



## Alleviating student loneliness through mindful podcasts: An experimental study

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### ABSTRACT

This study aims to examine the effectiveness of the Mindful Podcast program in reducing loneliness among university students identified as experiencing mobile phone addiction. Using a quasi-experimental one-group pretest-posttest design, the intervention involved 10 participants who were selected through a screening process using the Mobile Phone Addiction Index (MPAI) and the R-UCLA Loneliness Scale. The Mindful Podcast program integrates mindfulness principles into an audio-based self-help format, delivered over eight 20-minute sessions (160 minutes total). Data were analyzed using repeated measures ANOVA to assess changes in loneliness across three measurement points: pretest, posttest, and two-week follow-up. The results showed a significant reduction in loneliness following the intervention ( $F = 116.169, p < .001$ ), with a large effect size ( $\omega^2 = 0.651$ ). Post hoc comparisons also indicated a strong and sustained reduction, with Cohen's  $d$  values above 2.8. These findings suggest that the Mindful Podcast program is not only statistically effective but also practically valuable as a low-barrier, time-efficient, and accessible intervention for addressing loneliness in digitally dependent students. This study expands the application of mindfulness therapy into immersive audio media, proposing podcasts as active therapeutic tools rather than mere delivery platforms. Practically, universities and mental health practitioners can adopt podcast-based interventions as scalable and screen-free alternatives for promoting student mental well-being, especially where access to conventional face-to-face services is limited.

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## KEY WORDS:

loneliness; mobile phone addict; mindfulness; mindful podcast

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## Introduction

Despite the benefits, technological advancements such as smartphones also pose problems. Excessive use can adversely affect the physical, social and psychological health of its users. Park (2005) revealed that mobile phone addiction occurs due to habit, loneliness, entertaining oneself, relaxing, distracting oneself from problems but maintaining relationships with others (Park, 2005). Ironically, the ease of communication has led to the phenomenon of loneliness because it has reduced the quality and intensity of relationships between individuals (Infiatech, 2016). Instead of getting better social relationships as expected and not feeling lonely, individuals will instead be actively interested in cyberspace and feel lonely, as revealed by Tan et al., (2013) that this loneliness is related to problematic cell phone use (Tan et al., 2013).

Loneliness is an individual's cognitive and emotional reaction to a condition when the individual does not have good or expected social relationships (Baron & Byrne, 2005). Loneliness is defined as a psychological state caused by not fulfilling the need for intimacy (Schultz & Videbeck, 2009). Loneliness arises because individuals feel misunderstood, rejected by others, or have no friends (Yusuf, 2016). People who experience loneliness have certain characteristics such as panic easily, despair, feel dissatisfied, unhappy, lack of enthusiasm, impatience (Rahmawati & Rane, 2010), and have no hope (Baron & Byrne, 2005). This makes people with loneliness will feel a bad impact on their personal life and social relationships with others, because they tend to have maladaptive social thinking (Masi et al., 2011).

The negative impact of loneliness not only affects one's physical (Masaeli & Billieux, 2022) or health (Peltzer & Pengpid, 2019), but also affects cognitive function (Peltzer & Pengpid, 2019), impairs quality of life and mental health (Masaeli & Billieux, 2022; Islam et al., 2023). Loneliness is associated with anxiety (Pengpid & Peltzer, 2022), stress, depression, psychotic experiences (Akram et al., 2024) and even death because it tends to trigger suicidal thoughts (Akram et al., 2024; Glick, 2009), suicide plans and suicide attempts (Pengpid & Peltzer, 2022). With family mediation as a source of social support, loneliness also

impacts depressive symptoms (Kulari, 2024). Loneliness also affects the social life of individuals such as withdrawing and feeling indifferent to the surrounding environment (Yusuf, 2016). Kim et al., (2017) research strengthens the mediating effect between loneliness and depression with attachment anxiety and smartphone addiction (Kim et al., 2017).

