INTRODUCTION

COVID-19 has become a pandemic in various countries, including Indonesia. Its presence changes the education culture. Learning previously carried out at school turned into home through online learning. All levels of education, both public and private, are targeted for online learning. This follows Circular 4 of 2020 concerning the Implementation of Education Policies in the Emergency Period for the Spread of Corona Virus Disease (COVID-19).

In online learning, smartphones are one of the main devices necessary to use. Students as generation Z have a higher dependence on smartphones than television. The average smartphone access time for students is 9 hours daily. according to the previous study, is a new potential outbreak among Riau University students, nomophobia, or fear of people when they are away from their smartphones. This condition may happen due to the development of internet access and the use of smartphones by students. The nomophobia of people who are still learning or a student is higher than those who work. Online learning that requires more frequent smartphone access will further increase nomophobia.

Based on the characteristics of students and several previous studies on nomophobia, this study aims to assess the nomophobia level of students. The case study used is a student of higher education. As participants in online learning, students' readiness as one of the human resources in higher education needs to be identified with their level of nomophobia. This is important so that online learning can be successfully held, considering that nomophobia will hinder the success of online learning.

METHODS

Study Design

This study uses a quantitative approach, so data collection was done using a questionnaire.

Data Collection

Data collection was carried out within a specified period to describe a picture of the population condition. Through this questionnaire, the respondent's level of nomophobia can be known. The questionnaire was compiled based on the four dimensions of nomophobia proposed by Yildirim (2015): anxiety about not being able to communicate, anxiety about losing connectedness, anxiety about losing being able to access information, and losing convenience (giving up comfort). These four dimensions were translated into 20 questionnaire statements. The scale used in the questionnaire is a 1-7
Likert scale, with 1 for very inappropriate to 7, which means very appropriate. The questionnaire was given online to students as respondents of this study. Respondents were selected randomly from various universities and study programs through simple random sampling.

Before being used to measure the level of nomophobia, the questionnaire instrument was tested for validity and reliability. Validity testing determines whether the questionnaire instrument used is valid or can be used to measure the level of nomophobia. Meanwhile, reliability testing aims to confirm whether the instruments used can be trusted as a data collection tool and can reveal information on the same subject. The validity was determined by the Pearson bivariate correlation formula in a 2-way (2-tailed) test, and the reliability was determined by Cronbach’s Alpha (α) value. Both are done with the SPSS tool. The questionnaire data was declared valid if the value of the Pearson correlation was greater than the value of the r-table. Then, the questionnaire data was declared reliable if the Cronbach’s Alpha (α) value was more than 0.6.

**Data Analysis**

The analysis in this study was based on two results, namely descriptive analysis and analysis of the level of nomophobia. Descriptive analysis was done by processing respondents’ biodata to determine the distribution of respondents used in the study. Meanwhile, in the analysis of nomophobia, the data for the answers to the questionnaire statements were processed, which aims to determine the level of nomophobia of each respondent and the entire respondent. Data processing for the analysis of the level of nomophobia was done by calculating each respondent’s score. As explained earlier, each statement on the questionnaire has a score of 1 to 7. The level of nomophobia of each respondent was determined by the total value of all statements on the questionnaire so that each respondent would have a total score ranging from 20 to 140. The results were grouped according to the level of nomophobia, as presented in Table 1. There are four nomophobia levels: not nomophobia, mild nomophobia, moderate nomophobia, and severe nomophobia.

**RESUL TS**

**Validity and Reliability Test Results**

The initial stage before data processing is to ensure that the questionnaire instrument...
used in the study is valid and reliable. In this study, validity and reliability tests were conducted on 20 questionnaire questions. Validity testing is done by comparing the Pearson correlation value with the \( r \) table value. For the instrument to be called valid, the Pearson correlation value must be greater than the \( r \) table value. The results of the validity test are presented in Table 2. Based on Table 2, all question items have a Pearson correlation value that is greater than the value of the \( r \) table, so it can be concluded that the questionnaire instrument is valid.

While the reliability test is based on Cronbach’s Alpha value. The questionnaire instrument is reliable when Cronbach’s alpha value is greater than 0.6. As shown in Table 3, all question items meet the reliable requirements so that the questionnaire instrument can be used to measure the level of nomophobia.

