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Workplace nomophobia: a systematic literature review

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Abstract

Nomophobia, or the fear of being without one's smartphone, is a growing concern in workplaces around the world. This phenomenon affects both employee well-being and organizational productivity. Despite its prevalence, there is a notable lack of systematic reviews investigating nomophobia in workplace, as well as the factors that intensify or inhibit it in workplace settings. This paper bridges this gap by conducting a systematic literature review of workplace nomophobia, drawing insights from 15,009 observations across 36 studies. Our review uncovers the widespread nature of nomophobia, its antecedents, symptoms, and the significant consequences it has in professional settings, such as increased anxiety, work stress, and frequent work interruptions. Demographic factors like age, gender, and education level influence the severity of nomophobia, with younger and more educated employees being especially vulnerable. The findings highlight the urgent need for interventions and organizational strategies to mitigate the negative effects of nomophobia and foster healthier digital habits at work. This study enriches the theoretical understanding of nomophobia and offers practical insights for future research and organizational practice.

Keywords Nomophobia · Workplace · Smartphone · Systematic review

Introduction

In recent years, the global footprint of smartphones has expanded dramatically, with projections indicating that their usage will escalate from 7.1 billion to 7.7 billion by 2028 (Press, 2024). This widespread adoption has positioned smartphones as more prevalent than both landlines and personal computers, making them essential in everyday life (Hessari & Nategh, 2022; Mokhtarinia et al., 2020; Al Ali & Matarneh, 2024; Khalid, 2023). A 2021 global survey revealed that 64% of working adults in the United States used their smartphones for business tasks, compared to 50% in Germany, with a global average of 54% (Statista, 2023). They have spurred the development of numerous mobile applications and software solutions aimed at boosting productivity, including prominent project management tools like Trello, Asana, and Monday.com (Cennamo, 2021; Hoeven et al., 2016). Moreover, in sectors such as healthcare and retail, smartphones are instrumental for accessing electronic health records, facilitating communications, managing inventory, and handling payments and sales (Blackburn et al., 2024; Junglas et al., 2022; Chadi et al., 2022), and smartphones have become fundamental tools across various sectors and countries.

The ubiquitous nature of smartphones has ushered in the era of nomophobia—the anxiety of being without one's mobile device (Hessari et al., 2022). This phenomenon has been highlighted as a significant challenge for both individuals and society at large in several leading practitioner journals including Forbes, Healthline, Medical News Today, and Psychology Today (Raypole & Nurmi, 2019; Travers, 2023; Elmore, 2014; Today, 2022). These sources stress the

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importance of recognizing and addressing nomophobia not only for individual mental health but also for the broader societal impact. Moreover, research underscores the importance of understanding the complex relationships individuals have with technology (Lai et al., 2023; Yildirim & Correia, 2015). This insight is crucial in empowering people to make informed decisions and, if needed, seek support in managing nomophobia (Yılmaz & Bekaroğlu, 2022). In a society where constant connectivity is commonplace, evaluating the effects of problematic smartphone use is essential for maintaining mental well-being (Caba-Machado et al., 2024).

Research underscores that nomophobia, or the fear of being without one's smartphone, affects many individuals in varying degrees, highlighting the importance of fostering healthy smartphone habits in the workplace (Hessari et al., 2022; Travers, 2023; Centor, 2023). As the popularity of electronic devices escalates, conducting comprehensive research on nomophobia within professional environments becomes increasingly vital (Koppel et al., 2022). Despite the prevalence of this phenomenon among employees, literature reviews specifically addressing nomophobia in workplace contexts are vividly absent. Moreover, there exists disparate information regarding factors are associated with levels of nomophobia (León-Mejía et al., 2021). While there are some systematic reviews on nomophobia among students (Tuco et al., 2023; Osorio-Molina et al., 2021; Notara et al., 2021; Devi & Dutta, 2022), the distinct dynamics of workplace settings—which differ markedly from academic environments—underscore the need for targeted reviews (Akbulut et al., 2017). These should consider specific workplace factors absent in educational settings. This study, therefore, aims to systematically examine existing research on employees' nomophobia, aiming to deepen the understanding of this issue and contribute to its theoretical framework.

Our research is structured around four primary goals: (1) We seek to determine the prevalence of nomophobia among employees across various work environments and to explore the role demographic factors play in its manifestation. (2) We aim to delve into the antecedents and symptoms associated with nomophobia among the workforce, aiming to uncover a more profound comprehension of this condition. (3) We assess the implications of nomophobia for both organizations and their employees, underscoring its critical impact within professional settings. (4) We endeavor to pinpoint existing research voids concerning nomophobia in workplace contexts and suggest directions for future inquiries that could advance our understanding of this phenomenon. Through this investigation, our objective is to enrich the discourse on workplace nomophobia, fostering further scholarly examination of its causes, effects, and the urgent need for targeted interventions.

Background

Overview of nomophobia

Nomophobia, a term initially introduced by the UK Post Office in 2008, encapsulates the anxiety associated with the absence of smartphone or internet connectivity (Bhattacharya et al., 2019). This phenomenon has garnered significant attention over the last decade, leading to a body of research that explores its prevalence, origins, ramifications, and its effects on diverse demographic groups including youth, university students, and working professionals (Notara et al., 2021; Rodríguez-García et al., 2020). Unlike conventional technology-related disorders, nomophobia is distinguished not by a specific phobia or anxiety disorder classification but by the overarching dread of losing connection to one's smartphone (Durak, 2019). This fear is deeply rooted in the manifold advantages that smartphones provide, such as seamless communication, ready access to information, and entertainment (Rodríguez-García et al., 2020). Distinct from the broader category of problematic smartphone usage, nomophobia is specifically characterized by the fear of disconnection, rather than by a loss of control over the device's use (Buctot et al., 2020).