Adolescents tend to have poorer mental health compared to adults (Goosby et al., 2013). A survey from the Mental Health Foundation, showed that loneliness in adolescents was 70%, in adults was 60% and in the elderly was 39% (Foundation, 2010). In 2016-2017 1 in 20 adults in the UK said they often or always felt lonely, while younger people (aged 16-24 years) felt more lonely than adults, and by 2021 this proportion increased to 7.2% of the population (Mental Health Foundation, 2022). In adolescent subjects, the results of the Mental Health Foundation survey in 2020 in the UK, as many as 69% of adolescents aged 13-19 years often feel lonely and 59% feel they have no one to talk to (mentalhealth.org). In Bangladesh as many as 72.51% (Islam et al., 2023), Norway as many as 27% in 2017-2019 (Parlikar et al., 2023), Afghanistan 34.8%, Pakistan 11.4% (Hasan, 2024) and 11.7% of 70 countries spread across America, Africa and Asia also experience loneliness, with the ratio of men to women who feel they lack close friends is 1.8 (Igami et al., 2023). As many as 43% of young adults aged 17-25 years in ASEAN including Indonesia and Malaysia feel lonely (Pangestika et al., 2024). In Indonesia alone, 10.6% (11% of females and 8% of males) reported feeling lonely sometimes or all the time (Peltzer & Pengpid, 2019), 1.6% felt more lonely during the COVID-19 pandemic (Indonesia National Adolescent Mental Health Survey, 2022). 6.5% of adolescent girls in Indonesia also experience loneliness almost all the time or even always (Marthoenis et al., 2022)

Cognitive approaches are effective interventions to address loneliness, particularly that caused by smartphone addiction. It works by correcting thinking errors or cognitive distortions to bring about behavioral change (Creswell, 2012). Mindfulness therapy is one form of cognitive intervention that can be used to reduce loneliness (Creswell, 2012; Lindsay et al., 2019). Oktavia (2018) successfully tested the success of mindfulness training in reducing loneliness in adolescents in orphanages (Oktavia, 2018). Similar research was also conducted by Mrazek et al., (2013) stating that mindfulness training can reduce cognitive distortions and improve cognitive function (Mrazek et al., 2013).

There are 3 main components in mindfulness, namely, awareness, present experience, and acceptance (Umniyah & Afiyatin, 2009). Looking at the theoretical concept, mindfulness is the ability of someone who has good

awareness and is not reactive. Mindfulness is a way used to interpret what is happening either positively or negatively in order to avoid feelings of distress and gain self-being (Germer et al., 2005). Mindfulness leads to flexible thinking by being open to new things (Synder & Loperz, 2002). In mindfulness, one does not overreact or emotionally react to thoughts and feelings that arise (Bishop, 2002). A person with a good level of mindfulness will find it easier to control themselves, respond to every event well, and be oriented towards their own well-being.

Psychological interventions and mental health services are generally carried out by professionals face-to-face, but understanding and knowledge to access mental health services is still a problem in Indonesia. misunderstandings about mental illness problems, self-diagnosis, or lack of information about psychological services (Arjadi, 2021; Arjadi et al., 2018) that have an impact on their inability to find appropriate services. Currently, technological advances and the presence of the internet have changed human lifestyles, for example the way humans communicate using the help of smartphones and the internet, even face-to-face meetings can be done online. These advancements can be a potential to develop psychological services that are easy and practical. The researcher tried to use the current popular digital media, namely podcasts, as an alternative to mindfulness therapy.

Podcast is a media that has the ability to create and distribute a personal audio program that is put together in a container and can be accessed by people around the world (Berry, 2006). The emergence of podcasts provides an exciting new option for people in seeking information and entertainment in audio form (Bonini, 2015). Podcasts as an alternative to cognitive intervention media were chosen because of the characteristics of podcasts that are unique and are considered to have many audiences (Siahaan, 2015). By sharing personal experiences, podcasts create a personal connection that makes listeners feel less alone. The theater of mind effect of audio also reinforces this, allowing listeners to imagine the presence of the storyteller as if they were real.