**Descriptive Statistic Analysis**

In the data collection process, 287 respondents were obtained, then the demographics of the respondents will be explained. Respondents can be grouped by gender, age, internet fund source and online learning media used. In the data collection process, 287 respondents were obtained, then the demographics of the respondents will be explained. Respondents can be grouped by gender, age, internet fund source and online learning media used.

Based on gender, 29% of respondents were male and 71% were female respondents. The composition of respondents based on gender is presented in Figure 1. While Figure 2 presents the grouping of respondents based on age which refers to the age grouping of the Ministry of Health of the Republic of Indonesia in 2009. Respondents in this study were aged from 17 - 40 years so they can be grouped into two categories, namely adolescents (12-25 years) and adults (26-45 years). Based on Figure 2, most of the respondents are adolescents (99%) while the remaining 1% are adults.

In online learning, internet quota is one of the main needs that must be prepared. Currently, the government has provided a quota subsidy to support educators and students in online learning. This study also explores data related to student internet funding sources. Based on the results of the questionnaire presented in Figure 3, it is known that there are 14% of respondents use internet subsidies from the government, while 86% of respondents

![Figure 1. Number of Respondents by Gender.](image1)

![Figure 2. Number of Respondents by Age.](image2)

<table>
<thead>
<tr>
<th>Online Learning Media</th>
<th>Number of Respondent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online meeting application, LMS, Social Media</td>
<td>104</td>
</tr>
<tr>
<td>Online meeting application</td>
<td>80</td>
</tr>
<tr>
<td>Online meeting application, LMS</td>
<td>72</td>
</tr>
<tr>
<td>Online meeting application, Social Media</td>
<td>21</td>
</tr>
<tr>
<td>LMS</td>
<td>6</td>
</tr>
<tr>
<td>Online meeting application, LMS, Social Media, Miro</td>
<td>1</td>
</tr>
<tr>
<td>Online meeting application, LMS, Social Media, Quiziz</td>
<td>1</td>
</tr>
<tr>
<td>Social Media</td>
<td>1</td>
</tr>
<tr>
<td>LMS, Social Media</td>
<td>1</td>
</tr>
</tbody>
</table>
use the internet at their own expense.

Online learning media is a need that is no less important than internet quotas to support online learning. Each respondent uses various online learning media. The composition of the number of respondents based on the online learning media used is shown in Table 3. Based on Table 3, most of the respondents use the Online meeting application, Learning Management System (LMS), and social media, as many as 104 respondents. 80 respondents are using Online meeting applications, 72 respondents use Online meeting applications and LMS, 21 respondents use Online meeting applications, and social media, and 6 respondents use LMS. Then, there is a respondent who uses each composition of online learning media, namely online meeting application, LMS, Social Media, Miro, and Quiziz.

Nomophobia Level

Nomophobia can be considered a threat to the online learning aspect. Online learning requires students to access smartphones more often has an impact on students' dependence on the existence of smartphones. There are 4 dimensions of nomophobia contained in the 20 condition statements in the questionnaire. A score of 1 to 7 belongs to each statement. This scale interprets very inappropriately to very appropriately. The nomophobia score was calculated by adding up all the scores in the 20 statements. Based on this method, the lowest score is 20 and the highest score is 140. The total score shows the level of nomophobia is presented in Table 1. Furthermore, nomophobia has certain levels, which consist of no nomophobia, nomophobia, moderate nomophobia, and severe nomophobia.

Figure 4 shows the percentage of respondents at each level of nomophobia. Based on Figure 4, there are no respondents who are not nomophobia, 6% mild nomophobia, 40% moderate nomophobia, and 54% severe nomophobia. Most of the respondents had a severe level of nomophobia and most of the students feel uncomfortable when communicating and accessing information via smartphones or other gadgets, lost connection while

Table 4. Composition of Nomophobia Level by Gender.

<table>
<thead>
<tr>
<th>Gender</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Nomophobic</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Mild Nomophobia</td>
<td>11</td>
<td>6</td>
</tr>
<tr>
<td>Moderate Nomophobia</td>
<td>37</td>
<td>79</td>
</tr>
<tr>
<td>Severe Nomophobia</td>
<td>35</td>
<td>119</td>
</tr>
</tbody>
</table>

Table 5. Composition of Nomophobia Level by Age.