Various theoretical frameworks have been proposed to elucidate the underlying mechanisms of nomophobia (Ceobanu et al., 2023). The Three-Dimensional Model identifies four principal triggers: the fear of being unable to communicate, anxiety from lack of connectivity, fear of not accessing information instantaneously, and the distress of forgoing the conveniences offered by smartphones (Rodríguez-García et al., 2020). Alternatively, the Uses and Gratifications Theory posits that nomophobia emerges when individuals perceive a threat to their needs and gratifications that are typically fulfilled by smartphones or internet access (Notara et al., 2021). The Cognitive-Behavioral Model links nomophobia to cognitive factors and behaviors that reinforce a cycle of anxiety and problematic smartphone use (Kaviani et al., 2020). Collectively, these models contribute to a deeper understanding of the complex nature of nomophobia, although there is a need for additional theories to further clarify this modern psychological concern.

Nomophobia antecedents

Nomophobia is influenced by a confluence of psychological, social, and cultural factors. Psychological antecedents such as anxiety, stress, and attachment styles might precipitate

problematic smartphone use, which in turn may cause anxiety when users are separated from their devices (Bhattacharya et al., 2019; King et al., 2013). Socially, factors like peer pressure and prevailing social norms may perpetuate a need for continuous connectivity (Durak, 2019; Gohar & Munir, 2022; Anshari et al., 2019; Dastgheyb Shirazi et al., 2021; Sui & Sui, 2021). Additionally, while the design elements of smartphones, such as push notifications and infinite scrolling, are commonly examined concerning user engagement, a nuanced understanding of these features' impact on user behavior is crucial (Morrison et al., 2017). Ongoing research explores the complex interplay between smartphone use and psychological outcomes, including anxiety and depression, indicating that these relationships are shaped by individual variances and contextual usage (Sela et al., 2022; Mendoza et al., 2018; Arpaci, 2022). Factors such as personal histories of trauma and cultural contexts that underscore the significance of technology also play critical roles in the development of nomophobia (Zwilling, 2022; Pavithra et al., 2015). Furthermore, family dynamics and personality traits, including perfectionism, low self-esteem, and impulsivity, alongside age and environmental conditions such as Wi-Fi accessibility, are significant contributors to nomophobia (Tomczyk & Lizde, 2022; Feizollahi et al., 2022; García-Masip et al., 2023; Nasab et al., 2021; Vagka et al., 2023; Darvishi et al., 2019).

Recent technological advancements and shifts in workplace culture, exacerbated by the global COVID-19 pandemic, have introduced additional dimensions to the antecedents of nomophobia. The shift towards remote work has heightened reliance on mobile devices for professional communications (Vargo et al., 2021), potentially amplifying anxieties associated with mobile phone separation. Moreover, the erosion of work-life boundaries has led to increased screen time, further integrating mobile devices into daily routines (Molino et al., 2020). Emerging psychological stressors, driven by the need for uninterrupted connectivity to manage work tasks, have become pronounced contributors to nomophobia. Moreover, social shifts toward digital communication over traditional face-to-face interactions also play a critical role in driving nomophobia (Wang & Suh, 2018). These changes underscore the necessity for a reassessment of current strategies aimed at mitigating the impact of nomophobia in contemporary work settings (Erdurmazlı et al., 2022).

Nomophobia symptoms

Nomophobia manifests through several distinct symptoms. One of them is the compulsive habit of repeatedly checking one's phone, a behavior that persists even in the absence of alerts or notifications. This compulsion is fueled by a powerful desire to remain abreast of messages, notifications, and social media activity (Yılmaz & Bekaroğlu, 2022). Moreover, a separation from their phone can precipitate feelings of anxiety or restlessness in those with nomophobia, particularly when usage is precluded by a depleted battery, lack of network coverage, or physical separation from the device. In more acute cases, the misplacement or theft of a phone can trigger episodes of panic or heightened anxiety (Santl et al., 2022; Sureka et al., 2020).

Another hallmark of this condition is a diminished capacity to focus on the task at hand or maintain engagement in conversations, as the individual's attention is invariably tethered to their phone (Mengi et al., 2020). This may escalate to a preference for digital over in-person communication, potentially leading to social withdrawal and strain in personal relationships (Yildirim & Correia, 2015; Jilisha et al., 2019). A further indication is the abandonment of duties or obligations, with excessive phone use usurping time otherwise allocated to work or academic pursuits (Reyt & Wiesenfeld, 2015). Furthermore, the pervasive fear of missing out, known as FOMO, on essential updates or experiences due to disconnection from their phones is also symptomatic of nomophobia (Gezgin et al., 2018; Kneidinger-Müller, 2019). Furthermore, physical manifestations such as trembling, perspiration, and accelerated heart rate upon separation from their phone have been documented (Bhattacharya et al., 2019). The phenomenon of phantom vibration syndrome, where individuals mistakenly sense their phone vibrating, is also indicative of this condition (Rosenberger, 2015).

Nomophobia repercussions

Nomophobia, a modern ailment tied to our digital age, is intricately linked to a spectrum of mental health challenges, including, but not limited to, anxiety, depression, and disrupted sleep. Individuals grappling with this condition might experience elevated levels of anxiety in the absence of their mobile devices, which can impede daily functioning and, in severe cases, precipitate panic attacks (Bhattacharya et al., 2019). The perpetual tether to social media can paradoxically engender a sense of isolation and erode self-esteem as users engage in social comparison and curate a flawless digital persona (Anshari et al., 2019; Razzaq et al., 2018). The overuse of smartphones, particularly before bedtime, has been implicated in sleep disturbances, laying the groundwork for conditions such as insomnia or sleep apnea—partly due to the intrusion of blue light into our natural sleep cycles (Jahrami et al., 2022a; Teker & Yakşi, 2021; Jahrami et al., 2022b).

