

## The Effect of Dependence on Cell Phones on the Mental Health of Prospective Teachers

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### Abstract

Mental health is a vital condition for a person because it can affect every aspect of their life. However, mental health does not escape the factors that affect it. One factor that can affect mental health is the use of mobile phones. For aspiring teachers, mobile phones have become integral to their daily activities. However, various studies have found that dependence on mobile phones can hurt a person's mental health. This study aims to analyze the impact of dependence on mobile phones on the mental health of prospective teachers, dimensions of mental health, and aspects of mental health influenced by dependence on mobile phones. This study used a correlational quantitative method. Data was collected through questionnaires distributed to 231 PAI IAIN Ponorogo students—data analysis using simple linear regression. The results showed that there was an effect of dependence on mobile phones on mental health, with an influence of 19%. Dependence on cell phones also affects psychological distress but does not affect psychological well-being. Moreover, it affects anxiety, depression, uncontrollable emotions, and life satisfaction but does not affect positive feelings and emotional bonding.

### Keywords

Addiction; Cell Phones; Mental Health; Students

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## 1. INTRODUCTION

Mental health is defined by the WHO (Organization, n.d.) as a state of balance, both within and with the environment. That is, mental health is more than the absence of mental disorders; it means that a person can think, learn, and understand his emotions and other people's reactions to him.

Global mental health conditions According to WHO records, in 2017, 450 people were experiencing mental disorders. (Kemenkes, n.d.). Meanwhile, conditions in Indonesia in 2018 showed that more than 19 million people aged more than 15 years experienced mental and emotional disorders, and more than 12 million people aged more than 15 years experienced depression. Meanwhile, suicide data in 2016 was obtained from as many as 1,800 people per year or every day. There were 5 people committing suicide, and 47.7% of suicide victims were at the age of 10-39 years old, which were teenagers and productive age. So, according to the Director of Prevention and Control of Mental Health and Drug Problems, Dr. Celestinus Eigya Munthe, for now, Indonesia has a prevalence of people with mental disorders of about 1 in 5 population, meaning about 20% of the population in Indonesia has potential mental disorders. (KemenkesRI, 2021).

Good mental health is essential for every human being, especially for prospective teachers of Islam. In general, health becomes the basis of the well-being and effective functioning of the individual. Several studies reveal a strong positive relationship between mental health and improved academic performance. Conversely, if someone has problems with mental health, it will also hurt their academic performance. (Zada et al., 2021). Other studies have shown that the positive components of mental health positively affect job satisfaction, while the harmful components negatively affect job satisfaction. (Cao et al., 2022), And mental health also affects a person's ability to resolve conflict (Deghan Neery & Beheshtifar, 2015). Research on the effect of mental health on a teacher is related to student well-being (Harding, Sarah; Morris, Richard; Gunnell, David; Ford, 2019). Other findings reveal that teachers' mental health influences the development of learning resources and self-development (Jimenez, 2021).

Good mental health will increase the productivity of one's life, and for that, it needs systematic efforts to maintain it. One form of anticipation is to eliminate the causes that can disturb him; one of the factors that affect mental health is excessive use of mobile phones (smartphones). The phenomenon of *smartphone* use has become an integral part of most people's daily routines. This condition is also seen among prospective teachers. They spend over five hours on mobile phones and experience barriers to face-to-face social contact. (Bratina, 2019b). The use of mobile phones has become a lifestyle of the millennial generation; this is clearly illustrated in the millennial generation, who are technologically advanced and tend to accommodate technology into their lives. Furthermore, Nichols quoted Bannon et al. for millennials, using technology (in this case, mobile phones) and social media is natural and essential. (T. J. Smith & Nichols, 2015).

The prevalence of mobile phone use, especially among young people, is increasing not only because of the characteristics of their generation but also because of the rapid development of technology embedded in mobile phones. With this renewable technology, it can provide many choices of functions and portability for one's mobility. (Chen et al., 2021). The use of mobile phones in Indonesia can be seen from the use of Information and Communication Technology by households, such as BPS (Badan Pusat Statistik RI, 2019) Issuing data release in the last 5 years, it is known that until 2019 the use of cellular phones rose to 63.53%, this shows that mobile phone users have increased very rapidly. Meanwhile, the latest data from datareportal.com (Portal, 2022) shows there are 370.1 million mobile connections in Indonesia at the beginning of 2022. This data shows that many people use more than one cellular connection; therefore, the number of cellular connections significantly exceeds the total population. When compared to the total population, the percentage of cellular connections in Indonesia can be equivalent to 133.3 percent of the total population in January 2022. Moreover, mobile connection usage in Indonesia increased by 13 million (+3.6 percent) between 2021 and 2022. There are many reasons why someone uses a cell phone in their daily life in addition to being a hallmark of the millennial