<table>
<thead>
<tr>
<th>Age</th>
<th>Adolescence (12-25 years)</th>
<th>Adults (26-45 years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Nomophobic</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Mild Nomophobia</td>
<td>16</td>
<td>1</td>
</tr>
<tr>
<td>Moderate Nomophobia</td>
<td>114</td>
<td>2</td>
</tr>
<tr>
<td>Severe Nomophobia</td>
<td>154</td>
<td>0</td>
</tr>
</tbody>
</table>
using the smartphones, and cannot use smartphones as desired. This study showed that the students’ lives are very dependent on smartphones or other gadgets, one of the aspects that can trigger this condition to occur is the online learning situation, where all the activities were conducted on the digital media platform.

Furthermore, the level of nomophobia is seen in gender and age. Based on Table 4, it is known that neither men nor women are not nomophobia. Mild nomophobia was experienced by more male respondents. While the levels are moderate and severe, female respondents are more numerous. Meanwhile, based on age, the largest number of respondents was in the youth category. A total of 154 teenagers had severe nomophobia. While in the adult category, the level of nomophobia with the highest number of respondents is moderate nomophobia. This shows that teenagers have a higher level of nomophobia than adults.

**DISCUSSION**

This study showed that most of the respondents who are teenagers are nomophobia. These respondents were aged 12-25 years old (99%) and adults (26-45 years old) (1%). The study has similar results to a previous study that indicates that most of the respondents were aged between 18-24 years old (77%) which was categorized as adolescents in the study. Furthermore, the adults aged between 25-34 years old had nomophobia (68%). In Indonesia, the prevalence of nomophobia has increased from time to time, another previous study showed that people with nomophobia were approximately reach 84% in people aged 19-24 years.

Nomophobia is a condition that indicates someone cannot be separated from a cellphone. This condition may lead to further conditions, such as anxiety. A previous study showed that most adolescents in Padang had medium anxiety levels (54.5%). These results may indicate that anxiety is a condition that can occur in adolescents when they are separated from their cell phones so they cannot interact with their friends.

Our study showed that most of the respondents had severe nomophobia. This study also shares similar results with previous studies that showed nomophobia in moderate levels (47.6%) and hard nomophobia (45.6%). The adolescents which are mostly a student will have a struggle when it comes to online learning. When it comes to preparing the internet quota and finding a place with a good connection can be a challenge for the adolescent to receive a convenient environment to study. Another previous study indicates that the more students feel nomophobia, the more students will focus on the importance of life-long learning since the online learning methods require connectivity that cannot be ignored. In addition, another study stated that cell phones are an instrument that is needed when it comes to achieving a better academic or study aspect. At least students who are not nomophobia also show that nomophobia has proven to be one of the negative impacts that students have to face as participants in online learning.

**CONCLUSION**

Most of the respondents had a severe level of nomophobia. In addition, most of the students feel uncomfortable when communicating and obtain the information via smartphones or other gadgets, lose connection, and cannot use smartphones as desired. Their lives are very dependent on smartphones or other gadgets. This study showed that the students’ lives are very dependent on smartphones or other gadgets, one of the aspects that can trigger this condition to occur is the online learning situation, where all the activities were conducted on the digital media platform. At least students who are not nomophobia also show that nomophobia has proven to be one of the negative impacts that students have to face as participants in online learning.

**DISCLOSURE**

**Author Contribution**

All authors have contributed to this research process, including conception and design, analysis and interpretation of the data, drafting of the article, critical revision of the article for important intellectual content, final approval of the article, collection and assembly of data.

**Funding**

The authors are responsible for all of the study funding without a grant or any external funding source.

**Conflict of Interest**

There is no conflict of interest for this manuscript.

**Ethical Consideration**

This research was approved by the Health Research Ethics Committee of Nahdlatul Ulama University Surabaya. Letter of exemption Ref. No. 11.721/NU.21/LL/2022

**ACKNOWLEDGEMENT**

We sincerely thank to all the respondents so this script can be carried out well. This script would hopefully give a positive contribution to the educational development or those who are willing to conduct further research.

**REFERENCES**