Furthermore, nomophobia may erode fundamental social competencies, presenting obstacles to effective face-to-face

interactions (Bhattacharya et al., 2019; Bulut & Sengul, 2023; Valenti et al., 2022). This phobia may segue into a broader maladaptive relationship with smartphones, where individuals display withdrawal-like symptoms in the absence of their devices (Buctot et al., 2020; Al-Mamun, 2023). For the younger demographic, judicious screen-time management is critical to forestall outbursts and mitigate internet-related problems (Adamczyk et al., 2018). Additionally, smartphone and social media usage heightens exposure to cyberbullying, which has a detrimental impact on mental well-being (Catone et al., 2020), and increases the likelihood of accidents when used imprudently, such as while driving (Koppel et al., 2022; Kaviani et al., 2020).

The compulsive use of digital devices can attenuate attention spans, complicating tasks that demand prolonged concentration (Schwaiger & Tahir, 2022). It can strain personal relationships and provoke physical ailments such as eye discomfort, headaches, and musculoskeletal pain (Beukeboom & Pollmann, 2021). Collectively, nomophobia disrupts routine activities, interpersonal connections, and overall health, thereby diminishing life quality (Bhattacharya et al., 2019; Ahmed et al., 2021). Moreover, it has been associated with decreased physical activity and academic underperformance (Durak, 2019), potentially precipitating cognitive deterioration and an increased risk of dementia in the later stages of life (Schwaiger & Tahir, 2022). In essence, the constellation of nomophobia's ramifications encompasses a gamut from anxiety and diminished scholarly output to sleep disorders, relational friction, health issues, and a compromised quality of life (Tuco et al., 2023; Jahrami et al., 2022a; AlMarzooqi, 2022).

Nomophobia positive side

Nomophobia, commonly viewed through a lens of concern in relation to smartphone usage, is also posited by some scholars to yield advantageous effects. One such benefit is the enhancement of productivity, with individuals often finding themselves impelled to maintain efficiency and manage their responsibilities more effectively. This stems from the ability to obtain work-related data and remain accessible via their mobile devices (Wang & Suh, 2018; Nisar et al., 2019). Additionally, the condition may serve to solidify bonds with friends and family, as it facilitates immediate communication irrespective of geographic barriers (Sui & Sui, 2021; Oknita et al., 2023).

Moreover, for those experiencing nomophobia, the mobile phone acts as a conduit to security and reassurance, presenting a critical link to emergency services or support when faced with adversity — a provision that is particularly valuable for those who live by themselves or are navigating novel settings (Ford et al., 2022). Mobile phones also underpin autonomy, endowing individuals with the confidence to explore new locales and the capability to request assistance as needed. Beyond these practical utilities, mobile devices are gateways to an expanse of knowledge, catalyzing personal development and learning opportunities (Fletcher-Brown et al., 2021; Kondylakis et al., 2020).

Methods

A systematic review is a methodical endeavor designed to collate and distill all relevant data pertaining to a specific question, aiming to minimize bias and provide a thorough evaluation of existing research (Pati & Lorusso, 2018). This process not only conclusively addresses research questions but also facilitates informed decision-making by leveraging the current state of knowledge, thus avoiding the duplication of previous studies (Khan et al., 2003). By integrating results from various studies, systematic reviews enrich our understanding of the subject matter, enabling the formulation of broader conclusions (Liberati et al., 2009; Moher et al., 2015).

Central to conducting systematic reviews is the adherence to the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines. PRISMA offers a structured framework for review procedures and evidence-based reporting, ensuring the clarity and effectiveness of the reviews (Moher et al., 2015). It includes a comprehensive 27-item checklist and a flow diagram that outlines essential information necessary for a systematic review report (Pati & Lorusso, 2018; Parums, 2021). Following PRISMA guidelines not only helps authors produce transparent, high-quality, and reproducible reviews but also benefits a wide range of stakeholders, including editors, reviewers, policymakers, and users of the reviews (Page et al., 2021).

In our study, we adhere to PRISMA guidelines to ensure its quality and validity. In the realm of systematic research review papers, it is critical to articulate both the rationale and the significance of the research topic and questions based on the literature and PRISMA guidelines (Kitchenham, 2004). The rationale addresses existing gaps, needs, or issues in the literature or practice, enhancing the study's foundation. Conversely, the significance of the review highlights its potential contributions to advancing knowledge, informing decision-making, or improving outcomes (Cumpston et al., 2022; Khaw et al., 2023).

The term "Nomophobia" originated from a 2008 study by the UK Post Office (Devi & Dutta, 2022) and has increasingly captured attention due to its profound implications for employees and organizations (León-Mejía et al., 2021; Rodríguez-García et al., 2020). This condition affects millions of workers globally, not only diminishing their quality

of life but also heightening the risk of mental health challenges such as depression and anxiety (Rodríguez-García et al., 2020). Despite the growing body of research evaluating nomophobia in the workplace, findings on its impact remain inconsistent across different organizations and employees (Hessari et al., 2022).

Given this backdrop, a systematic review is crucial to aggregate and synthesize the current evidence concerning the effects of nomophobia on both employees and their employers (Gonçalves et al., 2023). Research to date highlights its presence in various workplace settings, yet there remains no consensus on its prevalence or consistent impacts (León-Mejía et al., 2021). Furthermore, the absence of standardized guidelines to address and manage nomophobia at work, along with unclear definitions of its antecedents, underscores significant gaps in the literature. Consequently, this study is designed to address these disparities by exploring diverse questions related to the influence of nomophobia in workplace environments.