generation. Some studies suggest that a person's dependence on mobile phones is due to the urge to explore new things, seek approval on social media, develop new friendships, improved technology, strong effects on the human brain, feelings of happiness and satisfaction, seeking gifts, liking one, lack of strict laws, lack of supervision from parents (Naik et al., 2019). Dependence on mobile phones is also affected by narcissism, openness, neuroticism, and age (Pearson, 2016); gaming, communication on social networks, and gender (Martínez-sánchez et al., 2020); gender, neuroticism, extraversion, and openness (Biglu & Ghavami, 2016).

Although it offers humanity convenience, such as providing various learning resources, ease in doing daily work, and bridging the gap of information and communication among colleagues. However, using mobile phones, as revealed by Manvin Kaur, Kuldip Singh, and Narina A. Samah, is considered like a double-edged knife. On the one hand, using mobile phones makes it easier for young people to increase the frequency of social communication, improve relationships, and make new friends. On the other hand, improper use of mobile phones affects young people negatively. However, the use of mobile phones for adolescents outweighs the positive effects. (Kaur et al., 2018).

The picture of mobile phone usage behavior in America with a total online time of about 6 hours a day in 2016 increased by 82% compared to 2008 (Twenge et al., 2019). The results of another study showed that 64% of American adults now own a smartphone, up from 35% in the spring of 2011 (A. Smith, 2015). About mobile phone addiction rates in New York, 59% of parents said they felt their teen was addicted to mobile devices, 50% of teens said they felt addicted to their phones, with 77% of parents said their teens are distracted by their devices and do not pay attention when they are together. (HuffPost, 2016).

Various studies show the negative impact of excessive cell phone use (read: addiction). Improper cell phone use can reduce an individual's concentration in class, hinder face-to-face communication, and even cause mental or physical stress. The prevalence of mobile phone addicts ranges from 0% to 38% of mobile phone users in various cultures and societies, indicating that at least 62% of mobile phone users have the possibility of addiction. (Chen et al., 2021). Symptoms of this addiction can be seen from the duration of cell phone use in a person, according to a New York Times report (2017) (Douillard, n.d.) Adults and teenagers check their phones 150 times a day, i.e. every 6 minutes and send an average of 110 texts per day. Lee also found that phones are the first thing users look for in the morning and the last thing they look at before bed (Lee et al., 2014).

The picture of improper cell phone use as above if it lasts a long time, according to Fook (Fook & Narasuman, 2022) Negative or addictive phone use has a negative association with academic behavior. This explanation is substantiated by several studies, which found that mobile phones affect students negatively in their learning process, such as decreased academic performance (Hossai, 2019), Study habits (Journal et al., 2022), lower learning scores (Elder, 2013), can have adverse effects on health (Duygu Akçay1, 2018), Sleep quality and its components (Bayatiani et al., 2016), serta insomnia (Chandra, 2019). Other studies have also shown that the use of mobile phones in social media applications *has a social impact on adolescents, namely the emergence of mental health disorders in the form of apathy* (Sari, 2020), withdrawal, tolerance, fear, task avoidance, and anxiety (Rodríguez et al., 2020), and social problems (lack of social interaction in real life and emerging problems in interpersonal relationships) (Kaur et al., 2018), and more aggressive (anger and physiological aggression) (Kalantari & Maleki, 2015).

Various studies show the negative impact of excessive cell phone use (read: addiction). Improper cell phone use can reduce an individual's concentration in class, hinder face-to-face communication, and even cause mental or physical stress. The prevalence of mobile phone addicts ranges from 0% to 38% of mobile phone users in various cultures and societies, indicating that at least 62% of mobile phone users have the possibility of addiction. (Mental et al., 2021). Based on the explanation above, this study wants to test three hypotheses, namely: first, dependence on mobile phones has a significant effect on

the mental health of prospective religious teachers; Second, dependence on mobile phones has a significant effect on two dimensions of mental health (psychological distress and psychological well-being), and third, the effect of dependence on mobile phones on six aspects of mental health (anxiety, uncontrolled emotional/behavioral depression, positive feelings, emotional bonding, and life satisfaction).

