

# Anxiety And Nomophobia In High School Students In The Context Of Virtual Education Due To Covid 19

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## Abstract

As a consequence of the Covid-19 pandemic, the socialization of individuals and the training and professional development processes have been adapted through the use of information and communication technologies, in the educational field to continue with the teaching process – learning classes are held remotely so it is necessary to be connected to a device. In this sense, the present investigation focuses on anxiety and nomophobia, that is, the irrational fear of not connecting to a device. The objective of this study was to determine anxiety and nomophobia in virtual education students in the context of a pandemic. The research was basic, with an explanatory level, non-experimental, causal correlational design. The sampling was probabilistic-stratified. The population consisted of 275 students and the sample was 52 students. The survey was used as a technique and the instrument for the anxiety variable was a Trait-State Anxiety inventory which consisted of 40 items and considered the trait and state anxiety dimensions with 20 items each, and for the nomophobia variable the questionnaire was used. And nomophobia questionnaire (NMP-Q), which considered four dimensions. According to the results,  $p < 0.01$  and R value = 0.713, which indicates a positive and high correlation between both variables. Concluding that there is a significant relationship between the anxiety and nomophobia variables in virtual education students in the context of a pandemic.

**Keywords:** Psychopedagogy, Use of mobile devices, Virtual education, Smartphone.

## INTRODUCTION

The present study is focused on anxiety and nomophobia in students in the context of virtual education due to the covid 19 pandemic, understanding as nomophobia the irrational fear of not connecting to a mobile device, affecting the mental, social and physical field. of individuals<sup>33</sup>; this, added to the psychosocial effects resulting from social distancing, can increase psychological consequences such as depression, stress, functional alterations, and anxiety<sup>29</sup>. The world is increasingly interconnected, both socially and economically, so technology has become one of the essential factors for human development, especially Smartphones, since it is the main technological means available today and is of habitual use<sup>34</sup>. These devices have various incentives, so they are used to listen to music, interact on networks, watch videos, take pictures, among others; Forming an important part of the daily life of users<sup>17</sup>, they are generally used by adults as a work tool and by young people to interact through applications such as Facebook, What Sapp, Instagram, among others<sup>38</sup>. However, although there are many uses and benefits provided by these devices in different areas, their habitual use could become an addiction, this being a widespread problem in different parts of the world<sup>20</sup>. The misuse of these could become nomophobia<sup>1</sup>.

Due to social distancing due to the pandemic, the United Nations Organization<sup>26</sup> recommended for the area of education, to implement internet access, online resources and mobile devices for teachers and students; Thus, many educational institutions have been forced to abruptly adapt and implement these technologies in class in order to continue with the learning and training of their students. However, not only the educational area has been affected, but the form of socialization and leisure have changed due to mobility restrictions, so that instant messaging services and social networks have become one of the the main ways to establish interpersonal relationships and communicate<sup>22</sup>. Thus, due to virtual classes and changes in leisure patterns, young people and adolescents use their devices much longer than usual<sup>13</sup>; As a result of this, from 2019 to 2020, in Peru, the use of mobile devices for communication has increased from 97.9% to 98.1% and for Internet queries there was an increase from 93.7% to 95.4%<sup>19</sup>; increasing from this forms the probability that user individuals will develop nomophobia.

Nomophobia then arises as a result of misuse of mobile phones<sup>1</sup>, the term comes from the English phrase "No mobile telephone phobia" and is considered a mental condition that originates from the fear of being disconnected from the connectivity provided by the telephone<sup>39</sup>. Nomophobia is the irrational fear of being momentarily or permanently

without a mobile phone, this generates in the user fear of going out without their device or even fear of being inside their own home without their cell phone <sup>28</sup>. This problem has been increasing over time in universities, schools, Jobs and homes, resulting in detachment from reality, poor academic performance and interpersonal problems <sup>23</sup>.

Likewise, users who suffer from this phobia present anxious, aggressive, unstable symptoms and difficulty concentrating, these symptoms are more evident when the individual has a low battery, is in an environment without connection or forgets his cell phone <sup>14</sup>. In this regard, the majority of young people have this addiction which manifests itself at different levels in each individual, this generates problems in self-esteem, attention deficit, among others <sup>35</sup>. In short, mobile phones could become so decisive for the identity of young people that they would generate an attachment and dependency, resulting in some psychological repercussions <sup>17</sup>.

In the current context of recent years, users use these devices an average of 3h 22min a day, and 72% of users see their device at least once an hour; this is worrying since dependence on mobile phones can bring with it pathological behaviors such as anxiety <sup>9</sup>. In this regard, two dimensions were proposed for anxiety, which have been considered in the present study, trait and state anxiety, with respect to trait anxiety, this includes the hostile and dangerous perception that the individual has of his environment and is a trait of his personality, with respect to state anxiety, this involves worries, tensions and annoying thoughts, where the individual's nervous system becomes hyperactive <sup>32</sup>.