RQ1: *To what extent is nomophobia prevalent among employees?*
RQ2: *How can employees' demographic characteristics impact on nomophobia?*
RQ3: *What are the antecedents of nomophobia in workplaces?*
RQ4: *What are the nomophobia impacts on employees?*
RQ5: *What are the nomophobia consequences for organizations?*
RQ6: *How can employees' nomophobia be dealt with?*

Table 1 List of exhaustively searched bibliographic resources

Database type	Electronic bibliographic resource
Bibliographic	EBSCO™ Business Source Complete SCOPUS Computer Science PROQUEST™, with the following subdatabases selected: ABI/INFORM Global, ERIC, LISA, PsychARTICLES, Technology Collection ACM Digital Library™ IEEE Xplore Digital Library™ Emerald Insight Association for Information Systems (AIS) Digital Library Directory of Open Access Journals PubMed
Search engine	Google Scholar
Thesis repository	Dissertation Abstracts™ ProQuest
Working papers	Social Science Research Network (SSRN) (https://ssrn.com/en/) ResearchGate (https://www.researchgate.net/home) Academia (https://www.academia.edu/)

This study aims to systematically review the available literature on workplace nomophobia in several databases (see Table 1). The primary objective is to determine the prevalence of nomophobia among employees and its effects on work-related matters. The review will also identify the main objectives, variables, sample details, and measurement tools employed in prior studies.

Search strategy

Our sampling criteria included all empirical studies available up until the end of April 2024. This included studies accepted for publication, already published, dissertations, or circulated as working papers, specifically those involving employees. To ensure a comprehensive collection of relevant studies, we utilized a rigorous search and selection methodology. This process was carried out by two authors and two research assistants, who were extensively trained to perform detailed searches. They used a curated list of keywords such as "nomophobia," "nomophobic," "no mobile phone," "at workplace," "at work," "by employees," "by teacher," "by worker," "by nurses," "during work," "in the workplace," "on the job." These keywords were linked using Boolean operators to maximize the relevancy and breadth of the search across various academic databases listed in Table 1.

Each bibliographic resource was exhaustively searched with each keyword combination until no new unique studies emerged. Findings were compiled into a central online repository. This methodical search was repeated for each database to ensure saturation. We also reviewed the reference lists of all retrieved articles to identify any studies that may have been initially overlooked. To ensure no significant publications were missed, three additional rounds of searches were conducted using Google Scholar, Scopus, and various publishers' websites. These searches were designed to capture recently cited articles and those recommended by these platforms.

Study selection

To facilitate a rigorous review process, search results were meticulously cataloged in a Microsoft Excel spreadsheet, streamlining the subsequent removal of duplicate entries. The eligibility assessment, performed by Author A and Author B, followed a standardized protocol without the use of blinding to maintain transparency. Initially, we scrutinized titles, keywords, and abstracts for congruence with our inclusion criteria, which necessitated peer-reviewed status and English language publication. Our review was strictly confined to studies exploring the phenomenon of nomophobia in workplace contexts among employees and

the wider workforce. The full texts of potentially relevant articles were then meticulously evaluated. In instances of divergence in the inclusion decision, a quorum of four researchers was convened to deliberate until a unanimous decision was secured. Non-conforming articles were systematically excluded as detailed in Fig. 1.

The initial search amassed 771 records, spanning a broad spectrum of academic contributions. Our investigation focused specifically on articles that substantively addressed'nomophobia' in workplace settings. Hence, in the first round of exclusion, 354 records were disregarded for not meeting the requisite focus, and a further 381 were discounted in the second culling. The final phase of refinement