## 2. METHOD

This study uses a quantitative approach with a correlational type of research to see the influence and magnitude of the influence of the independent variable (X Dependence on Mobile Phone Use) on the dependent variable Y1 (mental health) and the variable Y2 (aspects of mental health). Data collection using questionnaires distributed to 231 6th semester students majoring in PAI IAIN Ponorogo from 480 populations or 48% of the population. The instrument for the variable dependency of mobile phone use is designed with a Likert scale. Meanwhile, the questionnaire for mental health was adapted from the Mental Health Inventory (MHI-38), which consisted of 38 items developed from 6 aspects (anxiety, depression, uncontrolled emotions/behaviors, positive feelings, emotional bonding, and life satisfaction) and 2 dimensions (psychological pressure and psychological well-being. (Davies AR, Sherbourne CD, Peterson JR, and Ware JE, 1998). The questionnaire was distributed through Google form to the research sample—data analysis using simple linear regression with the help of the SPSS 19 computer application. Data analysis was carried out three times first tested the hypothesis of the effect of mobile phone dependence on mental health, the second was a hypothesis test analysis of the effect of mobile phone dependence on two dimensions of mental health, and the third tested the hypothesis of the effect of mobile phone dependence on six aspects of mental health.

## 3. FINDINGS AND DISCUSSIONS

### *The Effects of Dependence on Mobile Phones on Mental Health*

The results of the research analysis prove the hypothesis that dependence on mobile phones has a significant effect on mental health, regression lines, and the amount of contribution, as in the following table:

**Table 1.** ANOVA<sup>b</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6386.616	1	6386.616	53.672	.000 <sup>a</sup>
	Residual	27249.315	229	118.993		
	Total	33635.931	230			

a. Predictors: (Constant), phone addiction

b. Dependent Variable: mental health

The results of the research analysis prove the hypothesis that dependence on mobile phones has a significant effect on mental health, regression lines, and the amount of contribution, as in the following table.

**Table 2.** Coefficients<sup>a</sup>

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	102.242	3.510		29.131	.000
ketergantungan pada ponsel	1.314	.179	.436	7.326	.000

a. Dependent Variable: mental health

The coefficients table above shows the regression coefficient or regression equation listed in column B. The constant value of 102.242 and regression coefficient value of 1.314, which, if put into the regression equation, becomes  $102.242 + 1.314x$ , can be interpreted that cellphone dependence will increase its effect on mental health by 1.314.

**Table 3.** Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.436 <sup>a</sup>	.190	.186	10.908

a. Predictors: (Constant), ketergantungan pada ponsel

The above summary model table in column R square shows a coefficient of determination of 0.190. This means that variations in dependence on mobile phones could explain 19% of the variation in mental health, the remaining 81% due to other factors.

The results of hypothesis testing show that there is a significant influence between dependence on mobile phones and mental health. The results of this study are in line with research that revealed that students' mental health is affected by mobile phone use. (Begum, 2014). Dependence on mobile phones is one part of the five factors that affect mental health and the magnitude of the effect according to Shivam Jhunjhunwala is 15.27% (Jhunjhunwala et al., 2020). Based on this, it can be concluded that someone dependent on mobile phones will affect their mental health. How the reality of mobile phones affects mental health is seen in daily activities, as reported by Lee et al (Lee et al., 2014) That the phone is the first thing users look for in the morning and the last thing they look at before going to bed. Normally, people who have good mental health are characterized by a balance of life both social and psychic as defined by WHO (Organization, n.d.) as the ability to think, learn, and understand one's emotions and others' reactions to oneself.

Theoretically, a person who is dependent on mobile phones will affect his critical thinking skills, learning process, emotions, and reactions to the environment. As revealed by Alber Ellis (Nelson-Jones, 2011), Emotions and behavior are always interrelated. Because thoughts and emotions are intertwined, sometimes thoughts become emotions, and one's emotions become thoughts. In turn, the behavior shown by a person is caused by his thoughts or emotions, and the action itself will also affect his way of thinking and emotions. If it is associated with dependent behavior with mobile phones, it can be described that a person has felt that the cell phone can satisfy him so that thoughts and emotions are tied to it. When emotions and thoughts are fixed on something, it will feel a sense of loss if something bound earlier (in this case, a mobile phone) is not in its activities; this is called irrationality in humans.

Irrationality felt by a person related to the use of mobile phones will make him feel unable to separate from his cell phone. Studies have revealed that there is a positive relationship between the level of mobile phone addiction and negative emotions, especially in people who experience interpersonal problems. (Chen et al., 2021). That is, irrational emotional states can be affected by excessive use of mobile phones.

