

SCHOOL OF HEALTH SCIENCES

THE PREVALENCE OF NOMOPHOBIA IN CYPRUS AMONG ADOLESCENTS AND ITS RELATIONSHIP WITH LONELINESS, SOCIAL MEDIA ADDICTION, FEAR OF MISSING OUT, ANXIETY, AND PHOBIC ANXIETY

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The Prevalence of Nomophobia in Cyprus among Adolescents and it Relationship with Loneliness, Social Media Addiction, Fear of Missing out, Anxiety, and Phobic Anxiety

Master's Thesis

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Περίληψη

Η ραγδαία εξάπλωση των «έξυπνων κινητών τηλεφώνων έχει επιφέρει σημαντικές αλλαγές στη σύγχρονη κοινωνική ζωή, ιδιαίτερα μεταξύ των νεότερων γενεών. Παρότι τα κινητά τηλέφωνα παρέχουν δυνατότητες επικοινωνίας, πρόσβαση στη γνώση και ψυχαγωγία, η υπερβολική εξάρτηση από αυτά έχει συνδεθεί με νέες ψυχολογικές προκλήσεις και συγκεκριμένα με το φαινόμενο της νομοφοβίας. Η νομοφοβία, που ορίζεται ως ο φόβος ή το άγχος που προκαλείται από την απουσία κινητού τηλεφώνου, αποτελεί αυξανόμενο πρόβλημα παγκοσμίως, ιδίως στις νεαρές ηλικίες. Παρά την πλούσια διεθνή βιβλιογραφία, υπάρχει έλλειμμα ερευνών στον εφηβικό πληθυσμό της Κύπρου. Η παρούσα μελέτη επιχειρεί να καλύψει αυτό το κενό, διερευνώντας τον επιπολασμό και τους παράγοντες που σχετίζονται με τη νομοφοβία σε εφήβους, με έμφαση σε δημογραφικές, ψυχολογικές και συμπεριφορικές μεταβλητές. Το δείγμα αποτελούνταν από 433 Ελληνόφωνους εφήβους ηλικίας 15–22 ετών, οι οποίοι στρατολογήθηκαν μέσω μεθόδων ευκολίας και χιονοστιβάδας. Τα δεδομένα συλλέχθηκαν μέσω διαδικτυακού ερωτηματολογίου που αξιολογούσε δημογραφικά στοιχεία, την ηλικία απόκτησης πρώτου κινητού, τον χρόνο χρήσης κινητού και κοινωνικών δικτύων, τα επίπεδα νομοφοβίας, τη μοναξιά, τον εθισμό στα μέσα κοινωνικής δικτύωσης, το FoMO, καθώς και δείκτες άγχους και φοβικού άγχους. Τα αποτελέσματα έδειξαν ότι (α) σχεδόν όλοι οι συμμετέχοντες (99,1%) παρουσίασαν κάποιο επίπεδο νομοφοβίας. Από αυτούς, το 83,9% ανέφερε τουλάχιστον μέτρια συμπτώματα, με το 33,3% να εμπίπτει στην κατηγορία σοβαρής νομοφοβίας, (β) οι διαφορές μεταξύ φύλων ήταν σημαντικές, με τα κορίτσια να αναφέρουν υψηλότερα επίπεδα νομοφοβίας σε σχέση με τα αγόρια, (γ) η ηλικία δεν βρέθηκε να σχετίζεται σημαντικά με τη νομοφοβία, (δ) παρατηρήθηκε αρνητική σχέση μεταξύ της ηλικίας απόκτησης του πρώτου κινητού τηλεφώνου και των επιπέδων

νομοφοβίας, (ε) η διάρκεια καθημερινής χρήσης κινητού και κοινωνικών δικτύων συσχετίστηκε θετικά με τη νομοφοβία, (στ) η νομοφοβία συσχετίστηκε θετικά με τη μοναξιά, τον εθισμό στα μέσα κοινωνικής δικτύωσης, το FoMO, το άγχος και το φοβικό άγχος, (ζ) οι αναλύσεις παλινδρόμησης κατέδειξαν ότι η ηλικία, ο εθισμός στα κοινωνικά δίκτυα, οι ώρες χρήσης κινητού και οι ώρες στα κοινωνικά δίκτυα αποτέλεσαν ισχυρότερους προβλεπτικούς παράγοντες της νομοφοβίας, εξηγώντας σχεδόν το 30% της διακύμανσης. Τα αποτελέσματα αναδεικνύουν την πολυδιάστατη φύση της νομοφοβίας, αντανακλώντας τις ψυχολογικές, συμπεριφορικές και αναπτυξιακές της διαστάσεις. Η μελέτη αποτελεί την πρώτη συστηματική διερεύνηση της νομοφοβίας στους εφήβους της Κύπρου, επιβεβαιώνοντας την ευρεία εξάπλωσή της και τις σημαντικές συνδέσεις της με κρίσιμους ψυχολογικούς και συμπεριφορικούς παράγοντες. Τα αποτελέσματα εναρμονίζονται σε μεγάλο βαθμό με διεθνείς έρευνες που καταδεικνύουν τη νομοφοβία ως ζήτημα ψυχικής υγείας, ιδίως στους νέους. Ιδιαίτερα κρίσιμα είναι τα στοιχεία που δείχνουν ότι η πρώιμη απόκτηση κινητού, η υπερβολική χρήση και η έντονη ενασχόληση με τα κοινωνικά δίκτυα λειτουργούν ως παράγοντες κινδύνου. Από την πλευρά της συμβουλευτικής ψυχολογίας, τα ευρήματα αναδεικνύουν την ανάγκη για στοχευμένες παρεμβάσεις που θα ενισχύουν πιο υγιείς ψηφιακές συνήθειες, δεξιότητες συναισθηματικής ρύθμισης και πρόληψης, ώστε οι νέοι να αναπτύσσουν μια ισορροπημένη σχέση με την τεχνολογία πριν παγιωθούν δυσλειτουργικά πρότυπα.

Λέξεις Κλειδιά: Νομοφοβία, Κύπρος, Έφηβοι, Μοναξιά, Άγχος, Φοβικό Άγχος, Εθισμός στα Μέσα Κοινωνικής Δικτύωσης, FoMO

Abstract

The rapid spread of smartphones has reshaped the way people connect, interact, and engage with the world, especially among younger generations. These devices offer unmatched opportunities for communication, instant access to information, and countless forms of entertainment. Yet, alongside these benefits, a growing dependence on smartphones has given rise to an emerging concern known as nomophobia. Defined as the fear or anxiety of being without one's mobile phone, nomophobia has increasingly been recognized as a global issue, particularly among adolescents and young adults. Research across different countries has consistently highlighted its links not only to excessive smartphone use but also to a range of psychological challenges. Despite this growing body of evidence, the phenomenon remains underexplored in Cyprus, especially within the adolescent population. The present study seeks to address this gap by examining both the prevalence of nomophobia and the factors that contribute to it, focusing on its connections with demographic, psychological, and behavioural variables. The study sample consisted of 433 Greek-speaking adolescents from Cyprus, aged 15-22, who were recruited through convenience and snowball sampling methods. Data were gathered using an internet-based self-report questionnaire that assessed participants' age and gender, the age when they acquired their first phone, time spent on mobile usage and time spent on social media, their level of nomophobia, loneliness and social media addiction, and their level of fear of missing out (FoMO), anxiety and phobic anxiety. The findings indicated that (a) nearly all participants (99.1%) exhibited some level of nomophobia. Among them, 83.9% reported at least moderate symptoms, with 33.3% falling into the severe category, (b) gender differences were significant, with females reporting higher levels of nomophobia than males, (c) age was not significantly associated with nomophobia, (d) a negative relationship was observed

between the age at which participants first acquired a mobile phone and nomophobia levels, indicating that earlier phone acquisition was linked to higher nomophobia, (e) the duration of daily phone and social media usage was positively associated with nomophobia, thus participants using their phones or social media for more than three hours daily were significantly more likely to fall into the severe nomophobia category compared to lighter users (f) nomophobia was positively associated with loneliness, social media addiction, FoMO, anxiety and phobic anxiety, and (g) regression analyses further demonstrated that age, social media addiction, hours spent on phone usage and hours spent on social media were stronger predictors of nomophobia. These findings highlight the multifaceted nature of nomophobia, reflecting its psychological, behavioural and developmental dimensions. This study provides the first systematic evidence of nomophobia prevalence among adolescents in Cyprus underscoring its widespread nature and significant links with both psychological and behavioural factors. The findings mainly align with international research, which identifies nomophobia as a pressing mental health concern, especially among younger populations. Importantly, the results indicate that early acquisition of smartphones, excessive daily use, and high engagement in social media, are risk critical factors. From a counselling psychology perspective, these insights highlight the need for interventions aimed at promoting healthier digital habits, support the development of emotional regulation skills, and raise awareness about the psychological risks associated with excessive smartphone dependence. Equally important is the emphasis on prevention, particularly during adolescence, when early education and awareness programs can help young people develop a balanced relationship with technology before problematic patterns become entrenched.

Keywords: Nomophobia, Cyprus, Adolescents, Loneliness, Anxiety, Phobic Anxiety Social Media Addiction, FoMO

Dedication

This thesis is lovingly dedicated to my one and only daughter. May the knowledge and effort embodied in these pages not only serve as a guide and inspiration for her, but also one day be of value to her own children. She is, and always will be, my greatest motivation. Above all, I wish for her to see in this work a reminder that perseverance, sacrifice, and love can turn challenges into accomplishments.

To my partner, whose patience, understanding, and unwavering support never faltered, I owe the deepest gratitude. Thank you for standing by me, for believing in me when I doubted myself, and for making countless sacrifices so that I could pursue this path. This achievement is as much yours as it is mine.

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I am profoundly grateful to my partner, whose patience, understanding and unwavering love and support carried me through the most demanding moments of this journey. I owe him my deepest appreciation for standing by me not only during times of joy and achievement, but also enduring my highs and lows with compassion and strength. His constant belief in me and his quiet resilience became a source of comfort and motivation when I

needed it the most.

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1. Introduction

The invention of the mobile phone is widely recognised as one of the greatest technological advances in human history (Harris et al., 2023). In recent decades, its use has expanded at an unprecedented pace, especially with the rise of smartphones, which have rapidly evolved from being a luxury item to a necessity of modern life (Panova & Carbonell, 2018; Vagka et al., 2023b). Statistics highlight the global reach of this technology: the number of mobile users increased from 7.1 billion in 2021 to 7.26 billion in 2022, and it is projected to reach 7.49 billion by 2025 (Statista, 2023). Further, global smartphone market revenue is expected to surpass US$485.3 billion by 2025, with steady growth in the following years (Statista, 2024b). These figures clearly demonstrate that mobile phones are no longer optional devices but are deeply embedded in daily routines and social structures worldwide.

Smartphones offer a wide variety of functions that go far beyond simple communication. They provide instant access to information, support learning and study processes, enable online transactions, and serve as tools for social networking and entertainment (Demircioğlu, 2024; Ebrahimi & Mohammadi, 2024; Jeong et al., 2016). They also enhance professional productivity and contribute to medical assistance through health-related applications (N. Bragazzi & Del Puente, 2014). Consequently, access to both communication and information has been significantly streamlined, thereby enhancing the accessibility and efficiency of daily activities (Gonçalves et al., 2020; León-Mejía et al., 2021a). They also facilitate social relationships and provide a sense of security and autonomy, enabling people to remain reachable and in constant contact with their environment (Kwan & Leung, 2015). This broad functionality explains their widespread acceptance and integration as indispensable tools in contemporary society (Gnardellis,

Vagka, et al., 2023).

However, while smartphones undoubtedly offer multiple benefits, their excessive use has raised significant concerns. A growing body of research highlights negative physical effects, such as musculoskeletal disorders, neck and back pain, headaches, visual strain, and sleep disturbances (Daraj et al., 2023; Ferchichi et al., 2023; Hamutoglu et al., 2018; Kurnia et al., 2021; Mohani et al., 2024; Notara et al., 2021, 2023; Oraison & Wilson, 2024; Samsudin et al., 2021; N. K. Singh & Rathore, 2023). Apart from the physical dimension, psychological and behavioural consequences are also reported, including reduced concentration, increased stress, and disturbances in social relationships (Rodríguez-García et al., 2020). One of the most prominent negative effects is technology addiction, with smartphone addiction being one of its most widespread forms, alongside internet addiction, social media addiction, and gaming disorders (N. K. Singh & Rathore, 2023; Y.-Y. Wu & Chou, 2023).

Within this framework, the phenomenon of nomophobia—an abbreviation for "no mobile phone phobia"—has emerged as an area of particular interest. It refers to the discomfort, stress or anxiety experienced when individuals are unable to use, or do not have access to, their mobile phone (Bulut & Sengul, 2024; Gnardellis, Vagka, et al., 2023; Jahrami et al., 2022; Oraison & Wilson, 2024; Wen et al., 2023). Because of its close relationship with smartphone addiction, nomophobia has been described as one of the "disorders of the 21st century," directly linked to rapid technological advancement and the increasing reliance on digital communication (King et al., 2010, 2013).

The psychological dimensions of nomophobia have drawn significant academic interest.

Some researchers argue that it exhibits characteristics of a specific phobia and could be considered within the DSM-5 diagnostic framework, as it involves intense anxiety in response to a defined situation: being separated from one's mobile device (American Psychiatric Association, 2013; N. Bragazzi & Del Puente, 2014). Others emphasize its global prevalence, as studies across diverse countries consistently reveal high levels of nomophobia among different demographic groups, particularly adolescents and young adults (Jahrami et al., 2022; Zwilling, 2022).

The widespread presence of nomophobia highlights the need for a deeper exploration of its implications. In addition to its association with psychological distress and physical health issues, it directly influences social interactions and personal development. Given the extent to which smartphones have become an inseparable element of everyday life, their role in shaping not only communication but also behaviour, health, and social interaction is undeniable. However, this dependence also raises new questions about how individuals cope with periods of disconnection from their devices. It is within this context that the concept of nomophobia—the fear of being without one's mobile phone—has emerged as a pressing issue in contemporary research and public discussion.

2. Literature Review

2.1 Nomophobia

Nomophobia arising from the excessive use of smartphones is recognised to be an emerging threat for physical, mental, and social health, since it is evolving into an epidemic and represents a significant concern of public health (Notara et al., 2021). It was first used in the 2000s and according to the Oxford English Dictionary records, the earliest documented occurrence of the

term was in the Daily Mail (London) in 2008 (Thangavel, 2024). It has been recognized as a set of symptoms and/or behaviours related to the use of mobile phones (King et al., 2014). Nomophobia contributes to broader societal challenges, particularly the rise in traffic accidents linked to mobile phone use during driving. Even though it is difficult to determine what proportion of such cases are directly attributed to nomophobia, the behaviour reflects impulsive use, despite its well-known dangers and legal restrictions in many countries. Similar risks have been noted among pedestrians, whose divided attention between tasks, such as typing and walking, increases accident rates (Popović et al., 2022). Additionally, generational differences are becoming more pronounced, largely due to varying levels of engagement with mobile phones for social networking. Current research indicates that excessive mobile usage at a younger age, significantly increases prohibited and dangerous use along with problematic mobile phone dependency (Kaviani et al., 2020). Furthermore, excessive mobile usage has been described as the silent yet disruptive force, consuming valuable time and interfering with individuals' daily activities (Kalaivani & Radhamani, 2024).

Although awareness of nomophobia has grown steadily, it has yet to be formally recognized by the Wold Health Organization (WHO) as a mental health condition (N. K. Singh & Rathore, 2023). This absence of official recognition has sparked debate among scholars regarding its conceptualization and diagnostic status. Some researchers maintain that nomophobia closely aligns with established criteria for mental disorders (Navas-Echazarreta et al., 2023). For instance, Galhardo et al. (2020) suggest that nomophobia may be understood as a modern age situational phobia. Individuals experiencing it often report feelings of worry and anxiety when they are unable to access their mobile phone, engage in repeated checking even when the device is within

reach, avoid environments where phone use is restricted, curry charges to prevent battery depletion and keep their phones switched on and nearby during the night (Hamutoglu et al., 2018). These symptoms have let some researchers to argue that nomophobia may indicate the presence of an underlying mental disorder that requires further investigation and, potentially, clinical intervention (King et al., 2013). Other researchers suggest that nomophobia could be classified either as a specific phobia (N. Bragazzi & Del Puente, 2014; Kaviani et al., 2020) or as a manifestation of smartphone addiction (Oraison et al., 2020; Oraison & Wilson, 2024).

Within a different framework, it is argued that nomophobia is more accurately understood as a phobia, particularly one related to agoraphobia (King et al., 2010), while alternative perspectives emphasize the psychological dependence that stems from the anxiety of being unable to access a mobile phone (Yildirim & Correia, 2015). Regardless of the theoretical lens adopted, many scholars stress the importance of acknowledging nomophobia as a genuine mental health concern, since doing so could shape future research directions, enhance awareness among health professionals and the public and ultimately inform the design of effective interventions and preventive strategies (Navas-Echazarreta et al., 2023).

Beyond the issue of classification, researchers have also focused on its core characteristics. Nomophobia has been linked to four main factors: (a) “the fear of not being able to communicate”, (b) “ the fear of losing connectedness”, (c) “the fear of not being able to access information”, and (d) “the fear of giving up convenience” (Yildirim & Correia, 2015). These dimensions capture the essence of how smartphone dependence disrupts daily life, particularly among young people, by reflecting the modern need to remain constantly connected (Panova & Carbonell, 2018). Related research further shows that this dependence is not limited to simple overuse, but is closely tied to

psychological and social difficulties, such as heightened stress, reduced concentration, and disruptions in interpersonal relationships (Rodríguez-García et al., 2020). Recognizing these underlying components helps to explain why nomophobia represents a complex phenomenon with both psychological and social implications.

2.1.1 The prevalence of Nomophobia

Nomophobia has emerged as a global phenomenon with consistent high prevalence rates reported across diverse countries. In Australia for example, nomophobia rates were found to be as high as 99% (Kaviani et al., 2020). Comparable patterns have been observed in Italy (N. Bragazzi & Del Puente, 2014), Croatia (Santl et al., 2022), as well as in India, the Philippines, Tunisia, and Malaysia (Al-Mamun et al., 2023; Anjana et al., 2021; Ferchichi et al., 2023; D. Gupta et al., 2024; Oraison & Wilson, 2024; Saleh et al., 2019). A systematic review including studies from ten different countries revealed that the global prevalence of moderate and severe nomophobia was 70.76%, whereas the prevalence of severe nomophobia measured at approximately 21% within the general adult population (Jahrami et al., 2022). An interesting finding of the same study was that the phenomenon of nomophobia appears to exert its greatest impact on university students. A more recent systematic review showed similar findings with the levels of mild, moderate and severe nomophobia to be 26%, 51% and 21% respectively, indicating a slightly higher rate of at least moderate nomophobia (72%). Consistent to the previous study, higher prevalence was observed among university students, as well as young adults (Al-Mamun et al., 2025). It is important to note that the prevalence of nomophobia rose during the period of COVID-19 home confinement (Aydin & Kuş, 2023; Fidancı et al., 2021; Kadiyala et al., 2023).

Evidence from Greece is even more striking, with 99.9% of respondents exhibiting some

level of nomophobia, with moderate to severe levels being present in 75.9% of respondents (Vagka et al., 2023b). Similarly, a recent research conducted among adults in Cyprus revealed almost identical trends, with 99.3% of participants reporting some level of nomophobia and 76% of them falling into the moderate or severe levels (Mousoulidou et al., 2025).

2.1.2 Nomophobia and Current Research Activity

Although nomophobia is considered a new phenomenon, it has attracted significant scholarly attention, both by quantitative and qualitative researchers. A qualitative study reported that nomophobia is associated with feelings of insecurity, panic, and anxiety, which in turn may contribute to social withdrawal. It was also linked to excessive dependence on, and addictive patterns of, smartphone and social media use (Anshari et al., 2019). The phenomenon of nomophobia has also been explored in quantitative terms, within the context of both physical and mental health (Tamang, 2021). In line with this, Bekaroğlu and Yilmaz, (2020) suggest that nomophobia is harmful within the context of a person's physical health, but it also affects psychological health by increasing stress, which in turn causes insomnia, anxiety disorders and depression. Similarly, findings of a systematic literature review indicated that nomophobia negatively affects individuals, causing physical and psychological problems, as well as behavioural changes, including personality, anxiety and stress levels, self-esteem, and academic performance (Rodríguez-García et al., 2020). Additionally, it has been investigated under the lens of psychological, emotional, social and physical side effects (Notara et al., 2021).

With regards to physical health, Notara et al. (2023) suggested that nomophobia is significantly and positively correlated with overall health burdening including hearing, vision, musculoskeletal and psychosomatic symptoms, whereas Samsudin et al. (2021) suggested that

headache was the main health consequence of nomophobia. A literature review of Wahyuni, (2022) recognises tachycardia, agitation, and avoidance of other activities, as the most common symptoms of nomophobia. Further research findings suggest that nomophobia negatively affects academic performance (Abukhanova et al., 2024; Karaoglan Yilmaz et al., 2022; Kumari et al., 2019; Prasad et al., 2017; Vagka et al., 2023b), work productivity, and mental well-being, making it a multidisciplinary concern (Aydin & Kuş, 2023; Daraj et al., 2023; Yildiz Durak, 2019a). Additionally a significant negative relationship was suggested between nomophobia, interpersonal problem solving (Karaoglan Yilmaz et al., 2022), self- control (Retno Arini et al., 2021), distraction (Oraison & Wilson, 2024), sleep quality (Demircioğlu, 2024), psychological well-being (Wibowo & Triantoro, 2025), and self-esteem (Indira et al., 2023, 2023; Vagka et al., 2023a, 2024).

In contrast, current literature revealed a positive relationship between nomophobia, poor mental health (N. K. Singh & Rathore, 2023), perceived stress (D. Gupta et al., 2024), separation anxiety (Kazğan Kılıçaslan et al., 2024), social interaction anxiety (Bulut & Sengul, 2024) social phobia (Uysal et al., 2016), problematic internet use, social appearance anxiety (Ayar et al., 2018) academic stress (Suresh et al., 2019) poorer sleep (Balamurugan et al., 2024; Kurnia et al., 2021) depression and stress (Abdoli et al., 2023; Çakmak Tolan & Karahan, 2022; Gnardellis, Vagka, et al., 2023; Kazğan Kılıçaslan et al., 2024), phubbing behaviour (Lestari & Suratmini, 2024), aggression (Ghoghre, 2025), problematic mobile phone use (Kaviani et al., 2020) smartphone addiction (Al-Mamun et al., 2023; Oraison & Wilson, 2024; T C & Prabhjyoth, 2024; Yildiz Durak, 2019a), insomnia symptoms (Daraj et al., 2023), feelings of compulsive smartphone use and feelings of panic (Rosales-Huamani et al., 2019). Furthermore, nomophobia was found to be a

significant predictor of depression, anxiety and stress (Santl et al., 2022), whereas it has been investigated under the lens of personality traits. Studies showed that neuroticism and extraversion were positively related to nomophobia, whereas openness to experience was negatively associated with it (Chhabra & Pal, 2024). A significant positive relation was also found between neuroticism and smartphone addiction (Marengo et al., 2020), a factor that is closely related to nomophobia.

