A.L., & Bakitas, M. (2012). Family caregivers of people with cancer: new directions for intervention. *J Palliat Med* , 15(7), 775-783.
<https://doi.org/10.1089/jpm.2012.0046>