### ***The Effect of Dependence on Mobile Phones on Two Dimensions of Mental Health***

The effect of dependence on mobile phones on mental health, as tested by the first hypothesis above has a significant effect. Testing the second hypothesis needs to be done to analyze in detail the effect of dependence on mobile phones on two dimensions of mental health, namely psychological distress and psychological well-being. This means that people with good mental health are reflected in the lack of psychological pressure they experience and the high psychological well-being they feel. It is worth re-examining whether dependence on mobile phones affects increasing psychological distress or improving psychological well-being. The results of statistical tests are obtained in the following table.:

**Table 4.** Effects of Dependence on Mobile Phones on Psychological Distress and Psychological Well-Being

Dimensions Of Mental Health	sig	F-count	> / <	F-table	Regression line	R square
Psychological pressure	.000 <sup>a</sup>	89.689	>	3.89	55.121 + 1.362x	.278
Psychological well-being	.708 <sup>a</sup>	.141	<	3.89	47.121 + -.048x	.001

Based on the table above, dependence on mobile phones affects increasing psychological pressure, characterized by f count 89,689 and significance 0.000 less than probability 0.05. The regression line column shows a constant of 55,121 while the predictor variable is 1,362, meaning the more dependent a person is on a mobile phone will increase psychological distress conditions by 1,362. The amount of dependence on mobile phones on psychological distress was 27.8%, and the remaining 72.2% was influenced by other factors.

Meanwhile, from Table 4 above, it was found that dependence on mobile phones did not have a significant effect on psychological well-being. This was seen from the f count of 0.141, and the significance of 0.708 was more significant than the probability of 0.05. In the regression line column, the value of the constant is 47.121, and the predictor is -.048. From this regression line, it can be explained that the predictor value showed negative, which means that the predictor of dependence on mobile phones did not improve psychological well-being; on the contrary, it decreased it by 0.048.

The results of this study are by the research of Manvin Kaur Kuldip Singh Narina A. Samah, which confirms that the use of mobile phones for adolescents outweighs the positive impacts. (Kaur et al., 2018). Mobile phones with various features that are *always up to date* become prevalent for someone to use surfing in various applications available. This, in turn, can interfere with his well-being and can increase psychological pressure on him. These symptoms can be seen in his life, one of which is the occurrence of sleep disorders. Research by Duygu Akçay & Bülent Devrim Akça found that cellphone use affects the quality of a person's sleep where the longer the duration of cellphone use will reduce the quality of their sleep. (Duygu Akçay1, 2018).

Based on the study results above, it can be concluded that dependence on mobile phones affects mental health in general. In particular, dependence on mobile phones will increase psychological distress and affect lowering psychological well-being of college students.

#### ***The Effect of Dependence on Mobile Phones on Aspects of Mental Health***

The results of the study to look at the effect of dependence on mobile phones on anxiety, depression, uncontrollable emotions, positive feelings, emotional bonding, and life satisfaction are seen in Table 5 below.

**Table 5.** The Effect of Dependence on Mobile Phones on Six Aspects of Mental Health

Mental health aspects	sig	F-count	> / <	F-table	Regression line	R square
Kecemasan	.000 <sup>a</sup>	73.359	>	3.89	20.753 + .684x	.243
Depresi	.000 <sup>a</sup>	74.842	>	3.89	7.425 + .317x	.243
Emosi tak terkendali	.000 <sup>a</sup>	30.972	>	3.89	26.943 + .360x	.119
Perasaan positif	.067 <sup>a</sup>	3.384	<	3.89	30.164 + -.183x	.015
Ikatan emosi	.370 <sup>a</sup>	.807	<	3.89	4.814 + .026x	.004
Kepuasan hidup	.002 <sup>a</sup>	9.708	>	3.89	4.286 + -.054	.041

From the table above, two aspects are not influenced by dependence on mobile phones, namely aspects of positive feelings and emotional bonds. In comparison, four other aspects are known to be influenced by dependence on mobile phones, namely anxiety, depression, uncontrollable emotions, and life satisfaction. If classified again, the six aspects are grouped into psychological pressure and psychological well-being. Aspects of anxiety, depression, and uncontrollable emotions belong to the category of psychological distress, while positive feelings, emotional bonding, and life satisfaction are

part of psychological well-being. Of the two categories above, in the psychological distress category, all aspects are affected by dependence on mobile phones. In contrast, the psychological well-being category is the only aspect of life satisfaction affected by dependence on mobile phones. This finding is exciting to explain further.