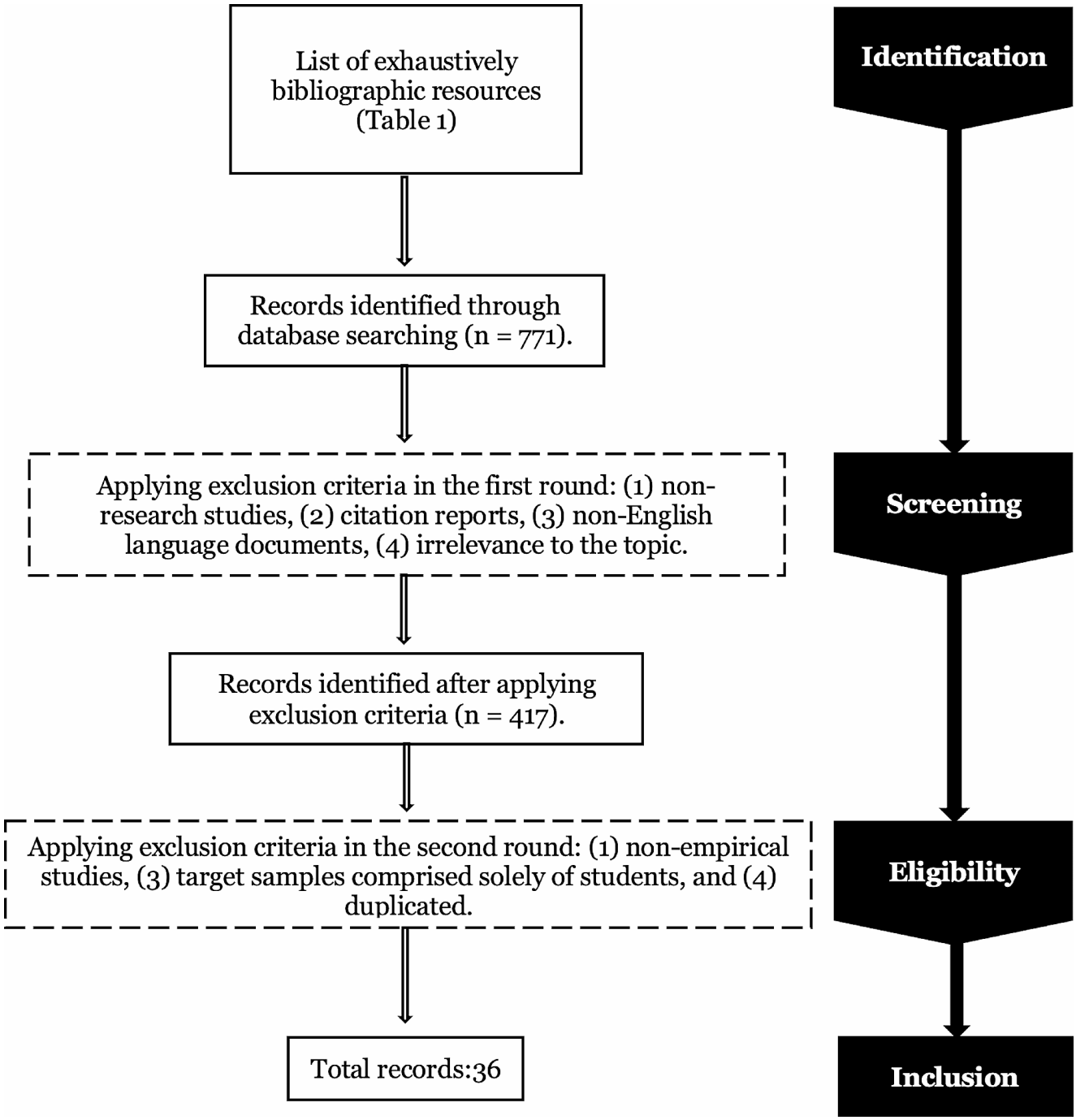

Fig. 1 PRISMA flow diagram. Note: A significant reduction in the number of eligible papers occurred as the review specifically targets nomophobia within employed populations. Studies with samples comprised exclusively of students were excluded to maintain relevance to the workplace context

involved eliminating duplicate entries, culminating in a distilled set of 36 studies earmarked for comprehensive analysis.

Bias control

In this systematic review (SR), we recognized the inherent challenges of subjectivity and implemented stringent measures to mitigate bias, a detail that is not lost in scholarly pursuits. The primary authors, charged with the analytical framework of the review, reached a unanimous agreement on all studies included, signaling our unwavering dedication to methodological precision (Mallett et al., 2012).

To anchor our review in objectivity, we established clearly defined criteria for the inclusion of studies, which were: (1) Direct relevance to the central research question—this ensured that each selected study provided insights specifically related to nomophobia within workplace settings; (2) Methodological rigor—this required an examination of the design, data collection, and analytical rigor within each study, affirming the dependability of the results; and (3) Transparency in reporting—this enabled us to evaluate how clearly and comprehensively studies disclosed their methods and outcomes. Employing these criteria as our compass, we were able to impartially assess the merit of each study, irrespective of its origin, thus cultivating an extensive and unbiased review of literature on nomophobia (Lowry et al., 2023).

To encompass the full gamut of research, our search strategy transcended the confines of databases traditionally recognized, such as SCOPUS or WoS. A thorough SR demands an expansive approach, hence our exploration extended to various scholarly communications including journal articles, book chapters, working papers, and conference proceedings, as well as doctoral dissertations, ensuring an exhaustive representation of the field (Mohamed Shaffril et al., 2021). Searches were also conducted on institutional repositories to circumvent publication bias and to discover grey literature (Dalton et al., 2016; Hedin et al., 2016). The inclusion of non-indexed journals was judicious, abiding by rigorous selection criteria that fortified the integrity of our research process (Begg & Mazumdar, 1994; Duval & Tweedie, 2000). While our extensive search through various repositories, including Google Scholar, unveiled a multitude of publications on nomophobia, it was discerned that a substantial number did not meet the established criteria, particularly with respect to context relevance, language, and methodological robustness. Ultimately, only those studies that rigorously aligned with our criteria were integrated into the SR.

Results

The investigation into nomophobia at work began in 2018 with four studies. The first of these specifically explored the nomophobia among teachers and academics (Shankar et al., 2018), while the remaining three investigated the prevalence of nomophobia across a broader employee spectrum (Wang & Suh, 2018; Olivencia-Carrión et al., 2018; Tams et al., 2018). The next year, 2019, saw a single study focusing on leaders (Shields, 2019). In 2020, the research included healthcare professionals, with two papers on nurses (Bülbüloğlu et al., 2020; Lupo, 2020), and two papers evaluated nomophobia among employees in various professions (Aslan & Aslan, 2020; Karademir Coskun & Kaya, 2020). Four more studies in 2021 were dedicated to teachers and academics (Boyer, 2021; Fryman & Romine, 2021; Gokani et al., 2021; Kukreti, 2021), and one to aviation employees (Bilkay, 2021). That year also included a study on nurses (Hoşgör, 2021). Research continued in 2022 with three studies on various employees (Afzal et al., 2022; Daniel, 2022; Merdan & Erdem, 2022) and three on nurses (Anggoro & Handiyani, 2022; Lupo et al., 2022; Uguz & Bacaksiz, 2022), plus two on teachers and academics (Erdurmazlı et al., 2022; Önder et al., 2022). In 2023, four studies investigated nomophobia among healthcare professionals, including nurses, doctors, and other medical staff (Kapikiran et al., 2023; Vitale et al., 2023; Abdulrahman, 2023; Chouhan, 2023). Eight additional studies looked at various employees from an array of sectors, including seafarers and journalists (García-Masip et al., 2023; Ahmed & Yousaf, 2023; Arumuganathan et al., 2023; Özgür et al., 2023; Aladag & Altinpinar, 2023; Saidon et al., 2023; Contreras Pinochet et al., 2023; Sapmaz, 2023). One study also evaluated nomophobia among teachers and academics (Pala, 2023). The trend of increasing publications year after year reflects a rising academic interest in nomophobia and its importance for practitioners and researchers (see Fig. 2). This uptick is likely due to the growing use of smartphones and their apps (Koppel et al., 2022). Table 2 summarizes these studies succinctly.