The rise of loneliness among young adults calls for effective and accessible interventions. This research addresses that need by combining mindfulness and podcasts-a novel, previously unexplored approach to addressing loneliness. As a first in Indonesia, the Mindful Podcast program was specifically designed for university students with mobile phone addiction, offering the unique novelty of a non-stigmatizing screen-free solution that leverages popular media. It is this combination that makes this research urgent and novel, with great potential to

produce a relevant and scalable mental health intervention.

## Empirical Studies

This study combines mindfulness techniques with podcast media as a form of intervention to reduce student loneliness. The related research in this study is divided into three studies, 1) the relationship between loneliness and smartphone use, 2) the negative impact of loneliness, 3) mindfulness as an intervention to overcome loneliness.

Related to loneliness, Park (2005) revealed that cell phone addiction is caused by several factors such as habit, loneliness, entertainment, relaxation, distraction from problems, but also to maintain social relationships. However, although communication has become easier, it can reduce the quality and intensity of in-person social interactions. While Tan et al., (2013) found that individuals who experience loneliness tend to be more active in cyberspace, so excessive cell phone use can further increase the risk of loneliness. Research conducted by Kim et al., (2017) examined the relationship between loneliness and smartphone addiction with the attachment anxiety factor. They found that individuals who have attachment anxiety tend to experience loneliness, which then increases their dependence on smartphones as a form of compensation for the lack of quality social interaction.

The negative impact caused by loneliness is explained from research conducted by Masi et al. (2011) state that individuals who experience loneliness often have maladaptive social mindsets, such as feeling unappreciated or unwanted in their social environment. While Masaeli & Billieux (2022), Peltzer & Pengpid (2019), and Islam et al. (2023) highlighted that loneliness can affect one's physical health, such as increasing the risk of chronic diseases and decreasing cognitive function. The negative impact of loneliness is highlighted by Pengpid & Peltzer (2022), Akram et al. (2024) and Glicklen (2009) showed that loneliness is closely related to mental disorders such as anxiety, stress, depression, and even psychotic experiences. Furthermore, loneliness is also associated with an increased risk of suicide, whether in the form of suicidal thoughts, planning, or attempting suicide. Kulari (2024) examined how family support can mediate the impact of loneliness on depressive symptoms. However, many lonely individuals do not have access to adequate social support, making psychological interventions crucial.

The selection of mindfulness as an intervention approach was strengthened by research from Creswell, (2012) and Lindsay et al., (2019) explain that

mindfulness therapy can help individuals recognize and accept feelings of loneliness without having to react negatively to them. By increasing self-awareness and reducing cognitive distortions, individuals who apply mindfulness can develop a more adaptive and healthy mindset. Oktavia (2018) tested the effectiveness of mindfulness in reducing loneliness in adolescents living in orphanages. The results showed that mindfulness training significantly reduced their loneliness level. Mrazek et al. (2013) found that mindfulness can improve cognitive function, which helps individuals to assess social situations more rationally and reduce cognitive distortions that can exacerbate feelings of loneliness. Germer et al. (2005), Synder & Loperz (2002), and Bishop (2002) emphasized that mindfulness trains individuals to have better awareness of present experiences, reduce emotional reactivity, and increase flexibility of thinking. This allows individuals to more easily accept their circumstances and respond to them in a healthier way.

## Method

### Participant Characteristics and Research Design

This study uses a quasi-experiment with a one group pre-test and post-test design to test the effectiveness of the mindful podcast program to reduce loneliness of students with mobile phone addicts. The participants in this study were 10 university students (aged 18-25 years; 6 females, 4 male) who experienced loneliness due to mobile phone addiction. Participants were selected non-randomly based on certain characteristics. The specificity of the targeted problem makes the subjects in the experiment limited, because to find the condition of students who experience loneliness due to mobile phone addicts requires strict selection so that the population becomes relatively small and difficult to reach. The potential bias that arises is a sample that does not represent the target population because the selection is based on characteristics that may not be common. In the sampling process, the researcher has clearly defined the characteristics of the subject both in terms of condition and age. Selection that begins with the screening process and justification from experts is sufficient to reduce the occurrence of bias. In addition, in the screening process, researchers not only used instruments, but also conducted an interview process to strengthen the conditions experienced by participants.