Additionally, interpersonal sensitivity and paranoid ideation have also been found to be critical predictors of nomophobia (Elhai et al., 2025; Yılmaz & Bekaroğlu, 2022), whereas nomophobia among young adults is considered to be a predictor of social anxiety disorder (Uysal et al., 2016) and smartphone addiction (Awofala, 2020). An important finding indicates the influence of nomophobia, stress and loneliness on problematic smartphone use, during the COVID-19 pandemic (Zwilling, 2022). During the same period research showed an increase in the prevalence of both nomophobia and smartphone addiction (Aydin & Kuş, 2023). It is worth noting that problematic internet use, which is closely related to nomophobia (Arpaci, 2022; Mahgoub et al., 2019), has been related positively to depression, anxiety, loneliness and other mental outcomes (Hasmujaj, 2016), but it was negatively related to well-being (Cai et al., 2023). A positive association between anxiety, depression, stress, and problematic internet use was also indicated by the study of Orsolini et al. (2023).

Nomophobia has been investigated in Cyprus under the lens of coping styles with the findings showing that the use of avoidant and maladaptive coping strategies contributed to more severe levels of nomophobia (Mousoulidou et al., 2025). Consistent with studies conducted in other countries, nomophobia was found to be positively related to both maladaptive (Anjana et al., 2021; N. L. Bragazzi et al., 2019) and avoidant coping styles (Lu et al., 2021). Worth noting is the

association revealed by numerous of studies between nomophobia and attachment styles. A study also conducted in Cyprus revealed that (a) anxiety attachment dimension is a significant predictor of nomophobia, and (b) more severe levels of nomophobia are associated with insecure attachment styles (Constantinidou et al., 2025). Similarly, both anxious and avoidant attachment dimensions were found to be positively related to nomophobia (Arpaci et al., 2017), and a negative association was suggested between secure attachment and nomophobia (Ebrahimi & Mohammadi, 2024) a finding that was also supported by the study of Canatar & Bilge, (2023); Kolahkaj et al., (2023). A negative association between nomophobia and anxious attachment style (Liang, 2024), as well as fearful and preoccupied insecure attachment styles (Canatar & Bilge, 2023; Gohar & Munir, 2023) were revealed by the current literature.

2.2 Loneliness

Human beings typically make a considerable effort to connect with other people and establish meaningful relationships with them (Valtorta et al., 2016), as they are considered social creatures with a need for interpersonal connections , an attribute that is hardwired into their brains (Ghoghre, 2025). Furthermore, throughout the process of evolution, it has been suggested that loneliness plays a role in promoting both connection and reconnection with others, ensuring safety and enhancing survival (Hawkley & Capitanio, 2015). The danger of isolation and the need to protect oneself trigger, among other outcomes, implicit hyper-vigilance for social threat, greater anxiety and hostility (J. T. Cacioppo & Hawkley, 2009; S. Cacioppo et al., 2014).

Nonetheless, there are situations in which individuals although among others, feel isolated, lacking both love and care, and are thus unable to overcome feelings of loneliness (Aldalalah,

2020). Loneliness is generally considered as the emotional state people experience when they feel their relationships are inadequate or unsatisfying (Cao et al., 2022; Heng et al., 2023). This often results from a lack of social belonging or close emotional connections (D. W. Russell et al., 2012). Loneliness typically falls into two categories: social loneliness, which describes the perceived lack of a social network, and emotional loneliness, which shows a deficiency in close relationships and emotional support (Liu & Rook, 2013; Wolters et al., 2023). Emotional loneliness seems to be more prevalent, affecting 45% of people, compared to 21.5% who appear to be experiencing social loneliness, with severe cases being reported at 7.7% and 3.2%, respectively (Diehl et al., 2018). Recognised as a growing public health issue (Wolters et al., 2023), loneliness affects about 33% of the general population in industrialised countries, with 8% experiencing severe loneliness (J. T. Cacioppo & Cacioppo, 2018). Among university students in Germany, 32.4% reported moderate feelings of loneliness, while 3.2% faced severe loneliness (Diehl et al., 2018).

2.2.1 Loneliness and Current Research Activity

Acknowledging that loneliness is considered a crucial risk phenomenon, several studies have examined its association with a number of physical and mental factors. Within the context of neurology, it has been recognised that the perception of social isolation influences both brain and human behaviour, thus significantly increasing the risk for morbidity and mortality (S. Cacioppo et al., 2014). Loneliness and social isolation have been associated with an increased risk of developing cardiovascular disease (Holt-Lunstad & Smith, 2016; Mushtaq et al., 2014), coronary heart disease, and stroke (Mushtaq et al., 2014; Valtorta et al., 2016). It has also been connected to irritability, depression, and a 26% greater risk of premature death (Diehl et al., 2018). A review of the physical and the psychological aspects of loneliness revealed that loneliness can lead to

various physical disorders such as hypertension, obesity, diabetes, physiological aging, autoimmune disorders, lupus diseases, cancer, poor hearing and poor health, as well as to psychiatric disorders like Alzheimer's disease, depression, alcohol abuse, child abuse and personality disorders (Mushtaq et al., 2014).

Further, a study conducted among individuals aged 16-76 indicated that loneliness was significantly associated with general anxiety, social anxiety and depression (Wolters et al., 2023). The findings of another study also indicated that loneliness was positively associated with both depression and anxiety, with the relation between depression and loneliness to be stronger than anxiety (Yang et al., 2023). The same study also suggested that "suicide" was related with the four types of loneliness. In addition to a positive association with depression (Kraav et al., 2021), loneliness was found to be a significant predictor of it (Ayuningtyas, 2022). A literature review also suggested that loneliness and depression mutually influenced each other, with exerting similar effects (Chen et al., 2023).

A significant positive relationship was also revealed between loneliness, problematic mobile use (Tan et al., 2013), smartphone addiction (R. Singh & Kumari, 2021; Y. Zhang et al., 2023), problematic internet use (Orsolini et al., 2023), social media usage (Y.-L. Wang et al., 2024), social media addiction (Ahmad et al., 2024), and internet addiction (Hasmujaj, 2016; SeviMoğlu & Adana, 2022), all factors being associated to nomophobia (Marcolini et al., 2024; Oraison & Wilson, 2024; Rao et al., 2023; T C & Prabhjyoth, 2024). Findings also suggest that loneliness and problematic social media usage positively impacted each other, providing evidence of a bidirectional causal relationship (Wu et al., 2024).

Additionally, a study showed that loneliness in the working place has a statistically significant effect on FoMO (Sapmaz, 2023), whereas a research conducted among young adults indicated that loneliness was significantly associated with the needs for social interaction, economical support, romantic relationships and parents' status. The same research revealed that individuals who were not involved in a romantic relationship and did not come from married families, reported higher levels of loneliness (Özdemir & Tuncay, 2008)

2.3 Social Media Addiction

Social media use has become an integral part of modern society, gradually becoming embedded in daily life and leading to increased participation among a wide range of individuals (Zarate et al., 2023). The high dependence on social media and its consequent negative effects have yielded health concerns leading to the assessment of "problematic social media use" (Bányai et al., 2017) and to the emergency of the social media addiction phenomenon (Zarate et al., 2023). The growing trend of night-time social media engagement has been observed, mainly due to the growth of social media platforms, but also attributable to the convenience of smartphone use (Tandon et al., 2020). Even in the case of social media platforms serving as a means for distributing news, it was revealed that they have a negative influence on people's well-being, in view of the intensive negative emotions experienced by individuals while reading news headlines (Mousoulidou et al., 2024).

Additionally, social networks often encourage people to present an unrealistic version of themselves. In an attempt to gain approval, many users share idealized images of their bodies or lifestyles, reinforcing the influence of so-called "influencers", namely individuals whose attitudes,

habits and choices shape public opinion, particularly in areas tied to consumer products. The relationship that "influencers" have with their audience, gives them the power to steer purchasing decisions (Engel et al., 2024). Acknowledged as a major adverse effect of nomophobia on society (Popović et al., 2022), this phenomenon has prompted a surge of research exploring its influence on both physical and mental health.

2.3.1 Social Media Addiction and Current Research Activity

The current literature suggests that there is a positive relationship between both anxiety (Farid et al., 2022; Nakul et al., 2025; W. Wu et al., 2024) and depression (Ali et al., 2023; Luo et al., 2025) with compulsive social media use. Compulsive social media use has also been significantly associated with problematic sleep among children but not among working professionals (Tandon et al., 2020). Additionally, the nocturnal use of social media has been related to vehicular accidents and work errors in Australia (Appleton et al., 2020), as well as with fatigue (Bright & Logan, 2018) and FoMO (Apaolaza et al., 2019). A noteworthy finding is the positive association identified between social media addiction and loneliness among adolescents (Yam et al., 2024).

2.4 Fear of Missing Out

The Fear of Missing Out (FoMO) is an increasingly significant phenomenon evolving in consumer behaviour, mainly under the lens of social media marketing (Zhang et al., 2020). It has been described as a strong awareness of the enjoyable experiences others are having and a persistent urge to stay connected with people through social networks (Przybylski et al., 2013). It also refers to the distress that arises among social media users when they think their peers are benefiting from positive experiences in which they are not taking part in (Gil et al., 2015). FoMO is recognized as

the fear of being deprived of the smartphone, thus considered to be a predictor of nomophobia (Hoşgör & Hoşgör, 2020), and recognized as the one of the most well-known phenomena within the internet use context (Alt, 2015). Worth noting is that in some populations this appears to increase with age, whereas the reverse applies in other populations (Akbari et al., 2021).

2.4.1 Fear of Missing Out and Current Research Activity

The rise of FoMO fostered by social media has generated considerable research interest. The current literature suggests that FoMO leads to increased social media engagement (Elhai et al., 2025; Elsayed & Hala, 2025; Tandon et al., 2020). More specifically, Przybylski et al. (2013) suggest that FoMO was related to greater engagement with Facebook. Additionally, the negative relationship between FoMO and psychological well-being has attracted significant scholarly attention (Wibowo & Triantoro, 2025). FoMO was found to be positively related to anxiety (Deniz, 2021; M. Gupta & Sharma, 2021; Rifkin et al., 2024), aggression (Rubab et al., 2025) and depression (Deniz, 2021; Przybylski et al., 2013; Rahmah & Qudsyi, 2024). In contrast, a negative relationship has been revealed between FoMO and life satisfaction (Elsayed & Hala, 2025). Interestingly, the findings of Elhai et al. (2021) suggest that interpersonal sensitivity and paranoid ideation are critical predictors for FoMO. A study conducted among a clinical –based adolescent sample revealed that FoMO was positively affected by anxiety and problematic smartphone usage, whereas it was negatively affected by depression and hostility (Gul et al., 2022).

In addition to mental health issues, FoMO has been investigated under the lens of other factors as well. Specifically, a significant negative relation has been revealed between FoMO and academic performance (Qutishat & Abu Sharour, 2019), whereas a positive association has been

suggested between FoMO, phubbing behaviour (Lestari & Suratmini, 2024), internet use (Akbari et al., 2021), distracted learning during university lectures and distracted driving (Przybylski et al., 2013).

2.5 Anxiety

Mental health disorders represent a major global public health challenge, with a growing number of individuals requiring mental health services and imposing substantial social costs (World Health Organization, 2022). Anxiety and depression stand out as the most disabling, ranking among the top leading contributions to the global burden disease in 2019 (Vos et al., 2020). Further, anxiety disorders are recognized as the most common mental health conditions worldwide, with the current estimates suggesting that they affect more than 300 million people (around 4%) of the global population (Javaid et al., 2023). Over the past three decades, the prevalence of anxiety disorders has steadily increased with certain groups who appear to be at a higher risk. For instance, women, people with low life satisfaction, unhealthy people, and those who face stressful life events, appear to be disproportionately affected (Alipour et al., 2025).

Anxiety Disorders include conditions such as General Anxiety Disorder (GAD), Panic Disorder, Social Anxiety Disorder and Specific Phobias Anxiety (Mendoza et al., 2024). In the context of this study, the term anxiety is used primarily to denote General Anxiety Disorder, as its clinical features such as persistent worry, tension and difficulties in managing daily concerns, are more directly related to the patterns under investigation, compared to other categories of anxiety disorders. Therefore, anxiety should not be understood as occasional worry, but rather as a persistent state of heightened apprehension and physical arousal that interferes with everyday

functioning. Typical experience also includes restlessness, muscle tension, irritability, difficulties in concentration and problems with sleep (Stein & Craske, 2017). According to the DSM-5 (American Psychiatric Association, 2013), the diagnostic criteria for GAD involve excessive worry and heightened concern in anticipation of future occurrences, being felt on most days, and lasting for at least six months. People with GAD often find it difficult to control this worry, with adults typically experiencing excessive worry about routine aspects of daily life, whereas children with the disorder are more likely to focus their worries on their abilities and the quality of their performance. GAD is also accompanied by at least three further symptoms such as being restless or on edge, becoming easily fatigued, concentration difficulties, irritability, muscle tension and disturbed sleep. These difficulties cause distress or impairment in social, occupational or other areas of daily life. This definition helps psychologists to structure assessment and show how wide-ranging the impact of anxiety can be.

Existing treatments for anxiety most often combine pharmacological approaches with psychotherapy (Sartori & Singewald, 2019). Pharmacological interventions can reduce the physiological manifestations of anxiety, whereas the underlying triggers and cognitive processes are more effectively addressed through psychological therapies. Evidence from numerous studies highlights that psychotherapeutic methods, particularly cognitive-behavioural therapy, tend to provide more durable and long term benefits for individuals with anxiety disorders (Adwas et al., 2019; Kirsch, 2019; Whiteside et al., 2020).

2.5.1 Anxiety and Current Research Activity

The widespread prevalence of anxiety disorders, along with their established associations with a range of physiological factors, have emerged as an important area of scientific inquiry. Anxiety

typically emerges early in life and often follows a chronic course with substantial functional consequences. The rising global prevalence of anxiety therefore poses a serious challenge to public well- being and significantly undermines quality of life (Racine et al., 2021). An interesting finding revealed by the supporting literature is that levels of anxiety tend to decrease across one's lifespan (Settineri et al., 2019), with adolescents exhibiting a higher prevalence of anxiety symptoms than adults (H. Wang et al., 2023). Apart from age, sex, physical and mental health, indices were found to significantly predict individuals' anxiety scores (Mendoza et al., 2024), with the prevalence of anxiety disorders in girls to be higher to that observed in boys (Alkhateeb, 2023; M.-L. Kim & Shin, 2022; Narmandakh et al., 2021; H. Wang et al., 2023).

The findings of a study conducted among adolescents suggested that psychological and parental psychopathology factors could increase the risk of anxiety diagnosis (Narmandakh et al., 2021). Additionally, a two year longitudinal study, also among adolescents, revealed that the development of anxiety was related to physical concerns dimension of anxiety sensitivity, and to both positive and negative attentional bias (Ho et al., 2018). With regard to children, factors associated with anxiety included parenting style, exposure to environmental tobacco smoke, parental mental disorders and school type (Alkhateeb, 2023).

Additionally, the findings of a study carried out among students in China indicate that a variety of factors could increase the possibility of reported anxiety symptoms, including living in rural than urban areas, school type, lower income families, absence of physical exercise, poor academic performance, alcohol, unhealthy diet, insomnia, and loneliness (Wang et al., 2023). Current literature has also revealed a significant positive association between anxiety and some of the heart rate variability metrics (Jo et al., 2024), levels of perceived stress (D.-H. Kim & Kim,

2024; M.-L. Kim & Shin, 2022), economic status, suicidal ideation, depression, and loneliness (D.-H. Kim & Kim, 2024). A negative relation was found between anxiety levels and muscle strengthening exercise (M.-L. Kim & Shin, 2022)

2.6 Phobic Anxiety

Phobic anxiety, generally recognized as fear related to specific stimuli (Gomez, Zarate, Brown, & Stavropoulos, 2024) is defined as an intense fear that arises in response to particular situations, namely enclosed spaces, heights or crowed environments, where fear is clearly tied to an external situation (Watkins et al., 2010). It is worth noting that it is characterized by persistent and disproportionate fear that are consistently provoked by particular situations, leading to avoidance behaviours and significant distress (Chang, 2024).

Worth noting that the phobic anxiety subscale of the SCL-90-R, used for the purposes of this study, should not be confused with the DSM-5 diagnosis of specific phobia. The SCL-90-R subscale captures a broader spectrum of symptoms, often reflecting discomfort or avoidance in situations such as crowds, public places or environments where escape may be difficult (Derogatis et al., 1976). By contrast, the DSM-5 defines specific phobia as an intense and persistent fear of a clearly identified objects or situations, such as animals, injections or heights, that is disproportionate to the actual threat and leads to significant impairment (American Psychiatric Association, 2013). In this sense, the SCL-90-R provides a dimensional measure of phobic anxiety, whereas the DSM-5 diagnosis applies to distinct clinical presentations with specific diagnostic criteria.

Further, phobic anxiety should be differentiated from panic disorder. In specific, what

makes phobic anxiety particularly distinct from panic disorder is the predictability of the trigger. In panic disorder, the hallmark is the sudden and unexpected onset of panic attacks, whereas in phobic anxiety the fear response is cued by a specific stimulus (Thyer & Himle, 1987). While panic attacks may also occur within phobic conditions, they are tied to the presence or anticipation of the feared situation and are usually less intense than those in panic disorder (Smoller et al., 2008). Another important distinction is developmental: phobic anxiety tends to appear earlier in life, often during childhood or adolescence, whereas panic disorder usually emerges later. This earlier onset helps explain why phobic disorders are not only more common but also carry a significant burden across the lifespan (Kessler et al., 2005).

In clinical settings, these disorders are considered involuntary and maladaptive, often limiting daily functioning. Symptoms typically emerge early in development, with childhood phobias sometimes expressed through behaviours such as crying, freezing, or clinging when confronted with the feared stimulus (American Psychiatric Association, 2013). Epidemiological evidence indicates that phobic disorders are among the most prevalent forms of anxiety, with onset being typically in childhood or adolescence and earlier than panic disorder (Kessler et al., 2005). Large-scale surveys have documented lifetime prevalence rates of around 12% for both specific phobias and social anxiety disorder, underscoring their public health relevance (Kessler et al., 2005). Family studies further demonstrate strong familial aggregation, with first-degree relatives of affected individuals showing a substantially higher risk—six- to nine fold greater—of developing similar conditions (Stein et al., 1998). Twin studies confirm that phobic anxiety disorders are moderately heritable, with genetic factors accounting for roughly 20–39% of the variance in liability (Hettema et al., 2005).

Importantly, the majority of vulnerability appears to stem from unique environmental influences, highlighting the interaction between inherited predispositions and personal experiences in the development of phobic anxiety (Chang, 2024; Smoller et al., 2008). Additionally, current literature indicates that the prevalence of phobic anxiety is higher among women compared to men (Watkins et al., 2010). This multifactorial aetiology distinguishes phobic anxiety from panic disorder, which shows somewhat stronger genetic loading, and underscores the complexity of these conditions as early-onset, highly prevalent disorders with significant social and psychological implications. This blend of nature and nurture highlights the multifactorial roots of phobic anxiety and helps explain both its diversity of presentations and its persistence across the lifespan. Taken together, these findings position phobic anxiety as one of the most prevalent and burdensome groups of anxiety disorders, with an aetiology shaped by the interplay of genetic vulnerability, environmental factors, and developmental timing (Chang, 2024).

2.6.1 Phobic Anxiety and Current Research Activity

Although there is limited research investigating the phenomenon of phobic anxiety, some interesting findings have been revealed from the current literature. Studies indicate that phobic anxiety is significantly associated with low job satisfaction and high job stress (J. H. Kim & Jang, 2016), higher risk of cardiac mortality and sudden cardiac death (Watkins et al., 2010), breast cancer (Gabra & Hashem, 2021) and negative life events (Paulsen & Shaver, 1991). Further, phobic anxiety was found to be significantly higher in insomnia patients, and negatively correlated with positive coping styles (Y. Li et al., 2021). Additionally, in a study conducted in China on the prevalence of poor psychiatric status and sleep quality, the SCL-90 was employed to assess psychological symptoms. Findings indicated that Phobic Anxiety domain was among the

dimensions contributing to poor psychiatric status and was significantly associated with factors such as poor sleep quality and fatigue (Zhou et al., 2021).

2.7 The Relationship of Nomophobia with the Factors Examined

2.7.1 Nomophobia, Demographic Factors and Age First Acquiring Phone

Regarding gender, results of the current studies are not in agreement. Numerous studies have revealed that females exhibit higher levels of nomophobia than males, among both adult and adolescence population (Aldalalah, 2020; Gohar & Munir, 2023; Kanmani S et al., 2017; Kaviani et al., 2020; Louragli, et al., 2018; Ramos-Soler et al., 2021; Sethia et al., 2018; Suresh et al., 2019). Taking into consideration, that nomophobia has been described as a special phobia, these findings are in line with evidence that women consistently report greater prevalence of fears and phobias, compared to men (Bourdon et al., 1988; Fredrikson et al., 1996; Wardenaar et al., 2017). Similarly, female adolescents were found to exhibit more fear-related phenomena than male ones (Settineri et al., 2019). Additionally, the prevalence of smartphone addiction (a factor closely related to nomophobia) was found to be higher in females compared to males (Kundapur et al., 2020). Nonetheless, the findings of the current literature concerning gender are inconsistent, with the findings of some studies suggesting the opposite, namely that males exhibit higher levels of nomophobia compared to females (Daei et al., 2019; Dongre et al., 2017; Myakal & Vedpathak, 2019), whereas no statistical significant association was observed in relation to gender by Dixit et al. (2010) .