In an educational institution in Peru, students have virtual classes, increasing the use of mobile devices, especially cell phones, to enter applications that are used as support for classes, among these are WhatsApp, Zoom, Gmail, Meet, among others; the pressure to adapt to this educational modality, fulfill their tasks and obtain good performance, added to connectivity, technical or health problems predispose students to develop psychological alterations for which, due to what is supported, the present study aims to unobscure the relationship between anxiety and nomophobia in virtual education students in the context of a pandemic, likewise, the specific objectives are to determine the relationship between anxiety and the dimensions of nomophobia (not being able to communicate, not being able to access information, giving up comfort and loss of connection) in virtual education students in the context of a pandemic.

## MATERIAL AND METHOD

The study was of a basic type since it had the purpose of increasing knowledge and theories <sup>11</sup>, no deliberate manipulation of the variables was carried out, so the study was non-experimental <sup>15</sup>. The research was causal correlational because it sought to determine the correlation between the variables, according to the methodology it is hypothetical deductive since the study phenomenon was observed, hypotheses were created to explain the phenomenon for its subsequent analysis and verification <sup>3</sup>. Regarding the general hypothesis, it was proposed that anxiety has a significant relationship with nomophobia in students of a public educational institution in Lima, the specific hypotheses raised that anxiety affects the dimensions of nomophobia (renunciation of comfort, not being able to communicate, not being able to access information, and loss of connection) in students of a public school located in Lima.

The study population consisted of 275 students from an educational center located in Lima, the type of sampling was stratified probabilistic, all students enrolled for the year 2021 were taken into account and those who did not attend regularly for reasons were excluded. health or connectivity. The sample was 52 students.

The survey was used as a technique and the instrument for the anxiety variable was a Trait-State Anxiety inventory which consisted of 40 items and considered the trait and state anxiety dimensions with 20 items each, this inventory is from Spielberger and Díaz- Guerrero <sup>32</sup> and was validated by Castro-Magán <sup>5, 40-59</sup>. For the nomophobia variable, the nomophobia questionnaire (NMP-Q) was used, which considered four dimensions: renunciation of comfort, loss of connection, not being able to access information and not being able to communicate <sup>39</sup>.

The students attended a virtual induction talk to receive an explanation of the study objective and give their consent, an inferential statistician was used to test the hypotheses, the JASP, SPSS, Jamovi and Rstudio programs were used.

## RESULTS AND DISCUSSION

For the results, inferential statistics were used through the non-parametric Spearman's Rho statistic, presenting a confidence level of 99% for the general and specific hypothesis test.

Regarding the general hypothesis, the results presented in Table 1 show  $p < 0.01$  and the value of  $R = 0.713$ , which indicates a positive and high correlation between both variables. Consequently, it is confirmed that there is a significant relationship between the anxiety and nomophobia variables, that is, a student with anxiety will be more likely to develop nomophobia, so the implementation of emotion management and social skills workshops is recommended.

**Table 1** Correlation: Anxiety And Nomophobia Variables In Students Of An Educational Institution In Lima

		Anxiety	nomophobia	
Spearman's rho	Anxiety	Correlation coefficient	1	
		Next (2-sided)	.713 **	
		N	<.001	
	nomophobia	Correlation coefficient	.713 **	1
		Next (2-sided)	<.001	.
		N	52	52

The results related to the dimensions of the nomophobia variable are presented below:

In relation to the dimension not being able to access information, according to Table 2,  $p < 0.01$  and the value of  $R = 0.628$ , which indicates a positive and high correlation, so it can be stated that There is a significant relationship between anxiety and the dimension of not being able to access information in virtual education students in the context of a pandemic. In other words, not being able to access the information from the mobile device would increase the anxiety levels of the students.

**Table 2** Correlation: Variable Anxiety And Dimension Not Being Able To Access Information

		Anxiety	Not being able to access information	
Spearman's rho	Anxiety	Correlation coefficient	1	
		Next (2-sided)	.628 **	
		N	<.001	
	Dimension not being able to access information	Correlation coefficient	.628 **	1
		Next (2-sided)	<.001	.
		N	52	52

For the dimension giving up comfort,  $p < 0.01$  and the value of  $R = 0.746$ , which indicates a positive and high correlation between both variables. Therefore, it is confirmed that there is a significant relationship between anxiety and the dimension giving up comfort in virtual education students in the context of a pandemic. In other words, giving up the comfort offered by the mobile device would generate an increase in the anxiety levels of the students.

**Table 3** Correlation: Variable Anxiety And The Dimension Giving Up Comfort

		Anxiety	give up comfort	
Spearman's rho	Anxiety	Correlation coefficient	1	
		Next (2-sided)	.746 **	
		N	<.001	
	give up comfort	Correlation coefficient	.746 **	1
		Next (2-sided)	<.001	.
		N	52	52

In relation to the dimension of not being able to communicate, according to Table 4,  $p < 0.01$  and the value of  $R = 0.557$ , which indicates a positive and high correlation, proving that there is a significant relationship between anxiety and the dimension of not being able to communicate, in virtual education students in the context of a pandemic.