The results stated that dependence on mobile phones had a significant effect on anxiety with a significance level of  $0.000 < 0.05$  compared to a probability of 0.05 with an effect of 24.3%. The results are in line with previous research by Jocelyne Matar Boumosleh & and Doris Jaalouk who found that anxiety scores emerged as independent positive predictors of cell phone addiction (Matar Boumosleh & Jaalouk, 2017). This can happen as the results of research by Kelly H. Mannion & and; Susan A. Nolan because of the so-called *fear of missing out (FoMO) fear of missing out, such as fear of missing news, messages, models, games, etc. They do not want to be far from the phone and this is what makes anxiety appear* (Mannion & Nolan, 2020).

This study also showed that dependence on mobile phones affected increasing depression with an effect of 24.3%. The results of this study support previous research conducted by Aljohara A. Alhassan, et al found that there was a significant positive linear relationship between mobile phone addiction and depression ( $y = 39.2 + 0.8 x$ ;  $P < 0.001$ ) (Alhassan et al., 2018). Similarly, research by Dalia El-Sayed Desouky & and Hany Abu-Zaid also found that there was a positive and significant correlation between dependence on mobile phones on depression with an  $r$  value of 0.534 and a significance of  $0.001 < 0.05$  (Desouky & Abu-Zaid, 2020).

Dependence on mobile phones on uncontrolled emotions was also found to have a significant effect with a significance of  $0.000 < 0.05$  and a determination of 11.9%. Previous studies such as the research of Zhanna Sarsenbayeva, et al. proved that cellphone use will affect emotions such as disgust, joy, sadness, and surprise (Sarsenbayeva et al., 2020). The various applications enjoyed on mobile phones provide various messages that can affect one's emotions; it can be because of interest in content that fosters joyful emotions or other unexpected content that makes you surprised and other examples. It can be concluded that dependence on mobile phones will affect uncontrollable emotions.

The study found no effect of dependence on mobile phones on positive feelings, with a significance of  $0.067 > 0.05$ . This means that dependence on mobile phones does not make feelings positive but, on the contrary, makes feelings harmful. When students are socially influenced, feel they have social needs, feel comfortable, and perceive the ease of use of mobile phones which in turn has an impact on cellphone dependence behavior. This can be explained by the amount of time spent surfing with their smartphones so that the time needed to interact socially is reduced, which in turn causes social conflicts, primarily related to their close people (read: family). Conditions like this are by research (Bratina, 2019a) which suggests that college students use mobile phones for more than five hours a day, thus preventing them from interacting in person.

Dependence on mobile phones also did not affect emotional bonding, which proved the significance of  $0.377 > 0.05$ . The results of this study revealed no effect of attachment to mobile phones on emotional attachment in the sense of emotional attachment in social reality; they were tied to mobile phones and the person they were connected to but disrupted in social interaction. This study reinforces previous research that revealed excessive use of mobile phones will result in adverse effects, one of which is the inability to socialize (Quratul Ain, 2022).

The last significant finding of this study is that dependence on mobile phones has a significant effect on life satisfaction, with a significance of  $0.002 < 0.05$  with an effect magnitude of 4.1%. The results of these findings can explain that the condition of people who are addicted in any case will interfere with other aspects of their lives. People who are addicted to drugs will feel tormented if they do not take drugs for a specific time and feel satisfied when they have consumed them. Moreover, even for people with an addiction, taking drugs is *problem-solving* for them. Here, we see how the condition of

addicted people will affect their cognitive to think realistically, objectively, and critically so that something that should be a bigger problem is accepted as a solution.

#### 4. CONCLUSION

This study proves that dependence on mobile phones for prospective teacher students affects their mental health in general, with an effect of 19%. The results also showed that dependence on mobile phones had an effect on increasing psychological distress but did not affect psychological well-being. In addition, this study also proves that dependence on mobile phones has an impact on depression, anxiety, and uncontrolled emotions, life satisfaction. Meanwhile, it will lower the level of emotional attachment and positive feelings.

Based on the research results above, mental health for prospective teachers must be maintained and developed. Healthy mental development and maintenance can be done with various efforts to neutralize emotional and thought disorders that lead to unproductive behavior. Efforts that can be made are with the literacy movement of the proper use of mobile phones for students to form prospective teachers who have a healthy mentality. In addition, recommendations for future researchers can examine more deeply related aspects of mental health about cell phone use on other variables.

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