Research examining the relation between age and nomophobia generally indicates that younger individuals report significantly higher levels of both smartphone addiction and

nomophobia compared to older population (Gohar & Munir, 2023; González-Cabrera et al., 2017; Notara et al., 2023). More specifically, Rehman and Singh, (2022) suggest that nomophobia tends to affect adolescents the most, with prevalence rates peaking in the 14-16 age group. In contrast, Kanmani et al. (2017) suggested that nomophobia mostly affects individuals between the ages of 18-25. In general, age has been found to be negatively associated to nomophobia (Daei et al., 2019; Guimarães et al., 2022; Guzel & Alan, 2020; Kaviani et al., 2020; Vagka et al., 2023b). An important contribution to this line of research is the finding that nomophobia levels tend to increase with the earlier age at which an individual first acquires a mobile phone (Bulut & Sengul, 2024; Kadan, 2023).

2.7.2 Nomophobia and Time Spent on Mobile Phone

Time spent on mobile phone appears to play an important role in the prevalence of nomophobia. Sharma et al. (2022), suggest that the increased smartphone usage can lead to addiction, thus causing nomophobia. Various studies have suggested a positive association between nomophobia and the frequency of using smartphones (Constantinidou et al., 2025; Daei et al., 2019; Kaviani et al., 2020; Kumari et al., 2019; Samsudin et al., 2021). Current literature also suggests that daily duration of smartphone time and psychoactive substance use are recognized as significant predictors for nomophobia (Al-Mamun et al., 2023).

2.7.3 Nomophobia and Time Spent on Social Media

A significant positive association was revealed between nomophobia and the use of mobile phone for social media applications (Samsudin et al., 2021). Moreover, time spent on social media was also positively linked to nomophobia either on adults or adolescents populations (Ayar et al., 2018; Ramos-Soler et al., 2021; Yıldız Durak, 2018). A study conducted in Cyprus among adults

revealed that social media was the second reason for mobile use, representing 26.4% of multiple responses, following "communication" which was found to be the most common reason of phone use (Mousoulidou et al., 2025). The same study revealed a statistically significant positive relation between social media usage and nomophobia.

2.7.4 Nomophobia and Loneliness

Researchers who have looked into the link between nomophobia and loneliness highlight the need for deeper investigation into this connection. Numerous studies have found a positive link between nomophobia and loneliness (Agrawal, 2023; Aldalalah, 2020; Constantinidou et al., 2025; Dehghaniana & Bordbar, 2023; D. M. Gezgin, Hamutoglu, et al., 2018; GezgiN & Ümmet, 2021; Ghoghre, 2025; Heng et al., 2023; Hussien, 2022; Sun et al., 2024; T C & Prabhjyoth, 2024). Some suggest that loneliness explains the relationship between both the use of expressive suppression strategies, and social interaction anxiety with nomophobia (Valenti et al., 2022). However, results are mixed; other studies indicate weak or non-significant associations between nomophobia and different types of loneliness, such as familial, social, or romantic (GezgiN & Ümmet, 2021). These inconsistent findings highlight the need for a deeper investigation into this connection.

It is also important to note that loneliness has been studied in relation to smartphone and internet addiction. Several studies have found a positive correlation between loneliness and smartphone addiction, suggesting that lonely individuals might be more inclined to use their smartphones excessively (Parashkouh et al., 2018; R. Singh & Kumari, 2021; Y. Zhang et al., 2023). However, some research found no significant link between loneliness and problematic smartphone use (Zwilling, 2022). Similarly, studies on internet addiction and problematic internet

use, which are also related to nomophobia, have shown mixed outcomes. While many studies report a positive correlation between loneliness and internet addiction (Ayuningtyas, 2022; Cai et al., 2023; Cao et al., 2022; Hebebci & Shelley, 2018; Murkey et al., 2020; Orsolini et al., 2023; Özben, 2013; Parashkouh et al., 2018; Plasterwala & Deshpande, 2022; SeviMoğlu & Adana, 2022), others indicate no or even negative associations (Hasmujaj, 2016). These findings further stress the need to explore loneliness in the context of nomophobia.

2.7.5 Nomophobia and Social Media Addiction

The dependence on social media may sometimes constitute the underlying reason for nomophobia. The current body of research has examined the possible associations between the two factors, having revealed a positive relationship between nomophobia and social media addiction (King et al., 2010, 2013; Lin et al., 2021; Yıldız Durak, 2018). The scientific relation between the two lies on the fact that nomophobia is recognised as a condition in which the brain releases dopamine in response to stimuli like emoticons, tweets and similar interactions, thus rewarding the behaviour and perpetuating the habit of social media addiction (Thangavel, 2024).

2.7.6 Nomophobia and FoMO

A number of studies have suggested a significant positive relation between nomophobia and FoMO (Ceobanu et al., 2023; Elhai et al., 2021; Ghoghre, 2025; Hamutoglu et al., 2018; Hoşgör & Hoşgör, 2020; Wen et al., 2023; Wibowo & Triantoro, 2025). Nomophobia was also found to have a direct and positive impact on FoMO (Sapmaz, 2023), with Hoşgör and Hoşgör, (2020) not only indicating a significant positive relation between the two variables, but also suggesting that FoMO explains 30% of nomophobia.

2.7.7 Nomophobia and Anxiety

Several studies suggested that anxiety was not only positively related to nomophobia but that it was also among the predictors of nomophobia (Abdoli et al., 2023; Kuscu et al., 2021; Rodríguez-García et al., 2020; Santl et al., 2022). Additionally, nomophobia was found to be positively related to anxiety among university students in Turkey (Demircioğlu, 2024). Further studies found a significant positive relation between nomophobia and anxiety (Bekaroğlu & Yilmaz, 2020; Çakmak Tolan & Karahan, 2022; Daraj et al., 2023; Dehghaniana & Bordbar, 2023; Ferchichi et al., 2023; Ghoghre, 2025; Gnardellis, Vagka, et al., 2023; Kazğan Kılıçaslan et al., 2024; Kuscu et al., 2021; Rosales-Huamani et al., 2019; Taş & Eker, 2021; Wahyuni, 2022). Anxiety has also been significantly and positively related to internet addiction (Azher et al., 2014) and smartphone addiction (Aarthi et al., 2020). Specifically, a study carried out in Greece indicated that individuals exhibiting severe anxiety used smartphones for approximately seven hours per day (Gnardellis, Vagka, et al., 2023).

2.7.8 Nomophobia and Phobic Anxiety

To the best of my knowledge, the association between phobic anxiety and nomophobia has not been broadly investigated. Nonetheless, a study carried out among young adults revealed a positive relation between nomophobia and phobic anxiety (Yılmaz & Bekaroğlu, 2022). Further, phobic anxiety was found to be positively related to internet addiction (Adalıer & Balkan, 2012), a factor which is not only closely related to nomophobia (Marcolini et al., 2024), but was found to be among its predictors (Rao et al., 2023). Studies have also showed that specific phobias occur at higher levels in adolescents and are negatively correlated with age (Kessler et al., 2005; Settineri et al., 2019). Given that nomophobia is classified as a specific phobia and that phobic anxiety

involves persistent fear related to specific stimuli (Derogatis et al., 1976), a statistically significant correlation between nomophobia and phobic anxiety is anticipated.

2.8 Nomophobia among Adolescents

Several factors may contribute to nomophobia in teenagers, particularly given the sensitivity of adolescence as a developmental stage. Building effective communication and social relationships is a central concern for young people and difficulties in this area are often seen as a key factor influencing their adjustment within society and their success across different stages of life (Azadmanesh et al., 2016) .

Although research on the relation between adolescents and nomophobia remains relatively limited, existing studies generally report findings consistent with those observed in adult populations, with individuals aged 18-22 showing marked dependence on smartphones and online digital information (Indira et al., 2023). Existing studies have suggested that the prevalence of nomophobia among adolescents was above average, with females showing a higher tendency to exhibit nomophobic behaviour (D. Gezgin & Cakir, 2016; D. M. Gezgin, Cakir, et al., 2018). Specifically, a study conducted in Turkey among adolescents showed that the rates of mild, moderate, and severe nomophobia were 35%, 50% and 14% in the female population, whereas in the male population these rates were found to be 45%, 44% and 10% respectively (Yavuz et al., 2019). Even though the prevalence of nomophobia among both genders was 99%, the findings of the study indicate that 64% of females exhibited at least moderate nomophobia, whereas the corresponding figure for men was 54%. Additionally, the phenomenon of nomophobia is recognized as a prevalent problem among younger generations (Anshari et al., 2019), with

younger individuals suffering more from nomophobia (León-Mejía et al., 2021b).

Furthermore, findings of current literature suggested that nomophobia is negatively related to the age an individual first acquired a phone (Bulut & Sengul, 2024; Kadan, 2023), which generated a considerable academic research interest among children and adolescents. The qualitative research of Pratiwi et al. (2019) has revealed that children with high dependency on phones exhibited negative behaviour in the context of: (a) not caring about themselves or others when using a mobile phone, thus ignoring their parents, and: (b) showing an increased preference for playing with the mobile phone than experiencing outdoor activities with friends. Additionally, nomophobia among adolescents was found to be positively correlated to smartphone addiction (Yildiz Durak, 2019a), internet addiction (D. M. Gezgin, Cakir, et al., 2018), FoMO (Ergin & Ozer, 2023), social media addiction (Bilici, 2025), loneliness (Yıldız Durak, 2018), alexithymia and metacognitive problems (Yavuz et al., 2019), lack of sleep and eyestrain (Dongre et al., 2017), social phobia, separation anxiety, total anxiety, hyperactivity, and depression (Kuscu et al., 2021). A study conducted by Sharma et al. (2019) suggested that nomophobia is significantly associated with anxiety, poor quality of life and depression. Low self-control is also suggested by current literature as a factor that influences children and adolescents' ability to control the stimulus to always use a smartphone, thus triggering nomophobia (Akyol Guner & Demir, 2022; Ilmiah et al., 2021; Yıldız Durak, 2018) even from school age (Retno Arini et al., 2021). Another study conducted among adolescents suggested a positive relation between nomophobia and social media addiction, with both factors being identified as potential risk factors for adolescent insomnia (Lin et al., 2021).

Further, problematic social media usage can make adolescents more prone to nomophobia

(Thangavel, 2024), whereas adolescents with increased nomophobic tendencies also exhibit social media addiction, external locus of control and higher levels of loneliness (Yıldız Durak, 2018). A more recent literature review identified a positive correlation between nomophobia and loneliness and highlighted the potential impact of nomophobia in mental well- being (Juwita et al., 2024). Nomophobia among adolescents was also linked to loneliness in the study of D. M. Gezgin, Hamutoglu, et al. (2018). Loneliness along with anxiety and shyness have also been found to be significant positive predictors of nomophobia (Dehghaniana & Bordbar, 2023). Worth noting that loneliness in adolescents has also been associated with depression, suicidal ideation, sleep disturbances, and worse physical health (Hawkley & Capitanio, 2015).

Alongside nomophobia, smartphone addiction and its associations with numerous factors has been investigated by the existing body or research. A study carried out by Akyol Guner and Demir (2022) has revealed that nomophobia, self-control and anxiety are significant predictors of smartphone addiction. In contrast, positive association was found between smartphone addiction and academic performance (Yildiz Durak, 2019b). Additionally both internet and mobile addiction were found to be positively related with loneliness among adolescents (Parashkouh et al., 2018).

2.9 Nomophobia in Cyprus

To date, research on nomophobia in Cyprus remains scarce. To the best of my knowledge, the first study conducted locally was carried out by Mousoulidou et al. (2025) as part of a broader project. This investigation explored the association between nomophobia, coping strategies, mobile phone usage patterns, and demographic characteristics such as age, gender, and educational level. The findings indicated that 99.3% of participants exhibited some level of nomophobia, with younger

adults, women, and individuals with lower educational attainment being particularly vulnerable. Furthermore, communication and social media use were positively correlated with nomophobia, while maladaptive and avoidant coping styles appeared to exacerbate its severity (Mousoulidou et al., 2025).

A second study further expanded on these findings by examining the role of attachment styles, loneliness, and patterns of mobile phone use in predicting nomophobia within the Cypriot context (Constantinidou et al., 2025). Results demonstrated that the anxiety attachment dimension, together with the time spent on mobile phone use, served as significant predictors of nomophobia. In contrast, the avoidance attachment dimension, overall attachment types and loneliness were not found to be significant predictors. Nevertheless, more severe levels of nomophobia were linked to insecure attachment styles, as well as to increased feelings of loneliness. Moreover, extended time dedicated to mobile phone use was consistently associated with higher levels of nomophobia. Collectively, these findings point to the multifaceted nature of the phenomenon, suggesting that both psychological vulnerabilities and behavioural factors contribute to the development and intensity of nomophobia.

Considering the limited body of research, it is also crucial to take into account national data on mobile phone use and psychosocial well-being. Market analyses show a steady increase in smartphone penetration in Cyprus, with forecasts estimating that the number of smartphones will reach approximately 380.7 thousand units by 2029 (Statista, 2024a, 2024c). At the same time, psychosocial concerns such as loneliness appear particularly relevant in the Cypriot context. According to the 2022 EU Pilot Project on Loneliness, which surveyed more than 25,000 people across Europe, about 13% of respondents reported feeling lonely most or all of the time.

Strikingly, Cyprus exceeded this average, with 16–17% of participants indicating persistent loneliness (EU Science Hub, 2023).

These findings highlight the importance of investigating nomophobia among Cypriot adolescents, as both technological and psychosocial factors appear to intersect in shaping its prevalence and severity.

2.10 The Purpose of the Current Study

The purpose of this study was to investigate the prevalence of nomophobia in Cyprus among adolescents who use smartphones, and its relation to subjective feelings of loneliness, social media addiction, FoMO syndrome, anxiety, and phobic anxiety. Specifically, the present study examined whether the results of previous studies that showed high prevalence of nomophobia (Al-Mamun et al., 2023; Jahrami et al., 2022; Mousoulidou et al., 2025; Vagka et al., 2023b), as well as a positive association between nomophobia and subjective feelings of loneliness (Constantinidou et al., 2025; D. M. Gezgin, Hamutoglu, et al., 2018; GezgiN & Ümmet, 2021; Heng et al., 2023; Yıldız Durak, 2018), addiction to social media (Ayar et al., 2018; Charini & Supriyadi, 2024; Lin et al., 2021; Yıldız Durak, 2018), FoMO syndrome (Hamutoglu et al., 2018; Wen et al., 2023), anxiety (Abdoli et al., 2023; Daraj et al., 2023; Gnardellis, Vagka, et al., 2023; Kuscu et al., 2021), and phobic anxiety (Bekaroğlu & Yilmaz, 2020), also apply to the adolescent population in Cyprus.

The specific objectives of the study were to examine the strength of the possible relationships and if these were influenced by gender, age, time spent on mobile usage, time spent on social media, and the age at which Cypriot adolescents first acquired a smartphone.

Research gaps were identified in the fact that most studies have been conducted on adult populations. Additionally, there is no research activity related to the phenomenon of nomophobia in Cyprus, apart from the studies by Mousoulidou et al. (2025) and Constantinidou et al. (2025), which also examined the adult population. Finally, there is a research gap regarding the association between nomophobia and phobic anxiety, as well as some inconsistency in research findings concerning the association of nomophobia with some of the variables examined.

2.11 The Importance of the Current Study

The primary significance of the present study lies in its contribution to scientific knowledge. By examining the extent of nomophobia among Cypriot adolescents and the factors with which it is associated, the research sheds light on an issue that is both of growing importance and underexplored. Nomophobia has been increasingly discussed through the lens of specific phobias, which is a psychiatric disorder known to cause significant functional impairment in daily life. Its frequent appearance before the onset of other mental conditions suggests that it may serve as an early marker of vulnerability to psychopathology (Wardenaar et al., 2017). Furthermore, existing literature indicates that psychological difficulties such as anxiety, phobias, eating disorders and obsessional behaviours are often more common in adolescence and tend to decline with age (Settineri et al., 2019). In this context, the presence of nomophobic behaviours becomes particularly concerning as they may disrupt everyday habits and signal the need to investigate possible comorbid conditions (King et al., 2013).

The growing integration of smartphones into adolescents' daily lives highlights why this line of research is so important. Young people are among the most active users of mobile

technology and while these devices provide undeniable opportunities, they also present risks. Nomophobia as a form of excessive digital dependence has been linked internationally with psychological and social challenges, yet little is known about its prevalence in Cyprus. By investigating how nomophobia relates to loneliness, social media addiction, Fear of Missing Out (FoMO), anxiety, and phobic anxiety, this study addresses a crucial gap in knowledge.

The significance of this research is multifaceted. Firstly, it deepens our understanding of the psychological implications of smartphone reliance during a critical stage of development. Adolescence is a period where identity formation, emotional regulation, and social relationships are still being shaped. Experiencing nomophobia, together with related challenges such as anxiety or loneliness, can interfere with emotional well-being, academic performance, and interpersonal bonds. By examining these associations, the study offers insights that are directly relevant for parents, educators, and mental health professionals who support young people in navigating these challenges.

Secondly, the study holds social relevance for Cyprus. While smartphones are now firmly embedded in the daily routines of Cypriot adolescents, little empirical evidence exists regarding the psychological costs of this dependence. Documenting the prevalence of nomophobia and its correlates in this context provides culturally specific knowledge that can inform prevention strategies, educational initiatives and policy decisions. Localized evidence of this kind is essential for creating targeted programs that resonate with young people's realities.

Thirdly, the research adds to the broader academic discussion on technology-related problems. Although previous studies have linked smartphone overuse to phenomena such as

FoMO, social media addiction and anxiety, these investigations often focus on larger or more diverse populations. By concentrating on adolescents in Cyprus, this study broadens the scope of comparative work, offering insights into how cultural context may shape the experience of nomophobia while also contributing to the global understanding of technology-related mental health challenges.

Finally, the findings carry practical implications. Recognizing both the prevalence of nomophobia and its associated risk factors allows for earlier identification of problematic smartphone use. More importantly, it underscores the need for preventive and therapeutic responses that address not only the symptoms of nomophobia but also its psychological roots, such as loneliness and anxiety. These results can form the basis for awareness campaigns, family involvement, school-based interventions and clinical practices designed to promote healthier relationships with technology.

In sum, this research matters not only for what it adds to academic knowledge but also for its potential to improve adolescent well-being in practical, tangible ways. By focusing on Cypriot adolescents and exploring nomophobia in connection with loneliness, social media addiction, FoMO, and anxiety, the study provides a valuable foundation for both local interventions and international dialogue on the psychological risks of digital dependence in today's youth.

2.12 Research Hypotheses

Grounded on the existing body of literature and in line with the purpose of this study, the following hypotheses were developed:

Hypothesis 1 (H1) The prevalence of nomophobia in the current sample is expected to be high.

Worth noting that no studies have been conducted in Cyprus among adolescents. Nevertheless, findings from a recent study of Mousoulidou et al. (2025), suggest that the prevalence of nomophobia in Cyprus among adults is at the extremely high level of 99.3%, with 99.6% of the group of emerging adults aged 18-25 exhibiting at least mild level of nomophobia. Given that the same study revealed a negative relation between age and nomophobia, it is expected that the prevalence of nomophobia in the current sample will be similar or even more pronounced. In addition, existing literature from other countries and from Greece, where the population shares a common language with Cyprus, suggests that nomophobia levels are likely to be high.

Hypothesis 2 (H2) Statistically significant associations between demographics and nomophobia levels are expected. Previous research has shown that younger individuals tend to experience higher levels of nomophobia. While findings on gender differences remain inconclusive, some studies suggest that women may report higher levels of nomophobia. This finding is also supported by the recent study carried out in Cyprus, which, however, examined the gender differences among adults (Mousoulidou et al., 2025).

Hypothesis 3 (H3) A negative relationship between nomophobia level and the age at which a person acquires a phone for the first time is expected. Although there is limited research examining this area, a negative association between nomophobia level and the age at which a person acquires a smartphone for the first time has been revealed by previous studies (Bulut & Sengul, 2024; Kadan, 2023).

Hypothesis 4 (H4) Positive associations between nomophobia and both the hours spent using phones and the hours spent on social media are expected. Consistent with previous research

indicating a positive relation between mobile phone use as well as social media use and nomophobia, it is expected that individuals who spend more time on their phones and on social media will exhibit higher levels of nomophobia.

Hypothesis 5 (H5) Positive relationships are expected between nomophobia and the other variables examined in this study (loneliness, social media addiction, FoMO, anxiety, and phobic anxiety). Although research on loneliness and nomophobia remains limited, existing studies suggest a positive association with loneliness, which is also linked to problematic smartphone use and smartphone addiction. Similarly, prior studies report a significant positive relation between social media addiction and nomophobia among adolescents. In the case of FoMO, evidence consistently indicates a positive connection, suggesting that adolescents with higher FoMO experience greater nomophobia. A growing body of literature also supports the link between nomophobia and anxiety, while limited but emerging evidence suggests that phobic anxiety is positively related to nomophobia. However, phobic anxiety tends to appear earlier in life, often during childhood or adolescence (Kessler et al., 2005). Thus, given its prevalence during adolescence and overlap with specific phobias, it is also positively associated with nomophobia.

3. Methodology

3.1 Sample

Eligibility for participation in this study was limited to native Greek speaking adolescents in the age range of 15 and 17 years, as well as young adults in the age range of 18 and 22 years. All participants owned a smartphone. The age range was determined based on the need to examine the phenomenon of nomophobia in Cyprus among adolescents. A recent study which examined the

prevalence of nomophobia among adults in Cyprus revealed that nomophobia was negatively related to age (Mousoulidou et al., 2025), thus constituting further research among adolescents as a matter of great importance. Lower ages were excluded due to the difficulties that might have arisen in securing approval from the Cyprus National Bioethics Committee, as well as in view of the lower possibility in having a smartphone. In addition, non-native Greek-speaking participants were excluded to avoid heterogeneity of the sample. Since Cyprus is considered to be a culturally diverse region, the inclusion of only Greek native participants eliminated the problem of cultural divergence. All participants were smartphone owners ensuring both linguistic consistency and relevance to the study's focus.

The minimum sample size determined for the current study was set to 400 participants based on the number of variables examined. The aim was to determine the minimum sample size required to obtain statistically significant results for inferential analyses, maintaining the statistical power (1-β=95%) and statistical significance level (α=0.05). The current study's final sample consisted of 433 participants with an age range of 15 to 22 years. Of these, 252 were female (58.2%), 175 were male (40.4%), and six identified as other (1.4%). Participants' age ranged from 15 to 22, with a mean age of 17.97 years (SD=2.422 years). Two hundred and twenty-four of the participants (51.7%) were middle adolescents (15-17 years old), and 209 of the participants (48.3%) were late adolescents/emerging adults (18-22 years old). Regarding the age at which participants first acquired a mobile phone, 20 of the participants (4.6%) first acquired a phone before the age of 8, 149 of the participants (34.4%) first acquired a phone between the ages of 9 and 11, 218 of the participants (50.3%) between 12 and 14, 43 of the participants (9.9%) between

the ages of 15 and 17 and only three of the participants (0.7%) first acquired a phone after the age of 18.

