



# Nomophobia (No MOBILE PHOne PhoBIA) among Medical students: A literature review

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## Abstract

Smartphones have become more popular due to advances in high-speed Internet connectivity. Smartphones are popular among young people, including medical students, as virtual devices. As a result, excessive use of smartphones has expressed concerns about its addictive potential, a condition known as nomophobia. Nomophobia (No MOBILE PHOne PhoBIA) is the worry or fear people feel when they do not have their mobile phone or are unable to use it. The term was introduced in 2008 and is considered a modern phobia. Nomophobia is also a general pathology among students, particularly those in medicine. This literature review examines the prevalence of nomophobia, symptoms, causes of nomophobia among medical students, and the impact of nomophobia on student achievement. Existing literature on nomophobia in the PUBMED and Google Scholar databases was examined using the search terms 'nomophobia' OR 'mobile phone use' OR 'mobile phone addiction' AND 'medical students.' Several studies have found that medical students have nomophobia. More than 50% of medical students in this review have moderate nomophobia, while 5-20% have severe nomophobia. The most common symptoms of nomophobia were anxiety, agitation, tachycardia, inability to turn off the mobile phone, constantly checking the phone, charging the battery even when the phone is nearly fully charged, fear of not being able to connect to a data network, concerns about being removed from online status or identity, and avoid activities to spend time on a mobile device. Students with severe nomophobia reported poor academic performance; students with a higher level of nomophobia performed poorly academically and vice versa. Medical students had a greater incidence of addiction to mobile phones, which affected their health and academic achievement. More emphasis should be placed on early detection and intervention to overcome nomophobia.

**Keywords:** *Nomophobia, Prevalence, Symptoms, Medical Students, Academic Performance.*

## 1. Introduction

Smartphones are becoming indispensable for daily life and it is estimated that there will be 6.6 billion users worldwide in 2022. These numbers will continue to grow and reach 7 billion in 2027 [1], [2]. It provides access to sophisticated communication networks and a diverse selection of entertainment and electronic books. Smartphones also include valuable features such as GPS, cameras, recorders, translators, clocks, radios, remote control of electrical appliances, torchlights, calculators, electronic wallets, and even health trackers [3]–[5]. Due to the ubiquity of mobile technology, smartphones have become a crucial tool in people's lives [6].

In addition to providing numerous benefits, excessive use of mobile phones can cause various problems [7]. Users are overly attached and occupied with their smartphones due to their convenience and various features [8]. Smartphone addiction has become so common that it is now seen as similar to any other addiction to hazardous substances [3]. Some people do not like to be without their phones for extended periods, while others fear or are worried about losing connectivity to their mobile phones. An increase in addiction in some people resulted in the phobia known as nomophobia, which comes from the conjunction of the expression 'no-mobile' combined with 'phobia.' Nomophobia literally means "no mobile phone phobia," which is the fear of not having a mobile phone for some time [9]–[12]. This phobia has arisen as computers and mobile phones have become more technologically advanced and varied in applications and communications.

Mobile phone addiction is a relatively emerging public health problem [13]. The prevalence of nomophobia ranges from 77% to 99% in developed and developing countries, with young adult populations the most affected [14]. Due to the increased engagement of mobile phones in their daily lives, medical students are not exempted from mobile phone addiction. There have been reports of medical students using their phones excessively. The time spent on the phone is for leisure purposes or academic advancement. Some medical students admit to being distracted by their phones, which may affect patient safety and academic success [15]. Therefore, it is essential to provide knowledge about nomophobia and understand how it affects medical students.



## 2. Literature Review

### 2.1. Definition

The discomfort or anxiety produced by the absence of a mobile phone is NOMOPHOBIA, an acronym for 'no mobile phone phobia.' This term was coined in 2008 by a Post Office survey in the United Kingdom to describe the anxieties of mobile phone users. According to this survey, which included 2163 users, more than 13 million British displayed nomophobia, nearly 53% of mobile users [9], [16]. This figure was raised in a study conducted in the United Kingdom in 2012. It was shown that 66% of the participants fear losing or being without their mobile phones; 41% use multiple mobile phones to stay connected [17].