Sample details

Our study rigorously analyzed 36 papers spanning from 2018 to 2023, all delving into the phenomenon of nomophobia among employees. Collectively, these papers encompassed a sample size of 15,009 individuals. Within this corpus, 18 papers with a total of 7,783 participants scrutinized nomophobia across various sectors such as government and private organizations, civil aviation, seafaring, journalism, and service industries (García-Masip et al., 2023; Wang & Suh, 2018; Olivencia-Carrión et al., 2018; Tams et al., 2018;

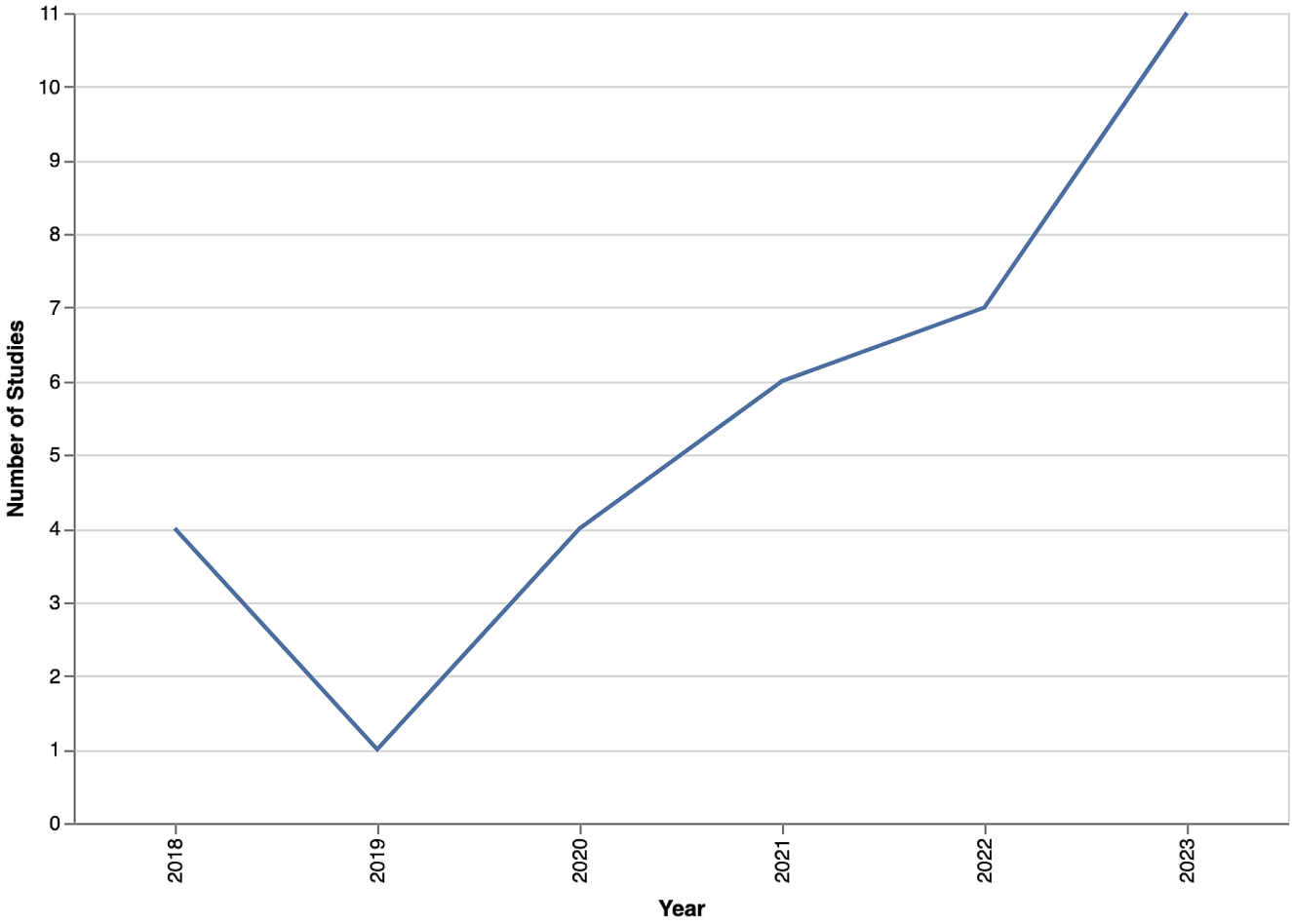

Fig. 2 Publication trend of workplace nomophobia studies

Shields, 2019; Aslan & Aslan, 2020; Karademir Coskun & Kaya, 2020; Bilkay, 2021; Afzal et al., 2022; Daniel, 2022; Merdan & Erdem, 2022; Ahmed & Yousaf, 2023; Arumuganathan et al., 2023; Özgür et al., 2023; Aladag & Altinpinar, 2023; Saidon et al., 2023; Contreras Pinochet et al., 2023; Sapmaz, 2023). Focusing on the healthcare sector, ten papers surveyed 3,286 healthcare professionals, including nurses, doctors, and medical staff, to gauge the impact of nomophobia (Bülbüloğlu et al., 2020; Lupo, 2020; Hoşgör, 2021; Anggoro & Handiyani, 2022; Lupo et al., 2022; Uguz & Bacaksiz, 2022; Kapikiran et al., 2023; Vitale et al., 2023; Abdulrahman, 2023; Chouhan, 2023). Additionally, eight papers explored the condition among 3,940 teachers and academics (Erdurmazlı et al., 2022; Shankar et al., 2018; Boyer, 2021; Fryman & Romine, 2021; Gokani et al., 2021; Kukreti, 2021; Önder et al., 2022; Pala, 2023).