3.2 Measures

The questionnaire that the participants were asked to fill in for this study consisted of six parts. The first part included questions about the personal and demographic characteristics of the individuals. The other five parts consisted of the five instruments selected for the purpose of this research. Permission for using them was requested from those who validated the questionnaires in the Greek language. It should be noted that since the FoMO questionnaire had not been previously validated in Greek, the translation of the instrument was undertaken within the framework of the present study. The average time needed to complete the specific questionnaires was approximately 15 minutes and participation was voluntary and anonymous. Before proceeding to the main pages of the questionnaires, participants were required to read the reference form inviting them to participate in the study (Appendix A), as well as the relevant information and consent forms (Appendix B). These forms were made available in electronic format. To be able to proceed to the main page (to fill out the demographic information and subsequently the other five questionnaires), participants had to indicate consent by clicking on the icon indicating the word 'YES'. By doing so, they confirmed that they were aware of and agreed with the research framework. In addition, before moving to the personal information form page, participants had to click ‘YES’ to confirming smartphone ownership as well as confirming that their age was within the age range of 15 and 22.

Specifically, the data were collected through (I) Personal Information Form, (II)

Nomophobia Questionnaire (NMP-Q) developed by Yildirim & Correia (2015), (III) University of California Los Angeles (UCLA) Loneliness Scale-Version 3, developed by Russell (1996), (IV) Fear of Missing Out Scale (FoMO) developed by Przybylski et al. (2013), (V) The Symptom Checklist 90-R Scale developed by Derogatis et al. (1976), and (VI) The Bergen Social Media Addiction Scale (BSMAS) developed by Andreassen et al. (2016).

3.2.1 The personal information form

The form was developed by the researcher. It included questions to gather demographic data on participants' age and gender, as well as specific questions concerning smartphone acquisition and use. Three questions were developed and administered with the purpose of looking into the characteristics of the participants in relation to mobile use. The first question asked participants to state the age at which they first acquired a smartphone. The second question asked participants to indicate the hours they spend using their mobile and the third question asked participants to indicate the hours they spend on social media. The last two questions used Likert-type options, allowing participants to choose from the following categories: none, up to 1 hour, 1-2 hours, 2-3 hours, or more than 3 hours.

3.2.2 Nomophobia questionnaire

To explore participants' nomophobia level, the 20-item Nomophobia Questionnaire (NMP-Q) originally developed by Yildirim & Correia, (2015) and validated in the Greek Language by Gnardellis, Notara, et al., (2023), was employed. The NMP-Q was developed to measure nomophobia levels and to explore the dimensions of nomophobia. It is a self-report measure assessing the severity of nomophobia and consisting of 20 questions (e.g., "I would be annoyed if I could not use my smartphone and/or its capabilities when I wanted to do" so, or "If I did not

have my smartphone with me, I would feel uncomfortable because I could not stay up-to-date with social media and online networks"). The questions are rated on a 7-point Likert-type scale, ranging from 1 (strongly disagree) to 7 (strongly agree). The sum score of the participants' responses ranges between 20 and 140, with higher scores indicating more severe levels of nomophobia. Specifically, the sum score divides participants into four levels of nomophobia: (a) absence of nomophobia (score between 0 and 20), (b) mild nomophobia (score between 21 and 59), (c) moderate nomophobia (score between 60 and 99) and severe nomophobia (score between 100 and 140).

Apart from measuring nomophobia level, the NMP-Q Scale also categorizes nomophobia into four factors, thus providing a qualitative understanding of the condition. Factor 1, labelled as "not being able to communicate", includes items 10 to 15 and refers to the anxiety individuals feel when they are unable to connect with others (i.e. "if I did not have my smartphone with me I would be worried because my family and/or friends could not reach me"). Factor 2, labeled as "losing connectedness", comprises items 16 to 20 and corresponds to individuals' fear of being disconnected from social networks and online communities (i.e. "if I did not have my smartphone with me I would feel anxious because I could not check my email messages"). Factor 3, labeled as "not being able to access information", includes items 1 to 4 and refers to the anxiety individuals feel about not having access to information (i.e. "I would feel uncomfortable without constant access to information through my smartphone"). Finally, Factor 4, labeled as "giving up convenience", comprises of items 5 to 9 and corresponds to individuals' discomfort from losing the convenience of using applications (Galhardo et al., 2020; Gnardellis, Notara, et al., 2023).

The reliability analysis of the original study of Yildirim and Correia, (2015) showed good internal consistency, with Cronbach's alpha for all items being equal to 0.945. Concerning the Cronbach's α values for the four factors of nomophobia, these were equal to 0.939, 0.874, 0.827, and 0.814 respectively. In addition, the validity analysis demonstrated good construct validity of the NMP-Q, making it a valid measure to assess the level and severity of nomophobia.

Concerning the Greek translated version of the NMP-Q, this has been validated for the Greek population and translated into Greek using both forward and backward translation process by Gnardellis, Notara, et al., (2023). The validation results indicated that the Greek Version of NMP-Q has good psychometric properties constituting it a valid instrument for assessing the severity of nomophobia. In particular, the test results showed high internal consistency with the reliability index (Cronbach's α) equal to 0.945 for all items and 0.936, 0.895, 0.867 and 0.874 for factors one to four respectively, which are very close to those of the original questionnaire (Gnardellis, Vagka, et al., 2023) for both scales. In addition, both exploratory and confirmatory factor analysis revealed that the four-factor structure of the Greek questionnaire is in agreement with the original one (Gnardellis, Notara, et al., 2023)

Worth noting is that even though the sample used for validation of the questionnaire consisted of young adults between 19 and 24 years old, the NMP-Q Scale has also been used for a number of studies among adolescents (D. M. Gezgin, Cakir, et al., 2018; D. M. Gezgin, Hamutoglu, et al., 2018; Kuscu et al., 2021; M. Sharma et al., 2019; Terzi et al., 2024).

The items' internal reliability for the current sample was excellent, with a Cronbach's alpha value of 0.944 (0.939 to 0.944) for all items, which closely matches both the original and the

Greek validated questionnaire. Concerning factors one to four, Cronbach's alpha values were 0.836, 0.817, 0.843 and 0.782 respectively, which are considered to be good and relatively comparable to both the original and the Greek validated questionnaire.

3.2.3 University of California Los Angeles (UCLA) Loneliness Scale

To explore participants' loneliness level, the 20-item UCLA Loneliness Questionnaire (Version 3), developed by Russell (1996) and validated in the Greek language by Pikea et al. (2016) was employed. UCLA Scale was originally developed to measure subjective feelings of loneliness as well as feelings of social isolation (Russell et al., 1978) and it has been revised twice. The purpose of the first revision was to convert 10 out of the 20 original questions to reverse scored, whereas the second revision aimed to simplify the wording of the previous versions (Russell, 1996). The questionnaire includes 20 questions (e.g. "How often do you feel isolated from others?" or "How often do you feel that you have a lot in common with people around you?"). The questions are rated on a Four-point Likert type scale ranging from one (never) to four (often). Consequently, the sum score of the participants' responses ranges between 20 and 80. The sum score divides participants into four levels of loneliness, with the most commonly used categorization being as follows: (a) low degree of loneliness (score between 20 and 34), (b) moderate degree of loneliness (score between 35 and 49), (c) moderately high degree of loneliness (score between 50 and 64) and high degree of loneliness (score between 65 and 80) (Deckx et al., 2014).

Regarding the psychometric properties of the questionnaire, it was demonstrated that the scale was highly reliable, both in terms of internal consistency and test-retest reliability. In the first case the values of the Cronbach's α coefficient ranged between 0.89 and 0.94, whereas the test-retest reliability over a period of one year showed an r coefficient equal to 0.73. Additionally, the

scale exhibited satisfactory convergent and construct validity, indicating that UCLA Loneliness Scale (Version 3) provides a valid and reliable assessment tool for measuring loneliness level among a variety of populations. (Russell, 1996).

The Greek translated version of the UCLA Loneliness scale used for the purposes of the current study has been validated in Greek adults with HIV by Pikea et al., (2016). The Greek UCLA Scale, which not only assesses the level of loneliness, but also the exploratory factor analysis generated a three-factor structure for the Greek version, thus providing a more qualitative understanding of the condition. Factor 1, "social loneliness" includes nine items, Factor 2, "psychological loneliness" comprises five-items, and Factor 3 "Isolation" includes five items.

Both validity and reliability analyses were performed, with the results showing that the Greek UCLA Loneliness Scale constitutes a reliable and valid instrument for assessing Loneliness. Specifically, the test results showed high internal consistency with the reliability index (Cronbach's α) for the total UCLA score to be equal to 0.9, which is comparable to the alpha values of the original questionnaire (0.89 to 0.94). Concerning the three factors, these also showed good internal consistency with alpha values to be 0.898 0.870 and 0.767 for social loneliness, psychological loneliness and isolation, respectively. In addition, the test-retest reliability analysis over a period of two weeks, revealed a satisfactory short-term stability. Finally, the scale showed a satisfactory convergent validity.

It is worth mentioning that, even though the sample used for validation of the questionnaire consisted of adults, the UCLA Scale has been also used for studies among adolescents (Kayaoğlu & Başcıllar, 2022; Parashkouh et al., 2018).

The items' internal reliability for the current sample was excellent, with a Cronbach's alpha value of 0.913 (0.905 to 0.916), which is stronger than both the original and the Greek validated questionnaires.

3.2.4 Fear of Missing Out Scale (FoMO)

The FoMO Scale, developed by Przybylski et al. (2013) was employed to assess the pervasive apprehension that others might be having rewarding experiences, from which one is absent. The feeling is closely tied to the desire to remain continually connected with what others are doing. The questionnaire captures this psychological construct through 10 statements that measure the extent to which individuals fear missing out on social events ore experiences, particularly those involving their friends. Examples of items include questions such as "I get worried when I find out my friends are having fun without me", or "It bothers me when I miss an opportunity to meet up with friends". Each item is rated on a five-point Likert type scale ranging from 1 (not at all true for me) to 5 (extremely true of me). The individual scores are obtained by averaging responses across all 10 items, producing a total score between 10 and 50. Higher scores reflect higher levels of FoMO, while lower scores indicate lower susceptibility (Przybylski et al., 2013). Notably, no reverse-scored items are included in this instrument, as all questions are oriented in the same direction. Although cut-off points for "low", "medium" or "high" FoMO have been suggested in previous studies, no universally accepted thresholds exist (Hoşgör & Hoşgör, 2020). What the scale reliably provides, however, is an indication of the intensity of an individual's concern with missing out on rewarding social experiences.

Regarding its psychometric properties, the scale has demonstrated strong internal consistency with Cronbach's α coefficient ranging between 0.87 and 0.90. In terms of validity, the

instrument has shown satisfactory construct and content validity, as well as convergent validity, particularly in relation to social media engagement. The results of reliability and validity analysis constitute the FoMO scale as an appropriate assessment scale for the fear of missing out in general, as well as across technological-mediated communication contexts in particular (Przybylski et al., 2013).

It is reported that the FoMO scale has been translated into Greek to be used by the Greek-speaking population as a part of this study. The translation from English into Greek was carried out using the "forward-backward" procedure. The translators were two independent bilingual academic professionals with expertise in psychology, thus familiar with the terminology. The questionnaire was first translated into the Greek language (forward translation) and afterwards the translators worked together to reach 100% agreement of the final translation. This Greek version was then translated into the English language (backward translation) from a third academic professional, whose native language was English and who was not aware of the original English FoMO version. Some minor differences were observed and the relevant changes were made for the items to be very close to those of the original English version. For the pre-test part, the pre-final version was administered to 30 undergraduate students, since 30 participants are suggested as the ideal minimum for pilot testing (Perneger et al., 2015). The sample of the pilot testing was not included in the final study sample. The questions were easy and clear to understand and no comprehension problems were reported. Therefore, the final Greek version of the FoMO scale was subsequently administered for the purposes of the current study.

Both validity and reliability analyses were performed, with the results showing that the Greek FoMO Scale can be considered as a reliable and valid instrument for assessing the fear of

missing out. Specifically, test results showed acceptable internal consistency with the reliability index (Cronbach's α) for the total FoMO score to be equal to 0.775 (0.75 to 0.769). Notably, the alpha values, although lower than those of the original scale (0.87 to 0.90), were satisfactory, exceeding the commonly accepted threshold of 0.70 for acceptable reliability. Alpha values of the ten questions of the scale ranged between 0.75 and 0.77.

To evaluate the construct validity of the translated Fear of Missing Out (FoMO) questionnaire, Principal Component Analysis with Varimax rotation was employed to perform an Exploratory Factor Analysis (EFA). The value of the Kaiser-Mayer-Olkin (KMO) was 0.750, which is considered acceptable, thus indicating that the sample size was suitable for factor analysis. In addition, Bartlett's Test of Sphericity was statistically significant (χ^2=1077.66, p<0.001), confirming that correlations among items were sufficient for factor extraction and analysis. Additionally, the factor analysis revealed three out of the ten components with initial eigenvalues greater than one. These three components explained 60.16% of the total variance, which is a satisfactory level for social sciences research. The Rotated Component Matrix showed that most items loaded clearly on a single factor, aligning with the theoretical structure of the instrument. It is worth noting that most other items loaded strongly on their respective factors, with factor loadings to be typically above 0.50, thus supporting the internal structure of the scale. On the contrary, items 3 and 6 showed slightly lower communalities (0.464 and 0.416, respectively), suggesting that they contribute less to the extracted factors, but they were still retained for theoretical consistency. Although questions three and six demonstrated comparatively lower communalities than the remaining items, both were retained in the final factor structure. This decision was based on theoretical and methodological considerations rather than solely on

statistical criteria. Specifically, these items continued to load positively on their respective factors and their communalities, although somewhat lower, did not fall below the commonly cited threshold of 0.30, which would indicate a serious concern. Removing them would have reduced the conceptual coverage of the FoMO construct and would have potentially compromised the content validity of the scale. Furthermore, retaining all items preserved the comparability of the current findings with previous research that employed the original version of the instrument.

Nevertheless, the overall factor structure was clear, interpretable, and aligned with theoretical expectations. The three factors appeared to represent conceptually distinct aspects of FoMO, such as general worry about missing out, social comparison and online monitoring. Consequently, the results support the translated FoMO scale as a psychometrically sound instrument, demonstrating both acceptable internal consistency and valid factorial structure. It is therefore suitable for assessing FoMO in the current population and context. However, further validation with a larger and more diverse population is recommended.

Finally, it should be noted that although FoMO scale was originally developed and validated in adults, it has been widely used in assessing the fear of missing out of adolescents (Beyens et al., 2016; Bloemen & De Coninck, 2020a, 2020b).

3.2.5 The Symptom Checklist 90-R Scale

To assess the participants' anxiety and phobic anxiety, the Symptom Checklist 90-R (SCL-90-R) Scale has been employed. The SCL-90 was originally developed by Derogatis et al. (1976). The SCL-90-R is the revised version of the Symptom Checklist-90 (SCL-90) scale, being almost identical to the original one, with only two questions worded slightly differently. The SCL-90 is

considered to be an instrument that covers the severity of psychological symptoms subjectively experienced by the patient (Schauenburg & Strack, 1999). It is a multidimensional symptom self-report inventory, assessing nine primary symptom dimensions plus three additional indices of pathology. The primary symptoms or psychological problems assessed are somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, anger-hostility, phobic anxiety, paranoid ideation, and psychoticism (Dadiotis et al., 2021; Derogatis & Covi, 1973).

The instrument comprises of 90 statements, with each group of statements assessing one of the psychological problems or symptoms mentioned above. For this study, only the nine items assessing anxiety and the seven items assessing phobic anxiety were used. The items are rated on a five-point Likert type scale ranging from zero (not at all) to four (extremely) and the participants were requested to endorse on this scale, how much they had suffered from each of the symptom within the last seven days (Schauenburg & Strack, 1999). Individual scores for each subscale were calculated using the sum of the responses to the relevant statements, divided by the number of statements, thus calculating the mean score. Consequently, the mean score of the participants' responses for each sub-scale ranged between zero and four. It is mentioned that all questions are worded in the same direction as what the scale is measuring, therefore there are no reverse scored questions. Higher mean scores indicate more severe psychological or mental distress (Derogatis & Cleary, 1977).

Regarding the psychometric properties of the scale, it should be noted that it has shown satisfactory reliability and validity, establishing it as a valid instrument to assess the severity of psychological symptoms it is intended to measure. Specifically, test-retest reliability (correlation coefficients) for the scale with one week interval ranged between 0.80 and 0.90, and between 0.68

and 0.91 with over a two-week interval (Derogatis et al., 1976). Concerning the validity of the instrument, the SCL-90-R has demonstrated a convergent-discriminant validity relative to the Minnesota Multiphasic Personality Inventory (MMPI) (Derogatis et al., 1976).

For the purposes of the current study, the Greek translated version of the Revised Symptom Checklist 90 (SCL-90-R) has been used, according to which no official cut-off points for the subscales have been established and consequently Greek studies have operationalized their own thresholds depending on the research context (Donias et al., 1991). For instance, Kostaras et al. (2020) have set a cut-off score of 1.2 for the purpose of their study. Since this study examined how nomophobia is related to the level of anxiety and phobic anxiety and it was not intended to distinguish individuals as psychologically healthy and non-psychologically healthy, no cut-off point was set.

The instrument was translated into Greek by Donias et al., (1991). It was completed by 248 outpatients with various psychiatric diagnoses for the purpose of their study, as well as 53 healthy participants, acting as a control group. The two groups showed significant differences in the mean scores of the nine sub-scales and the three pathology indices of the instrument. However, no significant differences were found between the mean values of the subscales and the indices, between the two genders in the control group. It is worth noting that the discriminant function analysis showed that the participants in both the patient and control groups were correctly classified, supporting the validity of the Greek version of the SCL-90-R and its usefulness in both clinical practice and research (Donias et al., 1991).

Additionally, a study carried out with 839 adolescents in Cyprus re-examining the

optimum factor structure of the SCL-90-R and its usefulness for the assessment of psychological disorders indicated reasonable support for the SCL-90-R instrument and the use of the nine sub-scales (Gomez, Karimi, et al., 2024). It is also noted that the scale can be used for adolescents aged 13 years old and above (Gomez et al., 2021).

The items' internal reliability for the current sample was excellent for the anxiety scale, with a Cronbach's alpha value of 0.9 (0.885-0.897) and good for the phobic anxiety scale with a Cronbach's alpha value of 0.845 (0.812-0.835).

3.2.6 The Bergen Social Media Addiction Scale (BSMAS)

To explore participants' severity of the addictive use of social media, the 6 items BSMAS Scale, originally developed by Andreassen et al. (2016) and validated in the Greek Language by (Dadiotis et al., 2021), was employed. BSMAS is considered one of the most widely used measures to assess addiction to social media (Gomez, Zarate, Brown, Hein, et al., 2024). As explained by Griffiths (2005), tt is based on six main characteristics of addiction, namely obsession, tolerance, relapse, conflict, withdrawal symptoms, and mood modification.

Actually, the BSMAS scale was developed and adapted from the Bergen Facebook Addiction Scale (BFAS) originally developed by Andreassen et al. (2012) by replacing the word "Facebook" with "social media" throughout all of its items (Andreassen et al., 2016a). This adaptation aimed to broaden the scope to encompass other social media platforms apart from Facebook, such as Instagram, Twitter, and similar sites (Gomez, Zarate, Brown, Hein, et al., 2024). The BSMAS aims to measure and assess social media addiction, and consists of six statements (e.g. "You feel the urge to use social media more and more?" or "You use social media

in order to forget about personal problems?"). Each of the scale's items corresponds to one of the addiction components, including mood improvement with social media, conflict/loss of functioning resulting from involvement with social media, salience (i.e. preoccupation with social media), withdrawal symptoms such as restlessness and negative feelings created by reduction or preclusion from involvement with social media, tolerance (i.e. requiring increasing involvement with social media to be satisfied) and relapse or loss of control (i.e. return to previous social media addiction patterns after a period of control or absence) (Andreassen et al., 2016a; Dadiotis et al., 2021; Gomez, Zarate, Brown, Hein, et al., 2024).

Regarding its structure, a unifactorial model has been identified and its statements are rated on a five-dimensional Likert-type scale ranging from one (very rarely) to five (very often). Hence, the sum score of the participants' responses can range between six and 30, with higher scores indicating greater reliance and problematic use of social media (Zarate et al., 2023). It is noted that all questions are worded in the same direction as what the scale is measuring, hence there are no reverse-scored questions. The sum score divides participants into four levels of social media addiction, with the most commonly used categorization being as follows: (a) absence or no social media addiction (score between 6 and 16), (b) mild degree of social media addiction (score between 17 and 21), (c) moderate level of social media addiction (score between 22 and 26), and (d) severe social media addiction (score between 27 and 30) (Andreassen et al., 2016a; Dadiotis et al., 2021).

It is reported that this scale was validated in both adolescents and adults, and thus used in both populations. Actually, psychometric evaluation was performed by engaging participants from Norway aged between the ages of 16 and 88 , hence the scale can be used among both adolescent

and adult populations (Andreassen et al., 2016a). It is worth mentioning that the scale showed good psychometric properties and specifically good internal consistency with Cronbach's α= 0.88 (Andreassen et al., 2016b, 2016a). Additionally, a systematic review among 23 studies supported the psychometric properties of the scale across 17 languages (Bottaro et al., 2025).

The Greek translated version of the Bergen Social Media Addiction Scale (BSMAS), used for the purposes of the current study, has been validated in 325 Greek University adult students by Dadiotis et al., (2021). The instrument was translated into Greek using the "forward-backward" procedure. It should be noted that the confirmatory factor analysis of the Greek version supported the one-factor model. As far as the psychometric properties are concerned, the findings showed that the Greek version of the BSMAS is both a valid and reliable instrument for assessing Social Media Addiction, with the internal consistency of the scale being satisfactory and the Cronbach's α=0.75 (Dadiotis et al., 2021).

The items' internal reliability for the current sample was good, with a Cronbach's alpha value of 0.822 (0.779-0.819), which is better than the Greek validated scale and close to the original scale.