### Sampling procedures

The researcher screened university students and selected them non-randomly to become research participants. As a requirement, the researcher set

the category of participants with loneliness and mobile phone addict scores in the moderate category. Eligible participants were contacted by phone to confirm their willingness to participate in the program. Of the 30 students who were netted, 10 agreed to become research participants. After the participants expressed their willingness, they were then invited to be given an explanation of the program and fill out an informed consent as an agreement to follow the series of intervention activities until completion.

## **Measures and covariates**

The mindful podcast program was delivered by professionals who understand mindfulness techniques and podcasts. Mindful podcast is an 8-week (session) mindfulness meditation intervention that is considered feasible based on the results of professional judgment. Time considerations are based on the results of mindfulness training by Rosentreich & Margalit (2015) & Teoh et al., (2021) conducted for 8 weeks can reduce perceptions of loneliness in adults (Rosentreich & Margalit, 2015; Teoh et al., 2021). Participants were then asked to follow a mindfulness program for 8 sessions (8 weeks) delivered through the medium of podcasts. Mindful podcasts were conducted for 20 minutes per session, totaling 160 minutes. An online meeting was conducted after the implementation of the program in each session to reflect on the participants' feelings and thoughts, and to foster awareness of the experience moment by moment. At the online meeting the facilitator also guided participants to do mindful breathing exercises. Participant attendance was recorded by the researcher at each session. The co-facilitator also monitored the podcast listening process carried out by participants during the 8 sessions.

Researchers used two research instruments in this study, a) Mobile Phone Addict (MPAI) scale developed by Louis Leung. The MPAI scale consists of 18 items arranged based on aspects of inability to control, anxiety, withdrawal, and productivity loss (Leung & Wei, 2007). b) Loneliness Scale adapted from the R-UCLA Loneliness Scale by Russel D. Peplau & Ferduson M. L (O'Donohue & Graybar, 2009). The R-UCLA Loneliness Scale has 20 items arranged based on aspects of personality, social desirability, and depression. Cronbach's alpha value is 0.76 based on the results of the trial conducted.

## **Intervention**

The target of the intervention is to correct the cognitive distortions of the subjects who experience loneliness. Mindful podcast is designed with MBCT (Mindfulness Based-Cognitive Therapy) therapy model. Therefore, its

implementation does not require too much time, namely 8 week (session). Mindful Podcast as an Online Self-Help intervention is structured using mindfulness concepts that are divided into two types of podcast content, namely sharing experience and storytelling. The podcast is divided into 2 forms, namely episodes containing the experiences of each subject through experiential learning in the interview process, while the other part contains stories with mindfulness concepts arranged in a storytelling with a monologue technique. The aspects of mindfulness consist of observation, description, awareness of action, and acceptance without judgment (Baer et al., 2004). All of these aspects are incorporated into a narrative story that is delivered using storytelling techniques. Each episode the subject will be listened to a story where at the end of the story the concept of mindfulness contained therein will be explained. In addition, subjects are also given material about the basics of meditation techniques that can be practiced by themselves with the Mindful Podcast guide. So that the subjects can learn the concept of mindfulness in a slightly different way, not learning from the module provided or just listening to the explanation of the training speaker. The selection of podcast content as an alternative to cognitive intervention media is also inseparable from the characteristics or advantages of podcasts as audio content (Siahaan, 2015). Audio content has something that cannot be conveyed through audio-visual content and audio content has its own uniqueness for its audience.

## **Data analysis**

Data analysis using repeated measure ANOVA which aims to test differences in subject conditions before, after and 2 weeks after being given the Mindful Podcast program treatment to reduce loneliness of students who experience mobile phone addiction.

## **Result**

The results showed that mindful podcasts effectively reduce loneliness in students who experience mobile phone addiction. Based on Table 1, the p-value (0.000) <0.05 indicates that there is a significant difference in student loneliness from before (pre-test), after (post-test), and 2 weeks after treatment (follow-up) undergoing mindful podcast therapy. Omega squared ( $\omega^2$ ) of 0.651 indicates that mindful podcast therapy has a large effect in reducing student loneliness.



