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# NOMOPHOBIA AMONG ASPIRING DOCTORS: AN IN-DEPTH INVESTIGATION INTO MOBILE PHONE DEPENDENCY

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Smartphones have become an integral part of daily life, with an estimated 6.6 billion users worldwide in 2022, projected to reach 7 billion by 2027. These devices offer access to advanced communication networks and a wide range of entertainment options, serving as multifunctional tools with features like GPS, cameras, recorders, translators, and more. While smartphones bring numerous benefits, excessive usage can lead to various problems. Users often develop an attachment to their phones, resulting in addiction similar to substance dependency. This addiction has given rise to the term "nomophobia," meaning the fear of being without a mobile phone. As mobile technology continues to advance, nomophobia has become a prevalent issue affecting people's lives. Its impact extends to public health, with prevalence rates ranging from 77% to 99% in developed and developing countries, primarily affecting young adults. Medical students, like many others, are not exempt from mobile phone addiction. Reports indicate that they excessively use their phones for leisure or academic purposes, leading to distractions that can compromise patient safety and academic success. Therefore, understanding the phenomenon of nomophobia and its effects on medical students is crucial. This study aims to provide knowledge about nomophobia and its implications for medical students. By investigating their mobile phone usage patterns, examining the relationship between nomophobia and academic performance, and exploring potential interventions, this research seeks to shed light on the issue and propose strategies to mitigate its negative consequences.

**Keywords:** smartphones, mobile phone addiction, nomophobia, medical students, academic performance, intervention.

## 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. |
| Nelliyanil 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 Toker 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".

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],. 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.

Most of the students agreed that the use of smartphones affects their academic performance. Students who suffered severe nomophobia reported poor academic performance. 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 studyrelated 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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