3.4 Procedure

Upon the necessary approval from the Cyprus National Bioethics Committee (ΕΕΒΚ ΕΠ 2025.01.68, 2 February 2025; Appendix C), the measures used in this study were compiled into a single questionnaire created via Google Forms. Data collection procedure was performed by a synchronous internet-based survey, considering confidentiality and personal data protection criteria. Data were collected via convenience and snowball sampling methods between March 14 and April

29, 2025, to recruit as many participants as possible. The author distributed invitation calls to participate in the study through social networking platforms (e.g., Facebook, Instagram), social chatting applications (e.g. Viber, WhatsApp, Messenger), and emails to personal contacts. Those who wished either to participate or to contribute to the recruitment of the required sample size were asked to promote the invitation to participate through their own email, social networking platforms or social chatting applications. Consent to participate was obtained before completing the questionnaire, which took approximately 15 minutes. The survey remained online for approximately seven weeks until the required sample of participants was secured.

Prior to completing the questionnaires, participants were informed about the study's purpose and duration, their option to contact the researcher or a university representative if needed, and they were assured of their anonymity when participating. Additionally, they were informed that participation in the survey was voluntary and participants were given access to the questionnaires after reading the relevant information and consent forms. These forms were made available in electronic format and participants' consent was obtained after they clicked on the icon indicating the word 'YES', ensuring that they had read and agreed to the research framework. This was followed by the participation criteria pages. To be able to proceed to the questionnaires, participants should click 'YES' to the statements that 'I am a smartphone owner' and 'My age is between 15 and 22 years old'. If participants clicked 'NO' to either of the two questions, they could not proceed. Otherwise, they proceeded to the main page where the demographic information was completed first, followed by the remaining questionnaires.

Although the study was conducted with an adolescent population, no ethical risks were expected and it was emphasized that their participation in the current study was not expected to

cause emotional or other types of discomfort. As a matter of fact, no complaints were made about this. In addition, participants were allowed to discontinue their participation at any point in time before completing the questionnaire. It is noted that no participants requested withdrawal after completing the questionnaire.

The main ethical consideration was safeguarding participants' confidentiality by ensuring that all data were stored securely and were reported anonymously. After data collection, the responses were numerically coded to analyze them electronically through the selected statistical package. To ensure the safeguarding of personal information, all procedures involving data collection, data analysis and publication, strictly adhered to anonymity protocols. Data were collected solely by the researcher and stored electronically on a USB drive, accessible to no one except the researcher of this study. The presentation or any publication of the results referred to the sample as a whole and not individually to each participant. The coding and statistical analysis of the data have been carried out and raw data will be saved for a period of five years after the completion of the research.

3.5 Data Processing and Measures

After data collection, several factors were extracted from the questionnaires. With regards to demographics, age and sex categories were created to distribute our sample for analytical purposes evenly. Regarding sex, even though the questionnaire allowed for three options: (a) Female, (b) Male, and (c) Other, since only 6 participants (1.4%) identified as other, this category was not used for analytical purposes. As far as age is concerned, it is noted that although some respondents had answered 'YES' to their age being between 15 and 22 years, they reported an age outside of this

range in the demographics form. Consequently, they were excluded from the sample, and their answers were deleted. The remaining participants, who mentioned an age within the required range were divided into two groups: the middle adolescents group, including participants between ages 15 to 17 and the late adolescents/emerging adulthood group including participants between the ages of 18 to 22. With regards to the age of acquiring a phone, apart from the actual age, the participants were divided into five categories (a) early school age (before eight years old) (b) school age (between nine and eleven years), (c) early adolescence (12-14 years), (d) middle adolescence (15-17 years) and (e) late adolescence/ emerging adulthood (18-22 years). Since only 3 participants (0.7%) acquired a phone in adulthood, this category was not used for analytical purposes. Considering the time spent using their phone and the time spent on social media, the participants were divided into five categories (a) none, (b) up to one hour, (c) between one and two hours, (d) between two and three hours and (e) more than three hours. For the time spent using the phone, the first two categories (none and up to one hour) were not used for further statistical analyses since only 1 (0.2%) and 6 (1.4%) respectively were included in these categories. Concerning the time spent on social media, only five participants (1.2%) reported that they did not spend any time on social media and these were consequently excluded from the statistical analyses.

Further, the NMP-Q was used to extract an NMP-Q total score for each participant, categorizing their nomophobia into four levels: (a) absence of nomophobia, (b) mild nomophobia, (c) moderate nomophobia, and (d) severe nomophobia. Since only 4 participants (0.9%) reported absence of nomophobia, this category was excluded in the analysis of results. Additionally, NMP-Q was used to calculate the four factors of nomophobia: (a) not being able to communicate, (b)

losing connectedness, (c) not being able to access information, and (d) giving up convenience for each participant.

With regards to UCLA Scale, it is worth noting that not all questions are scored in the same direction, with questions 1, 5, 6, 9, 10,15,16,19 and 20 being worded in the opposite direction of what the scale is measuring. Specifically, higher scores in the reverse or negatively stated questions, indicated how lonely someone feels. On the contrary, higher scores in the positively stated questions indicated social satisfaction (e.g. “How often do you feel part of a group of friends”). Consequently, reverse questions had to be reverse scored, so that higher total scores should indicate higher levels of loneliness (Russell, 1996). Similarly to the NMP-Q Scale, the UCLA Scale was also used to categorize participants into four categories: (a) low degree of loneliness, (b) moderate degree of loneliness, (c) moderately high degree of loneliness, and (d) high degree of loneliness. As with the Nomophobia categories, not all Loneliness categories were used for analytical purposes. Specifically, the category high degree of loneliness was excluded since only 11 participants (2.5%) reported to belong in it. For the purposes of the present study, only the total loneliness score and the categorical classification of loneliness levels were utilized in the statistical analyses. In contrast, the three factors of loneliness (social loneliness, psychological loneliness, and isolation) were excluded from further analysis. This decision was guided by the study’s primary focus on nomophobia rather than loneliness per se. Furthermore, the majority of existing studies in the field employ overall loneliness categories rather than its factors, thereby facilitating comparability of the present findings with those of prior research.

Concerning the SCL-90-R Scale, the relevant items used to measure anxiety were 2, 17, 23, 33, 39, 57, 72, 78, 80 and 86 (e.g. “How much were you bothered by trembling”, or “How much

were you bothered by feeling pushed to get things done"). For assessing phobic anxiety, statements 13, 25, 47, 50, 70, 75 and 82 were used (e.g. "How much were you bothered by feeling afraid in open spaces or on the streets", or " How much were you bothered by feeling afraid you will faint in public"). In this case, all questions are worded in the same direction of what the scale is measuring, hence there are no reverse-scored questions. Higher mean scores indicated more severe psychological or mental distress (Derogatis & Cleary, 1977).

With respect to BSMAS Scale and based on the relevant instructions, the Scale was used to categorize participants into five categories (a) absence, (b) normal, (c) mild, (d) medium and (e) high. It is noted that only 12 participants (2.8%) reported a high level of BSMAS thus being excluded from the statistical analysis of the results.

Taking into consideration that the other scales used (FoMO, Anxiety, and Phobic Anxiety), do not provide categorical classifications of participants based on their score, the total or average score was used for analytical purposes, always according to the instructions given for each scale.

3.6 Statistical Analysis

Statistical analysis of the data was performed with the Statistical Package for Social Sciences, Version 29.0 (SPSS 29, IBM Corporation, Armonk, NY, USA). The significance level for the tests was set to 5%. The normality of the distribution of the numerical variables was tested using the Kolmogorov-Smirnov normality test. Based on the specific test, none of the variables in the current study followed a normal distribution ($p < 0.05$), as shown in Table 2. However, parametric tests were deemed appropriate taking into consideration the values of skewness and kurtosis. Additionally, the reliability of the measurements was assessed using Cronbach's coefficient. The

descriptive data were presented as mean values with standard deviation for the numerical variables, which are age, age of first acquiring a mobile phone, total nomophobia score, total score of each nomophobia factor, total loneliness score, average FoMO score, average score of anxiety, average score of phobic anxiety, and total BSMAS score. Concerning the categorical variables, which were gender, age group, category of age acquiring phone, category of time spent on mobile phone, category on time spent on social media, type of nomophobia, type of loneliness, and type of BSMAS, the descriptive data were presented as frequencies and percentages.

Before proceeding to other statistical analyses, the reliability and validity of the FoMO Greek Version were tested. The results supported the translated FoMO scale as a psychometrically sound instrument, demonstrating both acceptable internal consistency and valid factorial structure. It was therefore considered suitable for assessing FoMO in the current population and context. However, further validation with a larger and more diverse population is recommended.

An independent sample t-test was used to examine possible significant differences among the two genders and the level of nomophobia that participants exhibited. In a similar way, differences between the two age groups and the level of nomophobia, were investigated. Univariate ANOVAs and Tukey HSD post hoc tests were used to examine significant differences between nomophobia and (a) age acquiring phone, (b) time spend on smartphone, (c) time spend on social media, (d) type of loneliness, and (e) type of BSMAS. It is reported that in the cases of both t-tests and Univariate ANOVAs, the homogeneity of variance was examined using Levene's test. Crosstabs and chi-square tests were also incorporated to investigate the significance between the different groups of sex, age, age of acquiring phone, time spent on smartphone, time spent on social media, type of loneliness, type of BSMAS, and the different types of nomophobia. Pearson correlation

analyses were computed to examine possible associations between nomophobia and (a) loneliness, (b) fear of missing out (FoMO), (c) social media addiction, (d) anxiety, and (e) phobic anxiety. The associations between the same variables and the factors of nomophobia were also investigated using Pearson correlation analysis. Finally, linear regression analysis was used to examine the predictive role of each independent variable on monophobia.

4. Results

4.1 Descriptive Statistics

Descriptive statistics were calculated for all variables included in the study. The current study's final sample consisted of 433 adolescents as analysed in the relevant paragraph. It is also noted that participants reported spending 2.70 hours per day using their phones (SD=0.63). Only one of them (0.2%) reported they didn't use their phone at all, and only six of them (1.4%) said they used it for up to an hour. For the same reasons as the gender types and the age groups that first acquired the phone, the seven people who either didn't use the phone at all, or used it for up to 1 hour, were included in the sample but not in any further statistical analyses. Also, 25 of the participants (5.8%) were using their phone for 1 to 2 hours, 107 of them (24.7%) were using the phone for 2 to 3 hours, and 294 of the participants (67.9%) were using their phone more than 3 hours.

Concerning the time spent on social media, participants reported spending an average of 2.10 hours per day on social media (SD = 0.88). Only five participants (1.2%) reported that did not spend any time on social media, 38 of the participants (8.8%) were spending up to one hour on social media, 105 (24.2%) were spending between 1 to 2 hours, 126 of them (29.1%) between 2 to 3 hours, and 159 of them (36.7%) were using a phone for more than 3 hours. The five participants

that did not spend any time on social media were excluded from further statistical tests concerning associations with the type of time spent on social media, though included in the sample.

With respect to the psychological variables, beginning with nomophobia, the results indicated a high mean score (M = 86.34, SD = 25.61), on a scale ranging from 20 to 140. Dividing the participants into four groups based on their total nomophobia score, according to the NMP-Q Scale, only four participants (0.9%) fell within the "absence" level of nomophobia. Although the four participants were included in the sample, they were excluded from the analyses that examined associations with nomophobia type, due to the limited representation of this group in the sample. With regards to the other nomophobia types, 66 participants (15.2%) revealed mild level of nomophobia, 219 participants (50.6%) fell in the type of moderate level of nomophobia and 144 of the participants (33.3%) revealed severe level of nomophobia. Nomophobia was further analysed through four subscale factors. The mean score for Factor 1 reflecting to the fear of "not being able to communicate" was 29.67 (SD = 9.37). Factor 2, which captures the fear of "losing connectedness" had a mean of 17.14 (SD = 7.71), Factor 3, which is related to the fear of "not being able to access information" showed a mean score of 19.31 (SD = 5.37), and finally, Factor 4 reflecting the fear of "giving up convenience" averaged 20.21 (SD = 7.56). These results suggest that all facets of nomophobia were notably present among adolescents.

Concerning loneliness, the average loneliness score was 42.70 (SD = 10.88) based on a scale ranging between 20 and 80. As Table 1 shows, when participants are divided into four groups based on their total loneliness score, according to the UCLA Loneliness Scale, only 11 participants fell within the "high" level of loneliness. Note that although the 11 participants with a high level of loneliness were included in the sample, due to the small sample size in the "high"

level category, this group was excluded from further statistical analysis relating to the associations with loneliness types.

Table 1
Distribution of Participants Levels of Loneliness in the Current Sample

	Number of Participants	Percent %
Low	115	26.6
Moderate	195	45.0
Moderately High	112	25.9
High	11	2.5

Regarding the average score on the Fear of Missing Out (FoMO) scale, this was 2.64 (SD = 0.65) based on a scale range between one and five. For anxiety measures, the mean score on the general anxiety subscale was 0.97 (SD = 0.82), and for phobic anxiety, it was 0.98 (SD = 0.82), both based on a zero to four scale. It is noted that neither the FoMO scale nor the SCL-90 scale suggest categorization.

Finally, the mean total score on the BSMAS Scale was 16.10 (SD = 4.93), within a possible range between 6 to 30, suggesting moderate levels of social media addiction within the sample. Participants have been divided into four groups according to their BSMAS level, as suggested by the Scale. Based on the sample of the current study, 232 participants (53.6%) showed normal level of social media addiction, 138 participants (31.9%) revealed low social media addiction, 51 participants (11.8%) medium level and only 12 participants (2.8%) fell in the category of high social media addiction. As done with the other cases, given the insufficient number of participants in the “high” level group, statistical comparisons involving this category were not performed, regardless of the fact that the 12 participants were included in the sample.

4.2 Normality Test

Before performing the statistical analyses, the Kolmogorov-Smirnov normality test was conducted in order to decide whether to use parametric or non-parametric tests. Although the Kolmogorov-Smirnov test showed that all variables in the current study did not follow a normal distribution ($p<0.05$) (see Table 2), parametric tests were deemed appropriate based on additional criteria.

Table 2

Test of Normality Kolmogorov-Smirnov

	Statistic	*p- value*
Age	0.147	0.000
Age acquiring phone	0.149	0.000
Hours spent on using phone	0.414	0.000
Hours spent on social media	0.239	0.000
Total Nomophobia Score	0.059	0.001
Nomophobia Factor 1	0.103	0.000
Nomophobia Factor 2	0.065	0.000
Nomophobia Factor 3	0.081	0.000
Nomophobia Factor 4	0.061	0.001
Total Loneliness Score	0.083	0.000
Average FoMO Score	0.052	0.007
Average Anxiety Score	0.127	0.000
Average Phobic Anxiety Score	0.117	0.000
Total BSMAS Score	0.054	0.004

a. Lilliefors Significance Correction

This decision was based on the consideration that for the majority of variables, the values

of skewness and kurtosis fell within the acceptable values of +/-1 (see table 3), for assuming univariate normality in psychological research as suggested by George & Mallery, (2010). For instance, variables such as age at phone acquisition, total nomophobia, all nomophobia factors, loneliness, FoMO, anxiety and phobic anxiety, as well as BSMAS scores met this criterion, supporting the use of parametric test.

Table 3

Skewness and Kyrtosis

	Skewness	*Kyrtosis*
Age	0.329	-1.207
Age acquiring phone	-0.003	0.781
Hours spent on using phone	-1.421	1.154
Hours spent on social media	-0.162	-1.362
Total Nomophobia Score	-0.276	-0.389
Nomophobia Factor 1	-0.592	-0.429
Nomophobia Factor 2	0.341	-0.551
Nomophobia Factor 3	-0.574	0.0058
Nomophobia Factor 4	-0.046	-0.798
Total Loneliness Score	0.374	-0.429
Average FoMO Score	0.201	0.117
Average Anxiety Score	0.883	0.181
Average Phobic Anxiety Score	0.861	0.284
Total BSMAS Score	0.099	0.26

However, some variables such as age, hours spent on using phone, and hours spent on social media exhibited either skewness or kurtosis (or both in the case of hours spent on using the phone) slightly beyond this threshold. In the case of hours spent on using the phone skewness was -1.421 and kurtosis was 1.154.

In such cases, broader criteria provided by Roussos & Tsaousis, (2020) can be applied, according to which both skewness and kurtosis values up to +/-2 and kurtosis values are acceptable for considering a variable as normally distributed. Based on these guidelines, as well as the fact that even the variables that do not meet the stricter criterion of +/-1 are only slightly beyond it, and also considering the large sample size (N=433), the assumption of normality can be retained, and parametric tests are used. Therefore, despite formal tests of normality indicating deviations, the distributions of the variables of this study were considered to be approximately normal. Consequently, Pearson correlations, t-tests, ANOVAs and linear regressions were employed. It is worth noting that regression assumptions of normality were assumed.

4.3 Reliability Test

The internal consistency of the instruments used in this study was assessed with Cronbach's alpha coefficient. According to George & Mallery, (2010), α values above 0.70 are generally regarded as acceptable, above 0.80 as good, and above 0.90 as excellent. The Nomophobia scale (20 items) demonstrated excellent reliability (α = 0.944), with item deleted values ranging between 0.939 and 0.944. Its four factors also showed good reliability, with coefficients ranging from 0.782 to 0.843 (overall α = 0.859). The UCLA Loneliness scale (20 items) likewise exhibited excellent internal consistency, yielding an overall α = 0.913, with α

values ranging between 0.905 and 0.916. For the Fear of Missing Out (FoMO) scale (10 items), the results indicated acceptable reliability (α = 0.775), with item-deleted values falling between 0.749 and 0.769. The Anxiety subscale (10 items) displayed excellent internal consistency, with an overall α = 0.900 and α item-deleted values ranging from 0.885 to 0.897, while the Phobic Anxiety subscale (7 items) indicated good internal consistency, α = 0.845 (range 0.812 - 0.835). Finally, the Bergen Social Media Addiction Scale (BSMAS; six items) achieved good reliability, with an overall α = 0.822 and item deleted α ranging from 0.779 to 0.819.

Taken together, these results confirm that all scales used in the study demonstrated satisfactory to excellent reliability, indicating that they are reliable tools for assessing the constructs of interest and that no item removal would have meaningfully improved their internal consistency.

4.4 Hypothesis Testing

4.4.1 Hypothesis 1 (H1)

Hypothesis 1 was supported. The prevalence of nomophobia in the current adolescent population was significantly elevated. Only 0.9% of individuals indicated an absence of nomophobia, whereas 15.2% exhibited a mild level of the condition. Most of the participants reported either moderate (50.6%) or severe (33.3%) nomophobia. This means that 83.9% of them exhibited at least moderate nomophobia and 99.1% had at least mild nomophobia. These findings validate Hypothesis 1, indicating that teenagers in Cyprus demonstrate elevated levels of nomophobia. It is important to note that only four participants were classified in the “absence” level of nomophobia. Although they were part of the sample, they were excluded from analyses examining associations

with the nomophobia category, as the size of the "absence" group was deemed insufficient for conducting further tests.

4.4.2 Hypothesis 2 (H2)

To examine Hypothesis 2 and the statistically significant differences between nomophobia and demographics, a number of analyses were conducted. Beginning with the examination of the association between nomophobia and age, the Pearson test revealed a positive but non-significant correlation $r(433) = 0.089$, $p = 0.066$. When examining the four nomophobia factors separately, correlations with age were as follows: Factor 1 "not being able to communicate", $r(433) = 0.068$, $p = 0.159$, Factor 2 "losing connectedness", $r(433) = 0.081$, $p = 0.094$, Factor 3 "not being able to access information", $r\ (433) = 0.106$, $p = 0.028$, and Factor 4 "giving up convenience" $r(433) = 0.058$, $p = 0.226$. Therefore, only Factor 3 "not being able to access information" showed a small but statistically significant positive correlation with age. Additionally, an independent samples *t*-test was computed using the total nomophobia score and the two types of age (i.e. emerging adults group and minors group). Levene's test for equality of variances indicated that the assumption of homogeneity of variances was met, $F\ (1,431) = 0.262$, $p = 0.609$, and therefore, the t-test results were interpreted under the assumption of equal variances. However, the t-test examining possible differences between the 209 late adolescents/emerging adults ($M = 88.01$, $SD = 24.73$) and the 224 middle adolescents [$M = 84.78$, $SD = 26.36$], $t\ (431) = 1.314$, $p = 0.190$] showed that there were no statistically significant differences between the two age groups concerning the levels of nomophobia. In addition to this interpretation, the calculated effect size was very small, Cohen's $d = 0.126$, indicating that the mean difference in nomophobia between the two age groups is negligible in practical terms, even if statistical significance had been reached.

A Chi-Square test was also conducted, supporting the findings of the t-test and the non-significant relation between age and nomophobia. Specifically, the Chi-square test examining the association between age group and the categorical levels of nomophobia (mild, moderate, severe) was not significant, χ^2 (2, N=429) = 3.805, p = 0.149. Crosstabs analysis regarding the distribution of nomophobia levels across age groups, showed that, 42.4.% of middle adolescents and 57.6% of late adolescents/emerging adults exhibited mild nomophobia, 46.1% of middle adolescents and 53.9% of late adolescents/emerging adults reported moderate nomophobia, and 54.9% of middle adolescents and 45.1% of late adolescents/emerging adults reported severe nomophobia. Furthermore, the crosstab analysis for the different levels of nomophobia showed that among middle adolescents, 13.5% exhibited mild nomophobia, 48.6% exhibited moderate nomophobia and 38% exhibited severe nomophobia. For late adolescents/emerging adults the percentages were 17.2%, 53.4% and 29.4%, respectively. Overall, these results suggest that age is not significantly related to nomophobia levels in this sample, thus not supporting the first part of the hypothesis.

To investigate statistically significant differences between nomophobia and gender, an independent sample t-test was computed for the 423 participants using the total score of nomophobia and gender. Levene's test for equality of variances indicated that the assumption of equal variances was met, F (1, 421) = 1.932, p = 0.165. An independent-samples t-test showed that females reported statistically significant higher levels of nomophobia than males. Specifically, the analysis showed statistically significant differences between the 251 females (M=91.69, SD=23.30) and the 172 males [M=79.83, SD=25.80, t (421) = 4.924, p < 0.001]. The effect size was medium, Cohen's d = 0.487, indicating that the mean difference between genders was practically meaningful. The chi-square test further indicated a significant association between

gender and nomophobia categories, χ^2 (2, N = 423) = 27.498, p < 0.001. Further analysis using crosstabs showed that, within the mild category, 37.9% were female and 62.1% male, within the moderate category, 55.8% were female and 44.2% male, and within the severe category, 74.6% were female and 25.4% male. Additionally, among females, 10% exhibited mild nomophobia, 47.8% exhibited moderate nomophobia and 42.2% exhibited severe nomophobia. For males, the percentages were 23.9%, 55.2% and 20.9% respectively. Therefore, this part of Hypothesis 2 is supported.