**Table 1**  
*Results of ANOVA Repeated Measure Analysis*

Cases	Sphericity Correction	Sum of Squares	df	Mean Square	F	p	$\omega^2$
Loneliness	Greenhouse-Geisser	1733.067	1.356	1277.787	116.169	< .001	0.651
Residuals	Greenhouse-Geisser	134.267	12.207	10.999			

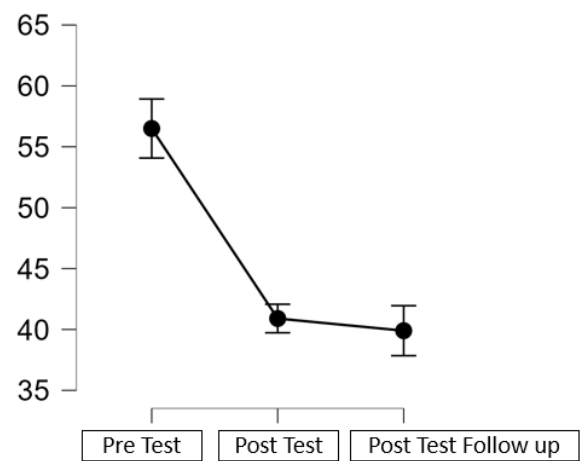
*Note.* Type III Sum of Squares

This is in line with Table 2, there is a change in the average value which is decreasing and can also be seen in Figure 1. The average pretest and posttest show a significant difference. While the average from posttest to follow-up does not show a significant decrease but the effect of mindful podcast therapy still persists up to two weeks after treatment.

**Table 2**  
*Descriptive Data of Loneliness*

	N	Mean	SD	SE
Pre-Test	10	56.500	2.838	0.898
Post-Test	10	40.900	5.896	1.865
Follow Up	10	39.900	7.031	2.223

**Figure 1**  
*Descriptive Plot of Student Loneliness*



**Table 3**  
*Post Hoc Comparisons - Loneliness*

		Mean Difference	SE	t	Cohen's d	pbonf
Pre Test	Post Test	15.6	1.221	12.772	2.813	< .001
	Follow Up	16.6	1.221	13.591	2.993	< .001
Post Test	Follow Up	1	1.221	0.819	0.18	1

Note. P-value adjusted for comparing a family of 3

Table 3 shows that Cohen's d coefficient value of 2.813 indicates a very large effect (Cohen, 1988; Field, 2013; Sawilowsky, 2009), which means a significant reduction in loneliness after listening to mindful podcasts. The Cohen's d coefficient value of 2.993 also indicates a very large effect on the reduction in loneliness that persists after the mindful podcast or further reduction after two weeks of treatment. This is supported by the absence of a significant difference between the post-test and follow-up ( $p=1.000 > 0.005$ ), indicating that loneliness levels remain low after two weeks of treatment.

These results indicate that the changes observed were not due to chance but rather the effect of the mindful podcast therapy. One reason for this success is that participants could continue listening to the Mindful Podcast program even after it had concluded. This is also one of the strengths of this study, as it enhances the effectiveness of the Mindful Podcast program.

## Discussion

Basically, humans are social creatures who need to connect with others in their daily lives. This social relationship is considered a basic human psychological need. Loneliness is a problem that many people face today, especially teenagers and young adults. Technological advances in today's digital era not only make it easier for individuals to communicate, but also cause loneliness. The results of research conducted by Infiatech (2016), Park (2005) & Tan et al. (2013) show that loneliness is one of the causes of people who experience mobile phone addiction. This is because excessive use causes them to become more interested in cyberspace. Someone who experiences mobile phone addiction will feel more comfortable when in cyberspace. Then the effect increases so that it affects the quality and intensity of their social relationships, which ultimately leads to loneliness. The assessment results show that all participants in this study have experiences of using smartphones, namely 1) Playing smartphones even though they are in front of other people, 2) Doing

daily activities with smartphones, 3) Looking for "story friends" from social media content. The participants' smartphone use leads to addiction based on the duration and intensity of use, which results in the emergence of loneliness as an effect of excessive smartphone use.