Geographically, the studies showcase a wide range: fourteen were conducted in Turkey (Erdurmazlı et al., 2022; Bülbüloğlu et al., 2020; Aslan & Aslan, 2020; Karademir Coskun & Kaya, 2020; Bilkay, 2021; Hoşgör, 2021; Merdan & Erdem, 2022; Uguz & Bacaksiz, 2022; Önder et al., 2022; Kapikiran et al., 2023; Özgür et al., 2023; Aladag & Altinpinar, 2023; Sapmaz, 2023; Pala, 2023), three in the USA (Boyer, 2021; Fryman & Romine, 2021; Daniel, 2022), and three in Italy (Lupo, 2020; Lupo et al., 2022; Vitale et al., 2023). India was the focus of four papers (Shankar et al., 2018; Gokani et al., 2021; Chouhan, 2023; Arumuganathan et al., 2023), while two studies utilized samples from Spain (García-Masip et al., 2023; Olivencia-Carrión et al., 2018). Additionally, the research included one study each from China (Kukreti, 2021), South Korea (Wang & Suh, 2018), and Canada (Tams et al., 2018), with two from Pakistan (Afzal et al., 2022; Ahmed & Yousaf, 2023). Single studies were also performed in Indonesia (Anggoro & Handiyani, 2022), Brazil (Contreras Pinochet et al., 2023), Malaysia (Saidon et al., 2023), and Saudi Arabia (Abdulrahman, 2023). Moreover, one paper aimed to capture a global view of the issue (Shields, 2019).

This compilation of research highlights that nearly half of the studies focused on nomophobia within various

Table 2 Summary of all articles included

Reference	Study	Year	Publication type	Country	Sample details	Aim	Method
Wang & Suh, 2018	Wang & Suh	2018	Conference	South Korea	187 employees	Nomophobia outcomes	Survey
Olivencia-Carrión et al., 2018	Olivencia-Carrion et al	2018	ISI Journal	Spain	181 employees	Nomophobia antecedents and inhibitors	Survey
Tams et al., 2018	Tams et al	2018	ISI Journal	Canada	270 employees	Nomophobia outcomes	Mix Method
Shankar et al., 2018	Shankar et al	2018	Non-ISI Journal	India	50 teachers and academics	Nomophobia prevalence and antecedents	Survey
Shields, 2019	Shields	2019	Dissertation	Worldwide	401 employees (Leaders)	Nomophobia antecedents	Survey
Bülbüloğlu et al., 2020	Bulbuloglu	2020	ISI Journal	Turkey	314 healthcare professionals (Nurses)	Nomophobia outcomes and antecedents	Survey
Lupo, 2020	Lupo et al	2020	Non-ISI Journal	Italy	539 healthcare professionals (Nurses)	Nomophobia outcomes and prevalence	Survey
Aslan & Aslan, 2020	Aslan & Aslan	2020	Non-ISI Journal	Turkey	207 employees	Nomophobia outcomes and antecedents	Survey
Karademir Coskun & Kaya, 2020	Karademir Coskun	2020	Non-ISI Journal	Turkey	210 employees	Nomophobia prevalence, antecedents, and inhibitors	Survey
Boyer, 2021	Boyer	2021	Dissertation	USA	161 teachers and academics	Nomophobia prevalence and antecedents	Survey
Fryman & Romine, 2021	Fryman & Romine	2021	Non-ISI Journal	USA	56 teachers and academics	Nomophobia outcomes and antecedents	Survey
Gokani et al., 2021	Gokani et al	2021	Non-ISI Journal	India	32 teachers and academics	Nomophobia prevalence and antecedents	Survey
Kukreti, 2021	Kukreti et al	2021	ISI Journal	China	2603 teachers and academics	Nomophobia outcomes	Survey
Bilkay, 2021	Bilkay	2021	Book	Turkey	1073 employees	Nomophobia prevalence and antecedents	Survey
Hoşgör, 2021	Hosgor et al	2021	ISI Journal	Turkey	178 healthcare professionals (Nurses)	Nomophobia outcomes and prevalence	Survey
Afzal et al., 2022	Afzal et al	2022	Non-ISI Journal	Pakistan	300 employees	Nomophobia outcomes and antecedents	Survey
Daniel, 2022	Daniel	2022	Dissertation	USA	434 employees	Nomophobia outcomes	Survey
Merdan & Erdem, 2022	Merdan & Erdem	2022	Non-ISI Journal	Turkey	357 employees	Nomophobia outcomes	Survey
Anggoro & Handiyani, 2022	Anggoro & Handiyani	2022	Non-ISI Journal	Indonesia	113 healthcare professionals (Nurses)	Nomophobia antecedents and inhibitors	Survey
Lupo et al., 2022	Lupo et al	2022	Non-ISI Journal	Italy	502 healthcare professionals (Nurses)	Nomophobia prevalence and antecedents	Survey
Uguz & Bacaksiz, 2022	Uguz & Bacaksiz	2022	ISI Journal	Turkey	669 healthcare professionals (Nurses)	Nomophobia antecedents and inhibitors	Survey
Erdurmazlı et al., 2022	Erdurmazli et al	2022	ISI Journal	Turkey	398 teachers and academics	Nomophobia outcomes	Survey
Önder et al., 2022	Onder et al	2022	Non-ISI Journal	Turkey	310 teachers and academics	Nomophobia prevalence and antecedents	Survey
Kapikiran et al., 2023	Kapikiran et al	2023	ISI Journal	Turkey	186 healthcare professionals (Nurses)	Nomophobia outcomes and prevalence	Survey
Vitale et al., 2023	Vitale et al	2023	ISI Journal	Italy	430 healthcare professionals (Nurses)	Nomophobia prevalence and antecedents	Survey
García-Masip et al., 2023	García-Masip et al	2023	ISI Journal	Spain	366 employees	Nomophobia antecedents and inhibitors	Survey
Contreras Pinochet et al., 2023	Contreras Pinochet et al	2023	ISI Journal	Brazil	454 employees	Nomophobia outcomes	Survey
Sapmaz, 2023	Sapmaz	2023	Non-ISI Journal	Turkey	204 employees	Nomophobia outcomes and antecedents	Survey