4.4.3 Hypothesis 3 (H3)

A negative relationship between nomophobia level and the age at which a person acquires a phone for the first time is expected. Although there is limited research examining this area, a negative association between nomophobia level and the age at which a person uses a smartphone for the first time has been revealed by previous studies.

To examine Hypothesis 3 and possible negative associations between the age of first acquiring a phone and nomophobia levels, several tests have been conducted. Based on Pearson's correlation analysis, a small negative, though statistically significant relation between the two variables was revealed, r(433) = –0.112, p = 0 .019. When examining the four nomophobia factors separately, correlations with age of first acquiring phone were as follows: Factor 1 "not being able to communicate" r(433) = -0.083, p = 0.085, Factor 2 "losing connectedness" r(433) = -0.074, p = 0.123, Factor 3 "not being able to access information", r(433) = -0.116, p = 0.016, and Factor 4 "giving up convenience" r(433) = -0.120, p = 0.012. Therefore, a negative correlation with both nomophobia factor 3 "not being able to communicate" and nomophobia factor 4 "giving up convenience", was revealed indicating that participants who obtained a phone at a younger age

tend to report higher levels of nomophobia in these domains.

To further examine the statistically significant differences between nomophobia and the age of first phone acquisition, a Univariate ANOVA with nomophobia total score as the dependent variable and the age of first acquiring phone groups (early school age, school age, early adolescence, middle adolescence and late adolescence/emerging adulthood) as the independent variable was computed. Worth noting is that the late adolescence/emerging adulthood group was excluded from the statistical analysis since only three participants (0.7%) reported that they first acquired a mobile phone during emerging adulthood.

Levene's test for homogeneity of variances was non-significant F (3,422) =0.190, p = 0.903, indicating that the assumption of homogeneity of variances was met. The ANOVA indicated statistically significant differences among age groups [F (3,422) = 6.113, p <0 .001], with a small-to-moderate effect size ($\eta^2 = 0.042$). The effect size as measured by Omega squared (ω^2) was 0.035, indicating a small –to approaching- medium effect, and thus the difference in total nomophobia scores across the age group categories of first acquiring mobile phone explains about 3.5% of the variance in the data. In addition, post-hoc comparisons showed that participants who acquired a phone during early school age revealed significantly higher nomophobia scores compared to those who obtained it during early adolescence (p = 0.005). Similarly, participants who acquired a phone during school age had significantly higher nomophobia levels compared to those who obtained it during early adolescence (p = 0.007).

The Chi-Square test showed that the category of the age of first acquiring phone was not significantly related to the type of nomophobia (i.e. mild, moderate, severe), χ^2 (6, N=422) =

12.119, $p = 0.059$). However, the linear-by-linear association was statistically significant ($p = 0.021$), suggesting a trend where younger age of phone acquisition is associated with higher levels of nomophobia. The crosstabulation between type of nomophobia and age category of acquiring a phone showed that, among those with mild nomophobia, 1.6% first acquired their phone during early school age, 28.1% during school age, 59.4% during early adolescence and 10.9% during middle adolescence. With regards to participants exhibiting moderate nomophobia, 3.2% first acquired their phone during early school age, 31.9% during school age, 54.6% during early adolescence and 10.2% during middle adolescence. Among participants with severe nomophobia levels, the largest proportion (41.5%) acquired their phone in early adolescence, followed by 40.8% who acquired their phone during school age. Additionally, 7.7% of the participants exhibiting severe nomophobia acquired their phone during early school age and 9.9% during middle adolescence.

The types of nomophobia within each age group are shown in table 4. Although the Chi-Square test did not indicate a statistically significant association between the categories of age of first acquiring a phone and the types of nomophobia, based on the combined results of the analyses, Hypothesis 3 was supported. Both the Pearson's correlation and the ANOVA revealed statistically significant associations between the age of first acquiring a mobile phone and levels of nomophobia, in the expected negative direction, with younger age of acquisition linked to higher nomophobia scores. In addition, the linear-by-linear association was significant, suggesting a consistent trend. Therefore, the hypothesis is accepted, albeit with the note that the categorical association was not fully supported.

Table 4

Crosstabulation- Type of Nomophobia - Category of Age of Acquiring Phone

	Mild	Moderate	*Severe*
Early Age School	5.3%	36.8%	57.9%
School Age	12.4%	47.6%	40.0%
Early Adolescence	17.7%	54.9%	27.4%
Middle Adolescence	16.3%	51.2%	32.6%

4.4.4 Hypothesis 4 (H4)

Examining the first part of Hypothesis 4, the Pearson's correlation test indicated a significant positive relation between hours of mobile phone usage and total nomophobia score, $r(431) = 0.314$, $p < 0.001$, supporting the hypothesised association. When investigating the four nomophobia factors separately, positive significant correlations were revealed between all nomophobia factors and time spent on using phone as follows: Factor 1 "not being able to communicate" $r(433) = 0.239$, $p < 0.001$, Factor 2 "losing connectedness" $r(433) = 0.239$, $p < 0.001$, Factor 3 "not being able to access information", $r(433) = 0.286$, $p < 0.001$, and Factor 4 "giving up convenience" $r(433) = 0.320$, $p < 0.001$. Consequently, participants who spend more time using their phone tend to report higher levels of nomophobia in these domains.

To further examine the statistically significant differences between nomophobia and categories of time spent on phone usage, a Univariate ANOVA with nomophobia total score as the dependent variable and the time spent on phone usage groups as the independent variable, was conducted. With regards to the time spent using their phone, the participants were divided into five categories: (a) none, (b) up to one hour, (c) between one and two hours, (d) between two and three

hours, and (e) more than three hours. Categories (a) and (b) were not used for statistical purposes since only 1 (0.2%) and 6 (1.4%), respectively, were included in these categories. Consequently, the size of these two groups was considered too small to be included in further statistical analyses.

Levene's test for homogeneity of variances was non-significant F (2, 423) =0.562, p =0.570), confirming equal variances across groups. The ANOVA analysis revealed statistically significant differences among time spent on phone usage groups [F (2, 423) = 23.53, $p < 0.001$)], with $\eta^2 = 0.100$, and $\omega^2 = 0.096$, indicating a moderate-to-high effect size. Actually, ω^2 of 0.096 suggests that the difference in total nomophobia scores across the time spent on phone usage groups explains about 9.6% of the variance in the data. Furthermore, post-hoc comparisons showed that participants who spent more than three hours on their phone daily revealed significantly higher nomophobia scores compared to those spent between two and three hours daily (p <0.001) and to those spent between one and two hours daily ($p < 0.001$).

A Chi-square test of independence was used to investigate the relationship between the types of nomophobia level (mild, moderate, and severe) and the category of the time spent on mobile usage. The specific test revealed a statistically significant relationship between the categorical time-spent variable and type of nomophobia, χ^2 (4, N = 415) = 43.99, $p < 0.001$, showing that there are significant differences among types of nomophobia and each category of time spent on mobile. Crosstabulation showed that 17.2% of participants in the mild nomophobia group used their phones for one to two hours daily, 40.6% used their phones for two to three hours daily and 42.2% used their phones for more than three hours. Among the participants with moderate nomophobia 4.3% used their phones for one to two hours daily, 27.8% for two to three hours daily and 67.9% for more than three hours daily. Finally, among participants with severe

nomophobia only 1.4% used their phone for one to two hours daily, 15.5% for two to three hours daily and 83.1% used their phone for more than 3 hours daily.

Further analysis using Crosstabs for the different levels of nomophobia (mild moderate, severe) showed that among participants that used their phone for one to two hours daily 50% exhibited mild nomophobia, 40.9% exhibited moderate nomophobia and 9.1% exhibited severe nomophobia. With regards to participants who reported using their phone for two to three hours daily, 24.5% of them revealed mild nomophobia, 54.7% revealed moderate nomophobia and 20.8% revealed severe nomophobia. Finally, among participants who used their phone for more than three hours, only 9.4% exhibited mild nomophobia, 49.5% exhibited moderate nomophobia and 41.1% exhibited severe nomophobia.

These results support the first part of Hypothesis 4, indicating that increased daily mobile phone use is associated with higher levels of nomophobia.

To examine the second part of Hypothesis 4 and the statistically significant relation between nomophobia and the time spent on social media, a Pearson correlation analysis revealed a significant positive relationship between hours spent on social media and total nomophobia scores, $r(433) = 0.324$, $p < 0.001$, as well as with all four nomophobia factors (Factor 1, “not being able to communicate”: $r = 0.233$, $p < 0.001$; Factor 2, “losing connectedness”: $r = 0.287$, $p < 0.001$; Factor 3, “not being able to access information”: $r = 0.264$, $p < 0.001$, and Factor 4, “giving up convenience: $r = 0.328$, $p < .001$). These results suggest that participants who spend more time on social media, tend to report higher levels of nomophobia in these domains.

To further examine the statistically significant differences between nomophobia and the

categories of time spent on social media, a Univariate ANOVA with the nomophobia total score as the dependent variable and time spent on social media groups (up to one hour, between one and two hours, between two and three hours, more than three hours) as the independent variable was conducted. It is worth noting that the group of participants who reported not spending time on social media at all was excluded from the statistical analyses due to its small sample size (n=5, 1.2%), which did not allow for meaningful statistical comparisons. Before conducting the one-way ANOVA test, Levene's test for homogeneity of variances was performed, showing a non-significant result, F (3,424) =0.264, p =0.851), indicating that the assumption of equal variances was met. The analysis revealed statistically significant differences between total nomophobia scores across groups defined by daily social media usage, [F (3, 424) = 16.713, $p < 0.001$], with a medium effect size ($\eta^2 = 0.106$). In addition, the effect size as measured by Omega squared (ω^2) was 0.099 indicating a medium to large effect size. Actually, approximately 9.9% of the variance in total nomophobia scores can be explained by the time spent on social media, after accounting for random error, suggesting that social media usage has a meaningful association with nomophobia levels.

Further, post-hoc analysis showed that participants who spent more than three hours per day on social media had significantly higher nomophobia scores than those in all other groups. Specifically, participants spending more than three hours on social media scored significantly higher than: (a) those spending up to one hour (MD = 20.875, $p < 0.001$), (b) those spending between one and two hours MD = 19.258, $p < 0.001$), and (c) those spending between two and three hours (MD = 7.565, $p = 0.046$). Additionally, post hoc Tukey HSD tests also showed that participants spending between two and three hours on social media scored significantly higher

than those spending up to one hour (MD = 13.309, $p = 0.017$) and those spending between one and two hours (MD = 11.692, $p = 0.002$). No significant difference was found between the "up to one hour" and "one to two hours" groups ($p = 0.985$).

Chi-square analysis further supported these findings, revealing a significant association between nomophobia types and the categories of time spent on social media, χ^2 (6, $N = 415$) = 46.298, $p < 0.001$. Crosstabs suggested that individuals in the severe nomophobia category were overrepresented among heavy social media users, while those with mild nomophobia were more prevalent in the lower usage categories. Actually, the Crosstab analysis showed that in the mild nomophobia group, 15.6% spent up to one hour on social media, 39.1% spent between one and two hours, 32.8% spent between two and three hours, and 12.5% spent more than three hours on social media. In the moderate group, 9.1% spent up to one hour on social media, 28.2% spent between one and two hours, 29.2% spent between two and three hours, and 33.5% spent more than three hours on social media. In the severe group, 2.8% spent up to one hour on social media, 12.7% spent between one and two hours, 31.0% spent between two and three hours, and 53.5% spent more than three hours. Distribution within each time-spent group indicated that moderate nomophobia level was most common among low social media use (up to one hour) participants (57.6%), while high social media use (more than three hours) was dominated by severe nomophobia (49.4%) as shown in table 5.

Table 5

Crosstabulation- Type of Nomophobia - Category of Time Spent on Social Media

	Mild	Moderate	*Severe*
Up to 1 hour	30.3%	57.6%	12.1%
1-2 hours	24.5%	57.8%	17.6%
2-3 hours	16.7%	48.4%	34.9%
3+ hours	5.2%	45.5%	49.4%

Overall, the results support the second part of Hypothesis 4, indicating that increased time spent on social media is associated with higher nomophobia levels across all factors, with the highest risk observed among heavy social media users.

4.4.5 Hypothesis 5 (H5)

To examine Hypothesis 5 and the relationship between nomophobia and the other variables investigated in this study (loneliness, social media addiction, FoMO, anxiety and phobic anxiety), numerous analyses were conducted.

For the investigation of the first part of Hypothesis 5 and the possible associations between loneliness and nomophobia, Pearson correlation analysis was used. It was revealed that total nomophobia was significantly positively related to the subjective feeling of loneliness, $r(433) = 0.135$, $p = 0.005$. Further analysis of the nomophobia factors revealed statistically significant positive correlations between loneliness and three out of the four factors of nomophobia: Factor 2, "losing connectedness", $r(433) = 0.168$, $p < 0.001$, Factor 3, "not being able to access information,

$r(433) = 0.097$, $p = 0.044$, and Factor 4, "giving up convenience", $r(433) = 0.122$, $p = 0.011$ while the correlation with Factor 1, "not being able to communicate" was not significant , $r(433) = 0.076$, $p = 0.113$.

To investigate differences in nomophobia across levels of loneliness, a one-way ANOVA was conducted, with nomophobia total score being the dependent variable and the loneliness categories (i.e. low, moderate and moderately high) being the independent variable. It is noted that the category of high loneliness was excluded from statistical analyses due to the small size of this group. Actually, only 11 participants (2.5%) fell into this type of loneliness.

Before conducting the one-way ANOVA, Levene's test for homogeneity of variances was performed indicating that the assumption of homogeneity of variances was met, $F(2, 419) = 1.273$, $p = 0.281$. The ANOVA analysis revealed statistically significant differences between nomophobia and loneliness categories, $F(2, 419) = 3.916$, $p = 0.021$. With regards to the effect size, the eta-squared value of 0.018 and the omega-squared value of 0.014 indicated a small effect size. Additionally, post-hoc comparisons using Tukey's HSD test revealed that participants with a low level of loneliness (M = 81.15, SD = 26.99) scored significantly lower on nomophobia than those with moderately high level of loneliness (M = 90.46, SD = 25.41), MD = -9.316, $p = 0.016$. No other group differences reached statistical significance ($p > 0.05$).

Further examination between the three types of nomophobia (excluding absence) and the three types of loneliness (excluding high level) was conducted using a chi-square test, showing a non- statistically significant correlation between the two categorical variables, $\chi^2 (4, N = 407) = 8.117$, $p = 0.087$. However, the linear-by-linear association was statistically significant, $p = 0.017$,

suggesting a trend in which higher levels of loneliness are associated with higher levels of nomophobia.

Investigation of the crosstabulation showed that within mild nomophobia, the highest proportion of participants fell into the low level of loneliness (39.1%), with participants exhibiting a moderate level of loneliness with a percentage of 37.5%, while the proportion of participants with a moderately high level of loneliness was equal to 23.4%. With regards to participants exhibiting a moderate nomophobia level, 27.4% of them fell in the category of a low level of loneliness, 48.6% of them exhibited a moderate level of loneliness, and 24.1% of them exhibited a moderately high level of loneliness. Regarding participants with a severe level of nomophobia, the highest proportion was in the moderate level of loneliness (47.3%) while the percentages of low and moderately high levels of loneliness were 21.4% and 31.3%, respectively.

Across loneliness types, for the low-level category of loneliness, the percentages for each type of nomophobia were 22.5% for mild, 52.3% for moderate and 25.2% for severe. For the moderate level of the loneliness group, mild nomophobia was found in 12.7% of participants, moderate nomophobia in 54.5% of the participants and severe nomophobia in 32.8% of the participants. For the moderately high level of the loneliness group, 14% of the participants had a mild level of nomophobia, 47.7% had a moderate level and 38.3% had a severe level.

These findings indicate that this part of Hypothesis 5 is partially supported. The Pearson correlation analysis indicated a positive association between loneliness and total nomophobia, suggesting that higher loneliness is linked to higher nomophobia levels. The one-way ANOVA also showed differences in nomophobia scores between loneliness groups, with those experiencing

higher levels of loneliness scoring higher in nomophobia than those with lower levels of loneliness. However, the chi-square test examining the distribution of nomophobia severity across loneliness categories was not statistically significant, indicating that the pattern of severity levels did not differ substantially between loneliness groups. Nonetheless, the linear-by-linear association was statistically significant, suggesting a trend in which higher levels of loneliness are associated with higher levels of nomophobia.

For examining the second part of hypothesis 5 and the relation between social media addiction and nomophobia, a Pearson's correlation analysis revealed a significant positive association between total nomophobia scores and total social media addiction scores, $r(433) = 0.443$, $p < 0.001$, indicating that higher levels of social media addiction were related to higher levels of nomophobia. Positive correlations were also observed between social media addiction and all nomophobia factors. Specifically, for Factor 1, "not being able to communicate" $r(433) = 0.324$, for Factor 2, "losing connectedness", $r(433) = 0.378$, for Factor 3, "not being able to access information, $r(433) = 0.367$, and Factor 4, "giving up convenience", $r(433) = 0.452$. Worth noting is that the p values for total nomophobia score for all four factors of nomophobia were less than 0.001.

A one-way ANOVA was conducted to examine differences in total nomophobia score, across the three levels of social media addiction (normal, low, medium). The category of high social media addiction was excluded from the statistical analyses since only 12 participants (2.8%) fell into this group. The size of this group was deemed insufficient for meaningful statistical interpretation. The Levene's test indicated homogeneity of variances, $F(2, 404) = 2.12$, $p = 0.121$, thus satisfying the assumption. The one-way ANOVA analysis showed statistically significant

differences between nomophobia and the type of social media addiction [F (2, 404) = 30.933, p <0.001, with a medium effect size (η^2 =0 .133, ω^2 = 0.128).

Additionally, post hoc Tukey HSD tests revealed that adolescents with low social media addiction reported significantly higher nomophobia scores than those with normal levels (MD = 13.864, p < 0.001). Adolescents with medium social media addiction scored significantly higher than both those with normal (MD = 25.107, p < 0.001) and low levels (MD = 11.243, p = 0.012).

Further investigation among the types of nomophobia (excluding absence) and the types of addiction in social media (excluding high) was conducted using the Chi-square test, which confirmed that the association between the two variables was statistically significant, χ^2 (4, N = 407) = 46.333, p < 0.001. The cross-tabulation between nomophobia type and social media addiction level showed distinct distribution patterns. Among participants with mild nomophobia, 81.3% reported normal social media addiction, 15.6% low addiction, and 3.1% medium addiction. In the moderate nomophobia group, 60.4% revealed normal social media addiction, 32.1% low addiction, and 7.5% medium addiction. For those with severe nomophobia, 35.9% exhibited normal social media addiction, 42% low social media addiction, and 22.1% medium addiction.

Across social media addiction types, for the normal group, the percentages for each type of nomophobia were 22.9% for mild, 56.4% for moderate, and 20.7% for severe. For the low level of social media addiction group, mild nomophobia was found in 7.5% of participants, moderate nomophobia in 51.1% of the participants and severe nomophobia in 41.4% of the participants. For the medium level of social media addiction group 4.3% of the participants had a mild level of nomophobia, 34% had a moderate level and 61.7% had a severe level.

All the above findings provide support for the second part of Hypothesis 5, showing that adolescents with higher social media addiction tend to exhibit significantly greater levels of nomophobia across all statistical analyses.

To examine the third part of Hypothesis 5 and the possible associations between nomophobia and fear of missing out (FoMO), Pearson correlation analysis was conducted. Total nomophobia was found to be positively related to FoMO, $r(433) = 0.358$, $p < 0.001$. All four nomophobia factors also showed a statistically positive significant relation with FoMO. Specifically, for Factor 1, "not being able to communicate", $r(433) = 0.281$, $p < 0.001$, for Factor 2, "losing connectedness", $r = 0.313$, $p < 0.001$, for Factor 3, "not being able to access information", $r = 0.266$, $p < 0.001$, and for Factor 4, "giving up convenience", $r(433) = 0.356$, $p < 0.001$. Thus, the third part of Hypothesis 5 is also supported.

To examine the fourth part of Hypothesis 5 and the possible associations between nomophobia and anxiety, Pearson correlation analysis was also conducted. Total nomophobia was found to be positively related with anxiety, $r(433) = 0.237$, $p < 0.001$. When investigating the four nomophobia factors separately, positive significant positive correlations were revealed between all nomophobia factors and anxiety as follows: Factor 1 "not being able to communicate", $r(433) = 0.232$, $p < 0.001$, Factor 2 "losing connectedness", $r(433) = 0.168$, $p < 0.001$, Factor 3 "not being able to access information", $r(433) = 0.145$, $p = 0.003$, and Factor 4 "giving up convenience", $r(433) = 0.243$, $p < 0.001$. These findings also support the fourth part of Hypothesis 5.

Lastly, for the fifth par of Hypothesis 5 and the investigation of possible relations between nomophobia and phobic anxiety, Pearson correlation analysis revealed a statistically significant

positive relationship between total nomophobia and phobic anxiety, $r(433) = 0.241$, $p < 0.001$. This relation was consistent across all four nomophobia factors as follows: Factor 1 "not being able to communicate", $r(433) = 0.219$, $p < 0.001$, Factor 2, "losing connectedness" $r(433)= 0.204$, $p < 0.001$), Factor 3, "not being able to access information" $r(433)= 0.134$, $p = 0.005$, and Factor 4, "giving up convenience" $r(433)= 0.241$, $p < 0.001$. These findings indicate that higher phobic anxiety levels are associated with greater nomophobia and its dimensions, thus supporting the last part of Hypothesis 5.

4.4.6 Hierarchical Linear Regression

Further to the above analyses, a hierarchical linear regression was conducted to examine the predictors of total nomophobia. A hierarchical multiple regression was conducted to examine the extent to which demographic, psychological, and behavioural factors predicted total nomophobia scores. First, the predictive value of age and age at which the participant acquired their first mobile phone, (Model 1) was examined. In the second step, psychological variables (total loneliness, general anxiety, and phobic anxiety) were added (Model 2). In the final step, behavioural variables [hours spent on social media, hours of phone usage, fear of missing out (FoMO), and social media addiction scores (BSMAS)] were included (Model 3). Gender was not entered in the regression models because it is a categorical variable that had already been examined in earlier independent-samples t-test analyses. Additionally, its inclusion here was deemed unnecessary for the current theoretical model, which focused on the relative contributions of psychological and behavioural factors after controlling for demographic characteristics.

Model 1 included only demographic factors and was statistically significant, $F(2,404) = 7.378$, $p < 0.001$ with R^2 of 0.035, indicating that 3.5% of the variance in total nomophobia could

be explained by the model. Both predictors of the model emerged as significant. Specifically, age was a positive predictor (B = 0.176, p = 0.001) and age of first acquiring a phone was a negative predictor (B = -0.181, p = 0.001).