Nomophobia is a modern digital and virtual society disorder characterized by the discomfort, stress, or anxiety associated with being separated from a mobile phone or other digital devices in people who routinely use these devices [5], [18], [19]. These include an inability to make or receive phone calls, send or receive text messages, and lose Internet connectivity and access to online social networking sites [19]–[22]. It is generally a pathological fear of being removed from technology or the digital world [11], [23]. Nomophobics are those who exhibit addictive behavior toward mobile phones [19].

### 2.2. Dimensions of Nomophobia

According to Yildirim's conception, nomophobia has four dimensions [19], [21]: (1) *not being able to communicate*, which refers to the emotions associated with losing instant communication with others and being unable to access services that provide rapid communication. This dimension deals with the feelings of being unable to contact people and being contacted; (2) *losing connectedness*, which relates to the negative emotions arising from an individual's disengagement or disruption of their online identity on social media networks; (3) *not being able to access information*, which is related to the distress caused by losing access to information through the mobile phone and not being able to search for any information contained in the mobile phone. This theme reflects the difficulty of losing ubiquitous access to information via smartphones and the inability to recover and search for information through smartphones; and (4) *giving up convenience*, which expresses feelings of giving up the convenience provided by smartphones and reflecting the desire to use the convenience of owning a smartphone. They kept the battery of their smartphone charged at all times.

## 3. Methods

The study aimed to understand the prevalence of nomophobia and its symptoms among medical students. This review examines the existing literature on nomophobia in PUBMED and Google Scholar databases using the term 'nomophobia' OR 'mobile phone use' OR 'mobile phone addiction' AND 'medical students' as search keywords. Many studies have been recognized for using these keywords. Only full-text studies were included. Qualitative studies and review articles, secondary sources such as books, the Internet, and online newspapers focusing primarily on nomophobia, were also included. Another inclusion criterion was that the study must be written in English and must have been conducted between 2017 and 2022.

## 4. Results and Discussion

The selected studies and their findings are presented in Table 1.

**Table 1.** Characteristics of the included studies

Ref. Author (Year)	Country	Population/ Sample details	Major Findings
Kar et al. (2017) [24]	India	284 medical students	Nomophobia is prevalent in medical students and should be addressed through individual and group counseling. Severe nomophobia was observed in 7.8% and they were referred to counseling.
Mallya et al. (2018) [25]	India	145 medical students	Most participants (86.9%) were nomophobic; only 7.6% were normal, while 13% were at risk of developing nomophobia.
Mengi et al. (2020) [26]	India	600 medical students and interns	Almost half of the study participants (40.1%) were nomophobia.
Qutishat et al. (2020) [27]	Oman	735 students	Nomophobia was 99.33% prevalent among students: 15% had mild, 65% moderate, and 20% had severe nomophobia.
Tanoto et al. (2020) [15]	Indonesia	190 students	20.52% had mild nomophobia, 70.52% moderate, and 8.94% had severe nomophobia.
Nelliyani et al. (2020) [28]	India	451 medical students	Mild nomophobia was observed in 15.5% of the students, moderate nomophobia in 67.2%, and severe nomophobia in 17.3%.
Chethana K, et al. (2020) [29]	India	228	Nomophobia affected all participants. 53.5% of the people had moderate nomophobia, 11.4% had severe nomophobia, and 35.1% had mild nomophobia.
Bano N et al. (2021) [30]	Saudi Arabia	230 medical students	In 78 (33.9%) of 30 students, severe nomophobia, anxiety, and stress levels were higher.
Kubrusly et al. (2021) [31]	Brasil	292 medical students	All students (99.7%) reported some degree of nomophobia, with 64.5% having moderate or severe nomophobia.
Aktaş Terzioğlu and Tokar Uğurlu (2021) [32]	Turkey	341 students	67% of the women were mild, 32.1% moderate, and 0.9% severe nomophobia. Of the males, 55% were mild, 39.3% moderate, and 5.7% were severe nomophobic.
Copaja-Corzo et al. (2022) [33]	Peru	3139 medical students	25.7% had mild nomophobia, while 7.4% had severe nomophobia.