This study aims to examine the effectiveness of mindful podcasts in reducing loneliness in college students who experience mobile phone addiction. Although there is no evidence of the use of mindfulness-based podcasts as a program to reduce loneliness, research that examines the effect of mindfulness in reducing loneliness has been carried out and provides significant evidence (Creswell, 2012; Lindsay et al., 2019; Matthaeus et al., 2024; Teoh et al., 2021; Veronese et al., 2021). Mindfulness is an approach that is considered effective to reduce or alleviate psychological problems, such as stress, anxiety and depression that contribute to loneliness. Mindfulness can improve emotional well-being and reduce stress, thus reducing feelings of loneliness (Shonin et al., 2014). Dispositional mindfulness and self-compassion are also significantly negatively associated with rejection sensitivity and loneliness (Xie et al., 2023). This state of mindfulness in individuals also makes them better prepared to cope with loneliness in the future (Besse et al., 2022)

Mindfulness emphasizes awareness through mindfulness. Through mindfulness, individuals are encouraged to be more aware of their thoughts and emotions and not get stuck in repetitive negative thought patterns. By doing so, individuals are expected to achieve acceptance so as to reduce the impact of their loneliness. In principle, mindfulness therapy targets emotion regulation and rumination, which are important factors in overcoming loneliness. Awareness of one's emotions can reduce the tendency to overreact to the negativity that comes with loneliness, allowing them to process the experience in a more adaptive way, which indirectly reduces feelings of loneliness.

The Mindful Podcast program proved to have an effect on reducing loneliness. The changes shown are seen from the difference in participants' loneliness scores between pretest, posttest and follow-up conducted two weeks later. Repeated measurements were taken to see the consistency of the effect of reducing loneliness from the mindful podcast program. A large effect size indicates that the changes that occur are indeed caused by the administration of the mindful podcast program, not occurring by chance. This change appeared significantly between the conditions before and after the mindful podcast program was given. Although the results of the test between the post-test and follow-up, which was conducted two weeks after the post-test was conducted, did not show significant results, the decrease that occurred can be evidence that

mindful podcasts still have an effect. The insignificant results between the post-test and follow-up may be due to an increase in loneliness scores in some subjects (3 out of 10 subjects) although still in the same category. In addition, there are also internal and external factors that may affect the results, which cannot be identified by the researcher, such as stress conditions, motivation, awareness to continue practicing through podcasts and the environment for listening to podcasts.

What supported the success of the program was the accessibility of the program. Participants were still able to listen to the mindful podcast even after the program was completed. Their frequent access encouraged the effectiveness of the program. Mindful podcasts are also designed with the MBCT (Mindfulness Based-Cognitive Therapy) therapy model so that implementation does not take too long. Through this awareness and cognitive change, it can help subjects interact with the environment. In addition, the mindful podcast program is an online self-help intervention that is structured based on the concept of mindfulness which is packaged in the form of sharing experiences and storytelling, so that even though it is personal, it can provide experience and social support to them.

Theoretically, this research contributes to expanding the theory of mindfulness beyond visual-interactive media (applications) to the realm of immersive audio. Its main novelty is positioning podcast media not merely as a 'container' for messages, but as an 'active component' of the therapy itself. The idea is that the intimate, screen-free audio experience inherently counteracts the isolation and distraction mechanisms of smartphone addiction. Thus, these findings support a new theoretical model: solutions to digital pathology issues may be more effective when using sensory modalities that contrast with the source of the problem, paving the way for more media-specific mental health intervention theories.

## Conclusion

This study provides strong evidence that the mindful podcast program is effective in reducing college students' loneliness due to mobile phone addiction. Theoretically, the results of this study provide empirical evidence of the benefits of mindfulness in reducing loneliness in university students. Practically, faculty advisors or counseling unit managers at universities can directly integrate short podcast episodes into counseling sessions or recommend curated playlists as self-help tools for students. At the institutional level, the Psychology Services Center can take strategic steps by developing an official campus podcast series or widely

promoting wellness playlists. In this way, podcasts can be utilized not merely as an alternative but as a proactive and integrated tool for promoting mental health within the university environment.

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