In Model 2, the inclusion of psychological variables, namely loneliness, anxiety and phobic anxiety, significantly improved the model, $\Delta R^2 = 0.068$. The overall model remained statistically significant, F (5,401) = 9.216, p<.001, with R^2 increasing to 0.103, explaining 10.3% of the variance of nomophobia. In this extended model, age (B = 0.206, $p < 0.001$), age of first acquiring a phone (B = −0.165, p = 0.002), and phobic anxiety (B = 0.172, p = 0.033) were significant predictors, whereas loneliness (B = 0.006, p = 0.913) and anxiety (B = 0.101, p = 0.210) were not significant predictors.

In the third model, the inclusion of behavioural variables (hours of phone usage, hours in social media, FoMO, and social media addiction) significantly improved the model, $\Delta R^2 = 0.188$. The overall model remained statistically significant F (9,397) = 18.075, $p < 0.001$, with R^2 increasing to 0.291, thus explaining 29.1% of the variance in nomophobia. In this final extended model, age (B = 0.174, $p < 0.001$), social media addiction (B = 0.195, $p < 0.001$), FoMO (B = 0.183, p <0.001), hours spent on phone usage (B = 0.112, p = 0.040), and hours spent in social media (B = 0.185, p = 0.001) were significant positive predictors of nomophobia, On the contrary age of acquiring a phone, (B = -0.093, p = 0.055), loneliness, (B = -0.014, p = 0.769), anxiety (B = 0.046, p = 0.523), and phobic anxiety (B = 0.052, p = 0.481) variables were non-significant.

These results suggest that, after controlling for demographic and psychological factors, behavioural engagement with mobile phones and social media—alongside age—emerge as the

strongest predictors of nomophobia. Actually, the behavioural engagement with technology related activities predicts more severe nomophobia levels and plays a more substantial role in predicting nomophobia than demographic factors or certain psychological traits alone.

5. Discussion

The current study adds to the growing body of research examining the psychological and behavioural consequences of smartphone use with a particular focus on the emerging phenomenon of nomophobia. Smartphones, often described as one of the defining "addictions" of the twenty-first century (N. K. Singh & Rathore, 2023; Y.-Y. Wu & Chou, 2023), have become multifunctional devices that facilitate communication, social connection, access to information, professional productivity, medical assistance and everyday convenience (N. Bragazzi & Del Puente, 2014; Demircioğlu, 2024; Gnardellis, Vagka, et al., 2023; Jeong et al., 2016). Their integration into daily routines is particularly evident among younger generations, who increasingly rely on mobile technology for both personal and academic purposes (Jahrami et al., 2022; Zwilling, 2022). While these functions offer undeniable benefits, the adverse outcomes of excessive smartphone use, especially in younger generations, cannot be overlooked, as they are closely linked to addictive behaviours and mental health concerns (Notara et al., 2021).

Therefore, the present study aims to contribute to the growing body of research of nomophobia and, more specifically, its prevalence and associated factors among adolescents in Cyprus, a population that has not been yet systematically studied. Previous studies conducted not only internationally or within neighbouring regions such as Italy and Greece, but also in Cyprus, have consistently highlighted the widespread nature of nomophobia, with prevalence rates

reaching extremely high levels across young populations (N. Bragazzi & Del Puente, 2014; Kumari et al., 2019; Mousoulidou et al., 2025; Vagka et al., 2023b). Against this backdrop, the findings of the current research suggest that nomophobia is a pervasive phenomenon among adolescents (Rehman & Singh, 2022), echoing evidence from other countries that identify youth as particularly vulnerable due to their developmental stage and reliance on digital technologies (Azadmanesh et al., 2016; Indira et al., 2023). Beyond investigating its prevalence, this study explores the multifaceted nature of nomophobia by examining its association with demographic, behavioural and psychological variables.

In line with earlier findings, the results indicate that the phenomenon is not only related to patterns of technology use, namely age of first mobile acquisition (Bulut & Sengul, 2024), hours spent on mobile phones in general (Samsudin et al., 2021) or on social media in particular (Ayar et al., 2018). Additionally, nomophobia is associated with deeper emotional and psychological factors including loneliness, social media addiction FoMO, and anxiety (Ghoghre, 2025; Gnardellis, Vagka, et al., 2023; Wibowo & Triantoro, 2025; Yıldız Durak, 2018). Although limited, the emerging evidence linking nomophobia to phobic anxiety (Bekaroğlu & Yilmaz, 2020) further highlights its complexity and its potential overlap with other mental health difficulties.

Overall, the results contribute to a deeper understanding of nomophobia during adolescence, a developmental stage already characterised by heightened emotional sensitivity. Collectively, these findings emphasise the importance of considering nomophobia as more than a by-product of smartphone overuse. Rather, it appears to represent a broader psychosocial challenge, particularly among adolescents, where it intersects with developmental vulnerabilities

and shapes both online and offline experiences. Within this framework the following sections discuss the study's hypotheses in detail, situating the results in the context of the existing literature.

Initially, our results indicate an exceptionally high prevalence of nomophobia among adolescents in Cyprus. The vast majority of our sample (99.1%) exhibits some level of nomophobia with only four participants showing no signs of nomophobia. Significantly, 75.8% of the participants exhibited at least moderate fear of anxiety when being without their smartphones and among those, 33.3% fell in the category of the severe level. These results suggest that nomophobia is of a great concern and affects a large proportion among Cypriot adolescents, supporting the assumption that prevalence rates would be comparable to those reported among adults. The observed findings are in line with recent evidence from Cyprus showing that 99.3% of adults reported some level of nomophobia, with 76% experiencing moderate to severe levels (Mousoulidou et al., 2025). Importantly however, although the total prevalence of nomophobia among adults is slightly higher compared to the adolescent population, the number of adolescent participants with severe nomophobia was higher compared to adult participants (33.3% in adolescents vs. 24.67% in adults) These results are also consistent to findings from Greece, where 99.9% of respondents reported nomophobia and 75.9% fell within the moderate to severe level, with those individuals exhibiting severe level of nomophobia reaching an 18.9% of the sample, a percentage much lower than the percentage of Cypriot adolescents with severe nomophobia. Similarly, although the overall prevalence of nomophobia among adolescents in Turkey was also extremely high (99%) and comparable to the rates observed in Cyprus, the proportion of severe nomophobia was considerably lower, with 14% of females and 10% of males reporting this level

of severity (Yavuz et al., 2019).

International research further supports this pattern, with prevalence rates reaching 99% in Australia (Kaviani et al., 2020), while comparable elevated levels have been reported in Italy (N. Bragazzi & Del Puente, 2014), Croatia (Santl et al., 2022), India, the Philippines, Tunisia, and Malaysia (Al-Mamun et al., 2025; Anjana et al., 2021; Ferchichi et al., 2023; D. Gupta et al., 2024; Oraison & Wilson, 2024; Saleh et al., 2019). Systematic reviews echo these findings, with Jahrami et al. (2022) reporting that, globally, approximately 70.8% of individuals experience moderate to severe nomophobia, while, similarly, Al-Mamun et al. (2025) estimated the prevalence at 72%.

Importantly, although research focusing specifically on adolescents is still relatively limited, existing studies consistently indicate that younger populations experience particularly high levels of nomophobia. For example, individuals aged 18-22 have shown to display marked dependence on smartphones and online digital information (Indira et al., 2023), while further studies highlight that younger generations in general are more prone to nomophobia compared to older age groups (Anshari et al., 2019; León-Mejía et al., 2021b). The present findings therefore extend international evidence by demonstrating that adolescents in Cyprus are equally, or even more, vulnerable to nomophobia.

Overall, these findings provide evidence that nomophobia has become a near-universal experience among adolescents in Cyprus, consistent with global and regional trends. The findings of the current study highlight adolescence as a developmental period of particular vulnerability to problematic smartphone dependence and underline the need for further research and preventive

strategies tailored to this age group.

Secondly, the current study aimed to show how demographics affect the development of nomophobia. The second hypothesis proposed that a statistically significant association would be observed between demographic variables, namely age and gender, and levels of nomophobia. The findings of the present study only partially supported this hypothesis. Regarding age, the analyses showed no statistically significant difference between middle adolescents and late adolescents/emerging adults in terms of nomophobia levels. The Pearson correlation revealed only a small, non-significant association, with the exception of the "not being able to access information" factor, which showed a weak but statistically significant positive correlation with age. Similarly, comparisons through t-tests and chi-square analyses confirmed the absence of substantial differences. These findings suggest that, within the Cypriot adolescent population, nomophobia is widespread across both younger and older adolescents and its intensity does not vary significantly with age. These results are in contrast with several studies reporting that younger individuals tend to experience higher nomophobia (Daei et al., 2019; Guimarães et al., 2022; Guzel & Alan, 2020; Kaviani et al., 2020; Vagka et al., 2023b), though it aligns with more nuanced findings suggesting mixed or inconclusive evidence regarding age differences (Kanmani S et al., 2017; Rehman & Singh, 2022). One possible interpretation is that the pervasive role of smartphones in Cypriot adolescents' daily lives level out differences between younger and older participants, producing equally high levels of dependency across groups.

In contrast, gender differences were clearly supported by the data. Females reported significantly higher levels of nomophobia compared to males, with more than 40% of the female participants falling into the severe category, compared to about one fifth of males. This finding is

consistent with a large body of research indicating higher nomophobia scores among females, both in adolescent and adult populations (Aldalalah, 2020; Gohar & Munir, 2023; Kanmani S et al., 2017; Kaviani et al., 2020; Louragli, et al., 2018; Ramos-Soler et al., 2021; Sethia et al., 2018; Suresh et al., 2019). Furthermore, as nomophobia has been conceptualized as a situational phobia, the observed gender differences align with broader evidence that women are more likely to report fears and phobias than men (Bourdon et al., 1988; Fredrikson et al., 1996; Wardenaar et al., 2017). Similar findings have also been documented among female adolescents, who appear to exhibit stronger fear-related responses compared to males (Settineri et al., 2019). Nonetheless, it is important to acknowledge that the literature on gender remains inconclusive, as some studies have suggested higher nomophobia levels among males (Daei et al., 2019; Dongre et al., 2017; Myakal & Vedpathak, 2019), while others found no significant associations at all (Dixit et al., 2010).

The present findings reinforce the view that gender plays a more decisive role than age in shaping nomophobia levels among adolescents in Cyprus, with females being significantly more vulnerable to developing high levels of dependency and anxiety related to mobile phone use. The lack of age-related differences, however, suggest that nomophobia has become a pervasive issue across adolescence, transcending developmental stages and reinforcing its classification as a widespread phenomenon rather than one confined to younger cohorts.

Thirdly, current results showed that the predicted negative relation between age at which adolescents first acquired a mobile phone and their subsequent levels of nomophobia was supported. Pearson's correlation revealed a statistically significant negative association between the age of first phone acquisition and overall nomophobia scores. Further analyses of the four nomophobia factors showed that this effect was particularly evident in Factor 3, "not being able to

access information" and Factor 4, "giving up convenience", where earlier acquisition of a phone was linked to higher dependence and anxiety related to mobile phone. ANOVA results reinforced this finding, showing that participants who acquired their phone during early school age or school age, reported significantly higher nomophobia levels compared to those who acquired it later and particularly during early adolescence. Post-hoc comparisons highlighted that early phone acquirers were more vulnerable to severe levels of nomophobia. Crosstab analyses further indicated a trend where earlier acquisition corresponded with higher prevalence of severe nomophobia, even though the chi-square association between categories did not reach statistical significance.

These findings are consistent with prior research suggesting that first phone ownership at a younger age at is a critical risk factor for developing problematic mobile phone dependency and exhibiting nomophobia (Bulut & Sengul, 2024; Kadan, 2023). From a developmental psychology perspective, acquiring a phone at an earlier age may interfere with children's natural socialization processes and coping mechanisms, increasing their reliance on digital devices for communication, information and social connection. In turn, this dependence can evolve into nomophobia during adolescence, when peer relationships and social identity are particularly salient. Moreover, evidence from the broader literature supports this interpretation. For instance, qualitative research by Pratiwi et al., (2019) showed that children who became dependent on their phones demonstrated maladaptive behaviours, such as neglecting face-to-face interactions, resisting parental authority and preferring mobile use over outdoor activities with peers. Similarly it has been highlighted by current research activity that early and excessive reliance on smartphones among adolescents is positively linked to social media addiction, anxiety and low self-control, factors that are closely tied to nomophobia (Kuscu et al., 2021; Yıldız Durak, 2018).

In sum, the findings provide a support for Hypothesis 3, confirming that early phone acquisition is significantly related to higher nomophobia levels among adolescents in Cyprus. This finding has important implications, suggesting that delaying the age at which young people acquire their first smartphone could act as a protective factor against the development of problematic dependency patterns on mobile phones, thus leading to nomophobia.

Fourthly, the findings of the present study provided clear support for Hypothesis 4. Pearson correlations and ANOVA's showed that adolescents who reported longer daily use of mobile phones and social media also exhibited significantly higher nomophobia scores. In fact, those who spent more than three hours per day on their phones or on social media were much more likely to fall into the severe nomophobia category compared to lighter users. These results are consistent with prior research, which has repeatedly demonstrated that increased smartphone use contributes to problematic dependence and higher levels of nomophobia (Constantinidou et al., 2025; Daei et al., 2019; Kaviani et al., 2020; Kumari et al., 2019; Samsudin et al., 2021; M. Sharma et al., 2019). Similarly, the literature emphasizes that social media engagement, in particular, is positively associated with nomophobia, given that social networking platforms amplify the need for constant connectedness and fear of disconnection (Ayar et al., 2018; Ramos-Soler et al., 2021; Samsudin et al., 2021; Yıldız Durak, 2018). These results echo patterns observed in Cyprus, where social media emerged as the second common reason for mobile usage and was positively associated with nomophobia (Mousoulidou et al., 2025).

Overall, these results highlight that it is not only the overall duration of mobile phone use but also the specific use of social media that intensifies nomophobic symptoms. This aligns with evidence from Cyprus, where social media was identified as one of the most frequent reasons for

mobile use and was positively linked to nomophobia among adults (Mousoulidou et al., 2025). The present findings extend this evidence to adolescents, underscoring the role of digital engagement patterns in the development of nomophobia.

The fifth hypothesis predicted positive associations between nomophobia and the other psychological and behavioural variables included in the study, namely loneliness, social media addiction, FoMO, anxiety and phobic anxiety. The findings supported this expectation, aligning with and extending findings from earlier studies.

Beginning with loneliness, the analyses indicated a significant positive correlation with nomophobia. Adolescents reporting higher levels of loneliness also tended to experience higher levels of nomophobia, particularly regarding losing connectedness and giving up convenience. The ANOVA further confirmed differences across loneliness groups, with adolescents in the moderately high loneliness category scoring significantly higher in nomophobia compared to those with low levels. Although the chi-square test did not yield significant results for categorical associations, the linear-by-linear association was significant, indicating a trend toward higher nomophobia among adolescents with higher levels of loneliness. Crosstab analysis also revealed that severe nomophobia was most prevalent among participants with moderate and moderately high loneliness. These findings are consistent with earlier studies that reported similar associations between loneliness and nomophobia (Agrawal, 2023; Aldalalah, 2020; Constantinidou et al., 2025; GezgiN & Ümmet, 2021; Ghoghre, 2025; Heng et al., 2023; Hussien, 2022; Sun et al., 2024; T C & Prabhjyoth, 2024), and they echo broader evidence relating loneliness to problematic smartphone and internet use (Ayuningtyas, 2022; Cao et al., 2022; Hebebci & Shelley, 2018; Murkey et al., 2020; Orsolini et al., 2023; Parashkouh et al., 2018; SeviMoğlu & Adana, 2022; R.

Singh & Kumari, 2021; Y. Zhang et al., 2023), factors that are positively related to nomophobia. Several studies carried out among adolescents, examining the relationship between nomophobia and loneliness, also revealed similar findings (Dehghaniana & Bordbar, 2023; D. M. Gezgin, Hamutoglu, et al., 2018; Juwita et al., 2024; Yıldız Durak, 2018). Importantly, this suggests that nomophobia may serve as both a symptom and a potential amplifier of social isolation not only during adulthood, but during adolescence as well.

The relation between social media addiction and nomophobia was also found to be statistically significant. Correlations were significant across total nomophobia and all nomophobia factors, and ANOVA results showed that adolescents with higher levels of social media addiction reported significantly higher level of nomophobia compared to those with lower levels. Additionally, the Chi-square test provided further support for the significantly positive association between the two variables. Crosstab analyses revealed that severe nomophobia was disproportionately present among adolescents with medium levels of social media addiction. These findings are in line with previous research that identified the dependence of social media as a central driver of nomophobia (King et al., 2010, 2013; Lin et al., 2021; Yıldız Durak, 2018). Current studies carried out among adolescents also revealed significant positive correlation between nomophobia and social media addiction as well as social media usage (Bilici, 2025; Thangavel, 2024). These results alongside the positive relation revealed between nomophobia and social media usage, further underscore the behavioural roots of nomophobia, particularly the dependence of social media for connection and validation.

FoMO also emerged as a significant correlate of nomophobia. The current study revealed significant positive associations not only with nomophobia in general, but also across all four

factors of nomophobia, indicating that adolescents with elevated FoMO are more vulnerable to experiencing distress when disconnected from their mobile phones. These results are consistent with international research (Maghaireh et al., 2025; Ceobanu et al., 2023; Elhai et al., 2021; Ghoghre, 2025; Hamutoglu et al., 2018; Sapmaz, 2023; Wen et al., 2023; Wibowo & Triantoro, 2025), which has repeatedly demonstrated that FoMO exacerbates compulsive phone use and increases nomophobic tendencies, not only among adults, but also among adolescents (Ergin & Ozer, 2023). Within the adolescent context, where peer belonging and constant connectivity are especially valued, FoMO appears to represent a key psychological mechanism underlying the persistence of nomophobia.

The association between nomophobia and anxiety was also supported. Correlation analyses revealed positive relationships between total nomophobia and anxiety, as well as across all nomophobia factors. These findings resonate with a number of earlier studies associating anxiety to nomophobia (Bekaroğlu & Yilmaz, 2020; Çakmak Tolan & Karahan, 2022; Daraj et al., 2023; Dehghaniana & Bordbar, 2023; Demircioğlu, 2024; Ferchichi et al., 2023; Ghoghre, 2025; Gnardellis, Vagka, et al., 2023; Kazğan Kılıçaslan et al., 2024; Rosales-Huamani et al., 2019; Taş & Eker, 2021; Wahyuni, 2022) and they are consistent with the evidence that adolescents with higher levels of anxiety report higher levels of nomophobia (Kuscu et al., 2021). The results of the current study reinforce the conceptualization of nomophobia as an anxiety-related condition, reflecting both behavioural dependence and emotional vulnerability.

Finally, phobic anxiety showed a significant positive association with nomophobia, across both total scores and all subscales. This aligns with the limited but emerging evidence that directly examined this relationship (Yılmaz & Bekaroğlu, 2022) with studies demonstrating that phobic

anxiety is closely related to internet addiction (Adalıer & Balkan, 2012; Rao et al., 2023), a factor that is also associated with nomophobia.

Additionally, the hierarchical regression further clarified these associations. Demographic variables alone explained only a small proportion of variance, but the inclusion of psychological variables, especially phobic anxiety, increased explanatory power. In the final model, behavioural variables such as social media addiction, FoMO and hours spent on phone and social media, emerged as the most important predictors of nomophobia, explaining nearly 30% of the variance. Although, the present findings diverge from studies identifying anxiety as a significant predictor of nomophobia (Abdoli et al., 2023; Kuscu et al., 2021; Rodríguez-García et al., 2020; Santl et al., 2022), they align with research highlighting excessive smartphone usage, social media usage, and FoMO as central factors in its development (Al-Mamun et al., 2025; Hoşgör & Hoşgör, 2020; Samsudin et al., 2021). They also underscore that, while psychological vulnerabilities such as loneliness and anxiety are important, behavioural engagement with technology is the most powerful driver of nomophobia among adolescents.

From a counselling psychology perspective, these findings are especially significant. They suggest that preventive interventions should focus not only on supporting adolescents' well-being, but also on promoting balanced and mindful technology use, addressing FoMO, and raising awareness about the risks of excessive social media engagement. Given the high prevalence of nomophobia identified in this study, such strategies are crucial for reducing the potential long-term impact on mental health and social development.

5.1. Practical Implications of the Study

The present study offers valuable insights into the prevalence and predictors of nomophobia among adolescents in Cyprus, revealing the high degree to which young people rely on their mobile devices for communication, socialization, and emotional regulation. With 99.1% of participants reporting at least some level of nomophobia and over a third falling into the severe category, the findings highlight the urgent need for targeted interventions. The findings highlight that nomophobia is not only widespread, but also strongly linked to behavioural and psychological factors such as excessive time spent on mobile phones and social media, early age of acquiring a mobile phone, loneliness, social media addiction, FoMO, anxiety and phobic anxiety. Building on international literature, which identifies both psychological and behavioural strategies as promising avenues for intervention (Jebanesy & Vasantha, 2024; J. Li & Yang, 2024), the implications of this study extend beyond academic insight and call for practical, evidence-based applications situating nomophobia within the framework of problematic technology use, while emphasizing its growing significance as a public health and educational concern (M. Sharma et al., 2019; Yıldız Durak, 2018).

Against this background, it becomes imperative to reflect on the practical implications of these findings. Understanding nomophobia not merely as an individual problem but as a psychological and developmental challenge, allows for interventions at multiple levels, including psychological, educational, familial and societal. Below, the potential applications of the present research are outlined, with emphasis on the role of counselling psychology, school-based prevention, family engagement, and therapeutic approaches supported by the growing literature on interventions for nomophobia and problematic smartphone use.

5.1.1 Contributions to Counselling Psychology

From a counselling psychology perspective, the results of this study underscore the importance of early identification and intervention in adolescents at risk of nomophobia. Since the phenomenon is closely related to emotional vulnerabilities such as anxiety, phobic anxiety and loneliness, therapeutic work may prioritize the development of emotional regulation skills, coping mechanisms for stress, and the cultivation of healthy interpersonal relationships. Cognitive Behavioural Therapy (CBT) has consistently emerged as one of the most effective tools for reducing mobile phone dependence and nomophobia symptoms (Amalia, 2025; Bekaroğlu & Yilmaz, 2020; Davoudi et al., 2019). Additionally, Li et al. (2018) demonstrated that an eight-week CBT group intervention among university students significantly reduced mobile phone dependence and related psychological distress. Similarly, Davoudi et al. (2019) compared CBT, emotion-focused therapy, and mindfulness-based interventions, showing that all three were beneficial in alleviating nomophobia symptoms and improving sleep quality, with CBT yielding particularly robust results. These findings suggest that structured CBT-based modules could be integrated into school counselling and adolescent mental health programs in Cyprus, targeting maladaptive thought patterns, anxiety and reliance on digital devices.