### 4.2. Prevalence of Nomophobia on Medical Students

Mobile phone addiction has emerged as one of the most serious non-drug addictions in the modern era. Inappropriate use of mobile phones is a symptom, not a problem; therefore, we can address it by recognizing the growing trend among college students [33]. The abundance of features in smartphones and the availability of several functions enable their users to fulfill their personal needs. Smartphones allow

users to do various daily tasks with a single device. Calling and texting others, checking and sending emails, scheduling appointments, accessing the Internet, online shopping, social networks, reading, watching movies, and playing games are common uses [33].

Most students use their smartphones to browse, listen to music, and communicate with family and friends [28]. The frequency of smartphone check-ups and the duration of smartphone use each day were found to have a statistically significant relationship with the severity of nomophobia [27]. Nomophobia was also strongly related to loneliness and negatively related to self-happiness and self-esteem [28]. It found that the most common responses in terms of psychological and behavioral characteristics of nomophobia were "annoyance at not being able to use a smartphone, clinging to the phone all the time, feeling stressed if not using the phone, knowing the negative impact on academic performance, sleep deprivation, and compulsiveness to take calls while studying" [26].

According to research findings in the literature, all medical students have some degree of nomophobia. More than 50% of medical students have a moderate level of nomophobia, while 5-20% had severe nomophobia [15], [26]–[28], [31], [33]. A higher frequency was found among medical students in several medical colleges; almost 100% of the students had nomophobia [28], [31], [33]. Several studies found that female students were more likely to experience nomophobia [25], [26], [32], [33] compared to male students, while others did not find significant differences between sexes [27], [28], [30]. Men believe mobile phone technology promotes independence, which explains the gender disparities. On the other hand, women use their mobile phones primarily for communication, social networks, and keeping in touch with friends and family [34].

Most of the students agreed that the use of smartphones affects their academic performance. Students who suffered severe nomophobia reported poor academic performance [24],[33]. According to Qutishat et al., there is a non-statistically significant link between poor academic performance and severe nomophobia [33]. Increased nomophobia scores among participants resulted in lower academic performance and vice versa [25]. Ahmed *et al.* reported that nomophobia could cause anxiety and, as a result, lower academic achievement [35]. A study showed that nomophobia does not affect attention among Indonesian medical students. Excessive use of mobile phones can cause nomophobia and lack of attention, but lack of attention is not related to nomophobia. Other functions of the mobile phone, such as pop-up notifications, functions related to the smartphone regarded as "productive breaks" such as playing games or calling relatives, and study-related tasks such as searching for medical resources, could all contribute to the observed lack of attention [15].

### 4.3. Symptoms of nomophobia among students

The signs and symptoms mentioned in the following are observed in cases of nomophobia [7], [10]:

- a. Anxiety
- b. Respiratory alterations
- c. Trembling
- d. Perspiration
- e. Agitation
- f. Disorientation
- g. Tachycardia
- h. Inability to turn off the mobile phone
- i. Constantly checking the phone for missed messages, emails, or phone calls
- j. Charging the battery even when the phone is nearly fully charged
- k. Check often to ensure that the person has the phone with them
- l. Fear of not being able to connect to a data network or being without Wi-Fi
- m. Concerned about adverse events and unable to seek help
- n. Concerns about being removed from one's online status or identity
- o. Avoid activities or scheduled events to spend time on a mobile device

## 5. Conclusion

Nomophobia, or mobile phone separation anxiety, has become a widespread concern in today's world, as cellphones play a significant role in people's well-being. The smartphone is a virtual device that can connect with people, mainly family and friends. The overuse of mobile phones will increase the risk of nomophobia and dependence on a mobile phone. According to the study, most medical students have a mild to severe level of nomophobia, negatively affecting their academic performance. It is a worrying sign for the general population, medical professionals, and academic institutions. As a result, more emphasis should be placed on early detection and intervention to address nomophobia.

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