**Table 4** Correlation: Variable Anxiety And The Dimension Not Being Able To Communicate

		Anxiety	Dimension unable to communicate	
Spearman's rho	Anxiety	Correlation coefficient	1	
		Next (2-sided)	.557 **	
		N	<.001	
	Dimension unable to communicate	Correlation coefficient	.557 **	1
		Next (2-sided)	<.001	.
		N	52	52

Finally, for the loss of connection dimension, in Table 5,  $p < 0.01$  and the value of  $R = 0.678$ , which indicates a positive and high correlation. Consequently, it is confirmed that there is a significant relationship between anxiety and the loss of

connection dimension in virtual education students in the context of a pandemic. Therefore, if students with nomophobia lose the connection offered by their mobile phones, their anxiety levels will increase.

**Table 5** Correlation: Anxiety Variable And The Loss Of Connection Dimension

		Anxiety	Lost Connection
Anxiety	Correlation coefficient	1	.678 **
	Next (2-sided)	.	<.001
	N	52	52
Spearman's rho	Correlation coefficient	.678 **	1
	Next (2-sided)	<.001	.
	N	52	52

The results coincide with those obtained by Farchakh et al. <sup>12</sup>, who in their research analyzed the relationship between nomophobia and some psychological conditions, including anxiety, depression, impulsiveness and stress, obtaining that these conditions are significantly related to nomophobia. Similarly, with his study carried out in Spain on a sample of 312 students in which the variation in the levels of nomophobia is significantly explained by anxiety <sup>8</sup>. In this regard, anxiety, depression and poor diet are related to nomophobia, concluding that students spend many hours on the cell phone lower their academic performance <sup>27</sup>. In investigations carried out in Peru to a group of university students, it was concluded that there is a relationship between nomophobia and anxiety; however, for the sample, 3 symptomatic factors of nomophobia were found, among these are the compulsive use of cell phones, the feeling of panic and anxiety <sup>21,31</sup>.

In the context of the pandemic, the mental health of the inhabitants was considerably affected; therefore, a review of the effects on the population is presented, concluding that there were many cases of depression, stress and anxiety <sup>16</sup>; This is worrying because the predisposition to develop these psychological conditions increases due to the excessive use of technologies in their different formats, especially mobile phones, which could increase the level of nomophobia in individuals; For this reason, in an investigation carried out in Spain, the concern of the family environment regarding the excessive use that young people give to technologies, among them the mobile phone, is collected, concluding that family concern about the use of technologies has increased in the lockdown; Likewise, there is a differentiation regarding gender, with greater concern about the excessive use that women give to instant messaging <sup>7</sup>. It is stated that women are the ones who present a greater risk of excessively consuming the mobile phone; it is explained that they are more susceptible to anxiety disorders <sup>10,25</sup>.

Likewise, the evaluation of the patterns that adolescents have regarding the use of their mobile phones was considered, as well as the psychological correlates, school performance and behavior in a sample of 528 students, the Beck anxiety questionnaire was used as instruments, the personality questionnaire and the excessive use of the mobile phone questionnaire <sup>30</sup>. According to the results, there is a significant percentage of students who use mobile phones excessively and who present depressive and anxious symptoms, on the other hand, 14.8% of students have low academic performance related to the abuse of these devices. Similarly, the excessive use of cell phones could generate changes in the individual's mood, feelings of insecurity, depression, anxiety and fear of going out without these devices <sup>4,18,37</sup>.

In the same way, the anxiety variable explains the abusive use of cell phones, since there is a significant correlation, likewise, there is a difference with respect to gender since it is women who obtained the highest score of emotional instability, it is verified with respect to anxiety that, the greater this is, the greater the use they give to mobile phones to use applications such as WhatsApp <sup>36</sup>. Similarly, it is women who tend to use mobile phones more frequently out of boredom, using it as a method to manage their anxiety or when they feel sad, on the other hand, they also found that unlike men, girls Not receiving calls or messages affects them more, generating greater anxiety <sup>36</sup>.

## CONCLUSIONS

It was obtained that  $p < 0.01$  and the value of  $R = 0.713$  for the relationship between the variables anxiety and nomophobia, which indicates a positive and high correlation. Consequently, it is concluded that there is a significant relationship between the variables anxiety and nomophobia; that is, a student with anxiety will be more likely to develop nomophobia in the context of virtual education due to the pandemic.

Likewise, the relationship between anxiety and the dimensions of nomophobia (not being able to communicate, not being able to access information, giving up comfort and loss of connection) also show a positive and high correlation. Therefore, it is recommended that the directors in charge of the educational institution execute prevention programs that encourage the proper use of mobile devices, especially cell phones; On the other hand, psycho-pedagogical alternatives should be proposed to regulate anxiety among students and keep track of their psychological well-being, promoting the participation

of parents. On the other hand, it is necessary to continue with prospective and longitudinal research considering the impact that these variables have over time in order to broaden the theories regarding the nature and causes of nomophobia.

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