Beyond cognitive restructuring, mindfulness-based approaches appear especially promising in mitigating nomophobia by fostering emotional regulation and reducing stress (Davoudi et al., 2019; Fernandez-Crespo et al., 2024; Kent et al., 2021). Research studies have demonstrated that mindfulness interventions reduced nomophobia symptoms while enhancing locus of control, emotional stability and overall well-being (Safaria et al., 2023; Zadehasan et al., 2024). Likewise, mindfulness has been highlighted as one of the most consistently effective

approaches in reducing anxiety associated with excessive mobile phone dependence (Amalia, 2025). From a practical standpoint, integrating mindfulness sessions into school curricula or extracurricular youth programs could serve as a preventive strategy, equipping adolescents with coping tools that would allow them to detach from their phones without experiencing acute distress.

Further, current research has shown that existential psychotherapy (Bekaroğlu & Yilmaz, 2020), occupational therapy interventions on time management (Torpil & Pekçetin, 2022) and education on anxiety control strategies (Mohammadi Nasab et al., 2021) can reduce problematic phone dependence and nomophobia and strengthen psychological resilience.

Counselling psychologists can also make use of these findings to tailor their psychoeducational programs within schools and communities. By raising awareness about the risks of excessive mobile phone use and providing tools for balanced technology engagement, professionals may help adolescents build healthier relationships with their devices.

5.1.2 Psychological Resilience as a Protective Factor

Evidence from recent studies suggests that interventions aimed at strengthening psychological resilience in adolescents experiencing high levels of loneliness could mitigate social media addiction and have a beneficial impact on their mental health (Yam et al., 2024). Additionally, current literature highlights several practical implications for both educational and psychological practice. Strengthening emotional intelligence and problem-solving skills among adolescents could reduce their levels of perceived stress but also lower the risk of nomophobia (Karaoglan Yilmaz et al., 2022). These results suggest that integrating resilience-building interventions such

as workshops, counselling sessions, or structured skill-development programs could help students manage everyday challenges more effectively. In addition, the negative relationship between self-esteem and either nomophobia or smartphone addiction (Apaolaza et al., 2019; Karaoglan Yilmaz et al., 2022; Vagka et al., 2023a, 2024), raises the need for addressing interpersonal competencies and self-esteem, initiatives that may foster healthier patterns of mobile phone use.

Since prevention is often more effective than cure, it is crucial to recognize that the majority of individuals exhibiting higher levels of nomophobia are younger people, hence health education initiatives should specifically target youth. Accordingly, early intervention through tailored educational strategies may be essential in reducing the potential adverse consequences of excessive reliance on this pervasive technology. Such interventions should include education of adolescents with regards to proper use of technology, with the intention to overcome the risk of smartphone addiction and nomophobia developing (K. Sharma et al., 2022).

5.1.3 School-Based and Educational Interventions

Schools represent a critical setting for implementing preventive and educational strategies. Given that adolescence is a formative developmental stage, interventions at the educational level can have long-lasting protective effects. Evidence suggests that resilience-building-programmes focused on emotional intelligence, problem solving and stress management can mitigate the risk of nomophobia while enhancing overall mental health (Karaoglan Yilmaz et al., 2022; Yam et al., 2024). Workshops, structured skill development program, and counselling services integrated into the school context could therefore be instrumental in addressing both academic and psychological challenges associated with excessive mobile phone use.

Additionally, prevention is often more effective than treatment. Since the majority of individuals exhibiting higher levels of nomophobia are younger people, educational initiatives targeting youth specifically, are critical (K. Sharma et al., 2022). Early interventions could include curricula on digital literacy, safe online practices and reflective awareness about smartphone use, aiming to empower students to recognize and regulate problematic behaviours before they escalate (Kent et al., 2021; Ramos-Soler et al., 2021) .

These findings highlight the potential of schools to incorporate structured digital literacy programs that go beyond technical skills, emphasizing responsible, mindful and balanced phone use. Such initiatives can normalize discussions around nomophobia and equip young people with evidence-based tools for managing digital stress.

5.1.4 Family Involvement

The study's findings also highlight the important role of family dynamics and broader community in shaping adolescents' mobile phone use. Early acquisition of smartphones was found to be a predictor of higher nomophobia (Bulut & Sengul, 2024), suggesting that parental decisions around when and how children gain access to mobile devices carry significant implications. The finding that rejection and overprotective parenting styles are linked to higher levels of nomophobia, whereas emotional warmth serves as a protective factor, underscores the importance of involving parents in intervention programs (Zheng et al., 2025). Current research findings suggest that effective prevention programs must extend beyond adolescents themselves to involve parents monitoring smartphone usage (Kamil et al., 2024; Y. Zhang et al., 2023). Parent-focused psychoeducation could help caregivers adopt balanced practices that encourage independence while maintaining supportive emotional bonds.

Moreover, awareness campaigns can inform parents about the risks of introducing smartphones at a very young age, highlighting the protective role of delayed exposure. By equipping parents with tools to set appropriate boundaries, encourage supportive communication and model healthy digital habits, intervention programs can address nomophobia within their family context. For instance, behavioural science provides practical, low-cost interventions to address problematic smartphone use. Olson et al. (2022) tested a ten-step nudge-based intervention, including strategies such as disabling non-essential notifications and setting grayscale displays, that significantly reduced screen time and improved sleep quality. Such approaches are scalable and feasible within family context, as they rely on subtle environmental changes rather than intensive therapy. Parents in Cyprus could adopt similar strategies by encouraging adolescents to implement phone-free periods during study hours, shared meals, or bedtime, promoting healthier habits without requiring constant external reinforcement.

Equally important is fostering open communication within the family. Encouraging adolescents to share their concerns, feelings and daily experiences can reduce the reliance on smartphones as a primary source of support. Families should also be encouraged to participate in offline activities together, such as shared meals, sports, cultural events, or outdoor experiences that promote quality time and reinforce real-life connections. Such practices not only reduce the need for constant digital engagement but also strengthen family relationships, offering adolescents a sense of security and belonging that diminishes the risk of nomophobic tendencies.

Further, the family environment's cohesion and adaptability also play a protective role. A study carried out among Chinese university students found that higher family cohesion and adaptability negatively predicted mobile phone addiction (Lian et al., 2023). This suggests that

cultivating emotional closeness, flexibility and mutual support in the family unit can buffer against risky digital behaviours.

5.1.5 Community and Public Health Initiatives

The associations between nomophobia and factors such as social media addiction, FoMO, prolonged daily smartphone usage, loneliness and anxiety pointing to broader community and public level responsibilities. The systematic review by Jebanesy and Vasantha, (2024) highlighted that interventions are most effective when they combine psychological therapies with family and social support mechanism. Encouraging adolescents to participate in community activities such as sports, arts, or volunteering, can provide alternative sources of connection and self-esteem that reduce reliance on smartphones. Additionally, promoting the balanced use of technology among youth is essential. Awareness campaigns could highlight the risks of excessive smartphone dependence, while also normalizing practices such as digital detoxes, screen-free family activities and mindful technology use. Interventions should also leverage technology itself, with mobile applications designed to monitor screen time, encourage breaks, and provide feedback on usage patterns.

5.2 Limitations

While this study provides valuable insights into the phenomenon of nomophobia among adolescents in Cyprus, certain limitations should be acknowledged when interpreting the findings. To begin with, the cross-sectional nature of the design restricts the ability to draw conclusions about cause and effect. Although the study identified significant associations between nomophobia and several psychological and behavioural variables, we cannot determine whether these factors

contribute to the development of nomophobia or emerge as consequences of it. Understanding this distinction is important, as adolescence is a period of rapid developmental change during which vulnerabilities can emerge over time.

A second limitation relates to the sample size and the method of recruitment. Participants were recruited through convenience and snowball sampling, which although practical, does not ensure representativeness of the wider adolescent population in Cyprus. Furthermore, the sample was predominantly female, which may have introduced bias and restricted the ability to fully examine potential gender related differences. Since existing literature suggests that experiences of nomophobia may vary between boys and girls, this imbalance should be considered when interpreting the result.

Another challenge lies in the categorization of phone use. While the study successfully captured distinct levels of daily usage, the overwhelming concentration of participants in the highest category with 67.9% of them using the mobile phone for more than three hours daily limited the variability of responses. In contrast, only 7.4% of the sample reported using their phones for less than two hours per day. This uneven distribution may have reduced the ability to detect more nuanced patterns between moderate and heavy use.

Although the findings clearly highlight the high prevalence of prolonged daily engagement with mobile phones, future research would benefit from employing more fine-gained time categories such as 3-5 hours, 5-7 hours, and 7+ hours. Such distinctions could provide a more accurate understanding of how different levels of excessive use relate to nomophobia and associated psychological outcomes.

Finally, like many studies of this kind, the research relied on self-report questionnaires. While these tools are valuable for capturing subjective experiences, they are vulnerable to biases such as underreporting or over-reporting. Adolescents, in particular, may struggle to accurately estimate their usage or emotional states. Including objective indicators, such as digital screen-time data or even psychological makers of stress, it would help to complement self-reported data and strengthen the overall validity of the findings.

5.3 Conclusions and Future Research Directions

In counselling psychology practice, the findings of this study highlight the necessity of viewing nomophobia not as an isolated problem but as a multifaceted phenomenon connected to broader psychological and social dynamics. Counsellors working with adolescents should therefore integrate assessments of smartphone use and nomophobia into their clinical evaluations, particularly when clients present with symptoms of anxiety, loneliness or interpersonal difficulties. Tailored interventions can be designed to address both the behavioural aspects of overuse and psychological factors that sustain it.

In conclusion, the practical implications of this study suggest a comprehensive, multi-level approach to the management of nomophobia. While individual counselling approaches such as CBT and mindfulness remain central, interventions must also extend to families, schools, and broader policy frameworks. The compensation of psychological, behavioural and systemic strategies is most likely to yield sustainable outcomes and can help adolescents develop healthier relationships with their mobile devices. Such an approach not only supports individual well-being but also contributes to the broader goal of promoting mental health and adaptive functioning in a

digital age. In particular, focusing on early prevention during adolescence, when nomophobic tendencies are most pronounced, could reduce the burden of this phenomenon on future generations sustainably. In Cyprus, where nearly all adolescents in this study experienced some degree of nomophobia, implementing these evidence-based practices could play a pivotal role in reducing risks, supporting healthier development, and fostering resilience in a generation growing up inseparably linked to digital technologies.

Looking ahead, several opportunities emerge for advancing our understanding of nomophobia among adolescents. Firstly, future studies should aim to include larger and more balanced samples, ensuring greater gender diversity and representation from different regions of Cyprus. This would not only enhance generalizability but also help identify whether cultural or contextual factors play a role in shaping nomophobia.

Future investigations should also aim to refine the categorization of mobile phone usage, as the present study revealed that the majority of adolescents (67.9%) fall into the "3+ hour per day" group. This finding underscores the reality of extensive daily use but leaves limited room to examine the differences between moderate and heavy users. By adopting more detailed usage brackets (for example 3-5 hours, 5-7 hours, and 7+ hours), future studies could capture a clearer picture of how varying intensities of engagement affect nomophobia and related psychological outcomes. Such precision would not only enhance the reliability of findings but also provide a stronger foundation for designing interventions that are tailored to specific usage patterns. Importantly, addressing this issue in adolescent populations who appear most vulnerable to excessive us, could help develop early preventive strategies and promote healthier digital habits.

Additionally, given that the present sample was limited to participants aged 15-22, future research should extend to younger populations, such as children in late primary school or early adolescence. These groups are increasingly exposed to mobile devices at formative stages of development, where patterns of use may crystallize into habits more resistant to change. Exploring nomophobia and smartphone overuse in these earlier stages could provide critical insights into prevention and inform timely interventions aimed at fostering healthier digital habits before problematic behaviours become entrenched.

Expanding the scope of variables is also essential. While the present study focused on loneliness, FoMO, anxiety and phobic anxiety, future work could examine related factors such as depression, self-esteem, emotional regulation and family dynamics. Given that adolescence is a formative period of identity and relationships, including these broader psychological constructs would enrich our understanding of the mechanisms underlying nomophobia.

In addition, integrating objective methods into future studies would be highly valuable. Smartphone tracking applications, combined with non-invasive physiological indicators of stress, such as cortisol levels or heart rate variability, could offer a more comprehensive and reliable assessment of adolescents' relationship with their devices.

Finally, because the current findings reveal high prevalence and significant associations with psychological difficulties, future research should increasingly focus on intervention studies. School-based prevention programs, family education initiatives and resilience building workshops could be evaluated to determine their effectiveness in reducing nomophobia. By prioritizing interventions during adolescence, researchers and practitioners can help young people establish

healthier, more balance relationships with technology, before problematic patterns become ingrained.

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APPENDICES

APPENDIX A: (Έντυπο Πληροφόρησης / Ενημέρωσης)

Σας προσκαλούμε να συμμετέχετε σε μία έρευνα που δημιουργήθηκε για να διερευνήσει τη σχέση μεταξύ της χρήσης του τηλεφώνου και παραγόντων όπως η μοναξιά, ο εθισμός στα Μέσα Κοινωνικής Δικτύωσης, το Σύνδρομο FOMO, το άγχος και το φοβικό άγχος.

Αυτή η έρευνα είναι ανώνυμη και η συμμετοχή σας δεν είναι υποχρεωτική. Τα συγκεντρωτικά αποτελέσματα του ερωτηματολογίου αυτού θα χρησιμοποιηθούν μόνο για ερευνητικούς σκοπούς.

Είστε ελεύθεροι/ες να διακόψετε τη συμμετοχή σας σε οποιοδήποτε σημείο επιθυμείτε και να αποσύρετε τις απαντήσεις σας. Δεν απαιτείται να δώσετε εξηγήσεις γι' αυτό. Εφόσον οι απαντήσεις σας είναι ανώνυμες, δεν θα είναι δυνατό να αποσύρετε απαντήσεις που έχετε ήδη υποβάλει.

Μόλις συμπληρώσετε το ερωτηματολόγιο, οι απαντήσεις σας θα διατηρηθούν σε ανώνυμη μορφή σε μία βάση δεδομένων της ερευνητικής ομάδας του Πανεπιστημίου Νεάπολις Πάφου με στόχο την αξιολόγηση και την επεξεργασία τους. Οι απαντήσεις που παρέχετε ενδέχεται να κοινοποιηθούν σε δημοσιεύσεις, ωστόσο λόγω της ανωνυμίας δεν θα μπορείτε να ταυτοποιηθείτε.

Εάν έχετε οποιεσδήποτε ερωτήσεις ή ανησυχίες σχετικά με τη συμπλήρωση του ερωτηματολογίου ή σχετικά με τη συμμετοχή σας σε αυτήν τη μελέτη, μη διστάσετε να επικοινωνήσετε με τον επιστημονικό υπεύθυνο της έρευνα, Δρ Μαριλένα Μουσουλίδου, Επίκουρη Καθηγήτρια Ψυχολογίας του Πανεπιστημίου Νεάπολις Πάφος στο marilena.mousoulidou@nup.ac.cy ή στο +357 2684 3415, ή με την ερευνήτρια, Εριέττα Κωνσταντινίδου, Εκπαιδευόμενη Συμβουλευτική Ψυχολόγος στο e.constantinidou@nup.ac.cy.

Παρακαλούμε να διαβάσετε με προσοχή την κάθε ερώτηση και να επιλέξετε την απάντηση που σας αντιπροσωπεύει καλύτερα.

Σας ευχαριστούμε εκ των προτέρων για τον χρόνο σας.

APPENDIX B (ΣΥΓΚΑΤΑΘΕΣΗ)

Πριν προχωρήσετε στο ερωτηματολόγιο, παρακαλούμε να σημειώσετε στο πλαίσιο ότι έχετε διαβάσει τις παραπάνω πληροφορίες και συμφωνείτε με τα παρακάτω:

- Κατανοώ και συμφωνώ να συμμετάσχω στην έρευνα που περιγράφεται.
- Κατανοώ ότι η συμμετοχή μου είναι εθελοντική και ότι μπορώ να αποσυρθώ σε οποιοδήποτε στάδιο μέχρι την τελική υποβολή των απαντήσεών μου.
- Κατανοώ ότι τα δεδομένα μου θα διατηρηθούν εντελώς εμπιστευτικά και ανώνυμα. Πρόσβαση στα δεδομένα θα έχει μόνο η ερευνητική ομάδα και τα συγκεντρωτικά ερευνητικά αποτελέσματα θα χρησιμοποιηθούν μόνο για ερευνητικούς σκοπούς.
- Κατανοώ ότι καμία αποκάλυψη πληροφοριών δεν θα οδηγήσει στην ταυτοποίηση μου, ούτε από τους ερευνητές ούτε από οποιονδήποτε άλλο.
- Έχω διαβάσει και κατανοήσει αυτό το φύλλο πληροφοριών.

Συμφωνώ

Είμαι χρήστης έξυπνου τηλεφώνου (smartphone)

ΝΑΙ

Η ηλικία μου είναι μεταξύ 15-22 ετών

ΝΑΙ

Αν η απάντηση έστω στη μία από τις πιο πάνω ερωτήσεις είναι όχι, τότε ολοκληρώνεται η συμμετοχή σας. Ευχαριστούμε για το ενδιαφέρον σας, αλλά αυτή η έρευνα αφορά μόνο χρήστες έξυπνου τηλεφώνου, ηλικίας 15-22 ετών

APPENDIX C (Έγκριση Βιοηθικής)

ΚΥΠΡΙΑΚΗ ΔΗΜΟΚΡΑΤΙΑ
Αρ. Φακ.: ΕΕΒΚ ΕΠ 2025.01.68
Αρ. Τηλ.: 22819101 / 22819122 / 22809039 / 22809038
Αρ. Φαξ: 22353878

ΕΘΝΙΚΗ ΕΠΙΤΡΟΠΗ ΒΙΟΗΘΙΚΗΣ ΚΥΠΡΟΥ

27 Φεβρουαρίου, 2025

Δρ Μαριλένα Μουσουλίδου
Επίκουρη Καθηγήτρια Γνωστικής Ψυχολογίας
Τμήμα Ψυχολογίας
Πανεπιστήμιο Νεάπολις Πάφος
Λεωφόρος Δανάης 2
Γραφείο 234
8042 Πάφος

Κυρία Εριέττα Κωνσταντινίδου
Ιακώβου Καμπανέλλη 16
4105 Άγιος Αθανάσιος
Λεμεσός

Αγαπητές κυρίες,

Αίτηση γνωμοδότησης για την πρόταση με τίτλο:
«The Prevalence of Nomophobia in Cyprus Among Adolescents and its Relationship with Loneliness, Social Media Addiction, Fear of Missing Out, Anxiety and Phobic Anxiety
Ο Επιπολασμός της Νομοφοβίας μεταξύ των Εφήβων στην Κύπρο και η Σχέση της με τη Μοναξιά, τον Εθισμό στα Μέσα Κοινωνικής Δικτύωσης, το Σύνδρομο FOMO, το Άγχος και το Φοβικό Άγχος»

Αναφορικά με την αίτηση σας ημερομηνίας 20 Φεβρουαρίου 2025 για το πιο πάνω θέμα, επιθυμώ να σας πληροφορήσω ότι από τη μελέτη του περιεχομένου των εγγράφων που έχετε καταθέσει η Εθνική Επιτροπή Βιοηθικής Κύπρου (ΕΕΒΚ) **γνωμοδοτεί θετικά υπέρ της διεξαγωγής της εν λόγω έρευνας.**

2. Η Επιτροπή επιθυμεί να τονίσει ότι παραμένει ευθύνη δική σας η διεξαγωγή της έρευνας με τρόπο που να τηρούνται οι πρόνοιες του νέου Ευρωπαϊκού Γενικού Κανονισμού Προστασίας Προσωπικών Δεδομένων (2016/679) και του περί της Προστασίας των Φυσικών Προσώπων Έναντι της Επεξεργασίας των Δεδομένων Προσωπικού Χαρακτήρα και της Ελεύθερης Κυκλοφορίας των Δεδομένων αυτών Νόμος του 2018 (Ν. 125(Ι)/2018), ως αυτός εκάστοτε τροποποιείται.

3. Σας ενημερώνουμε ότι για σκοπούς καλύτερου συντονισμού και αποφυγής επανάληψης ερευνών με το ίδιο θέμα ή/και υπό εξέταση πληθυσμό μέσα σε σύντομο σχετικά χρονικό διάστημα, η ΕΕΒΚ δημοσιεύει στην ιστοσελίδα της το θέμα της έρευνας, τον φορέα και τον υπό εξέταση πληθυσμό.

.../2

Λαέρτου 22, 2365 Άγιος Δομέτιος, Λευκωσία
Ηλεκτρονικό Ταχυδρομείο: cnbc@bioethics.gov.cy, Ιστοσελίδα: www.bioethics.gov.cy

4. Κατά τη διάρκεια εκπόνησης της έρευνας, ο συντονιστής / επιστημονικός υπεύθυνος θα ενημερώνει την ΕΕΒΚ για κάθε τροποποίηση των αρχικά κατατεθειμένων εγγράφων (πρωτόκολλο ή άλλα ερευνητικά έγγραφα) και θα υποβάλλει τις απαιτούμενες έντυπες τροποποιήσεις στην Επιτροπή.

5. Σε περίπτωση διακοπής της έρευνας, ο συντονιστής / επιστημονικός υπεύθυνος θα ενημερώσει γραπτώς την Επιτροπή κάνοντας αναφορά και στους λόγους διακοπής της έρευνας.

6. Ο συντονιστής / επιστημονικός υπεύθυνος θα ενημερώσει την Επιτροπή σε περίπτωση αδυναμίας να συνεχίσει ως συντονιστής και θα υποβάλει τα στοιχεία επικοινωνίας του αντικαταστάτη του.

7. Με το πέρας της ερευνητικής πρότασης, ο συντονιστής / επιστημονικός υπεύθυνος θα ενημερώσει εγγράφως την Επιτροπή ότι το υπό αναφορά ερευνητικό πρωτόκολλο ολοκληρώθηκε.

8. Σας ευχόμαστε κάθε επιτυχία στη διεξαγωγή της έρευνάς σας.

Με εκτίμηση,

Καθ. Κωνσταντίνος Ν. Φελλάς
Πρόεδρος
Εθνικής Επιτροπής Βιοηθικής Κύπρου