Table 2 (continued)

Reference	Study	Year	Publication type	Country	Sample details	Aim	Method
Ahmed & Yousaf, 2023	Ahmed & Yousaf	2023	Non-ISI Journal	Pakistan	1005 employees (Journalists)	Nomophobia prevalence and antecedents	Survey
Arumuganathan et al., 2023	Arumuganathan et al	2023	Non-ISI Journal	India	661 employees	Nomophobia prevalence and antecedents	Survey
Özgür et al., 2023	Özgür et al	2023	Non-ISI Journal	Turkey	850 employees	Nomophobia outcomes and antecedents	Survey
Pala, 2023	Pala	2023	Non-ISI Journal	Turkey	330 teachers and academics	Nomophobia antecedents	Survey
Chouhan, 2023	Chouhan	2023	Non-ISI Journal	India	40 healthcare professionals (Doctors)	Nomophobia prevalence	Survey
Aladag & Altinpinar, 2023	Aladag & Altinpinar	2023	ISI Journal	Turkey	351 employees (Seafarer)	Nomophobia outcomes and antecedents	Survey
Saidon et al., 2023	Saidon et al	2023	Non-ISI Journal	Malaysia	272 employees	Nomophobia antecedents	Mix Method
Abdulrahman, 2023	Abdulrahman	2023	Non-ISI Journal	Saudi Arabia	315 healthcare professionals (Medical professionals)	Nomophobia outcomes and prevalence	Survey

employment settings, indicating its recognized prevalence in the occupational sphere. The healthcare profession's encounter with nomophobia is also significant, reflected by the ten studies focusing on this group, underlining the pertinence of nomophobia in high-stress, high-stakes environments (see Fig. 3).

Aims

In our systematic review, we categorized the research papers into four distinct groups based on their primary objectives concerning nomophobia, noting that many papers had overlapping goals (see Fig. 4). The prevalence of nomophobia

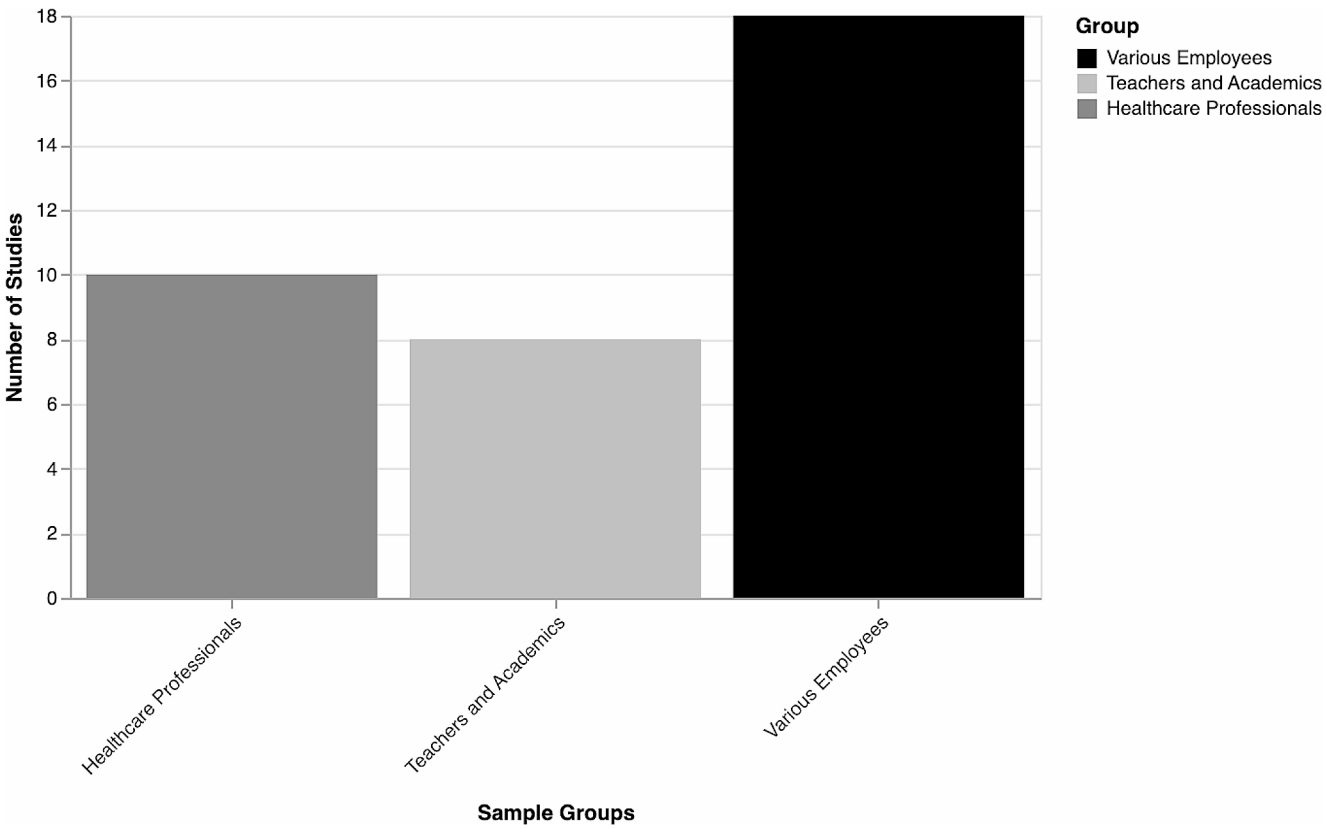

Fig. 3 Distribution of sample groups in workplace nomophobia studies

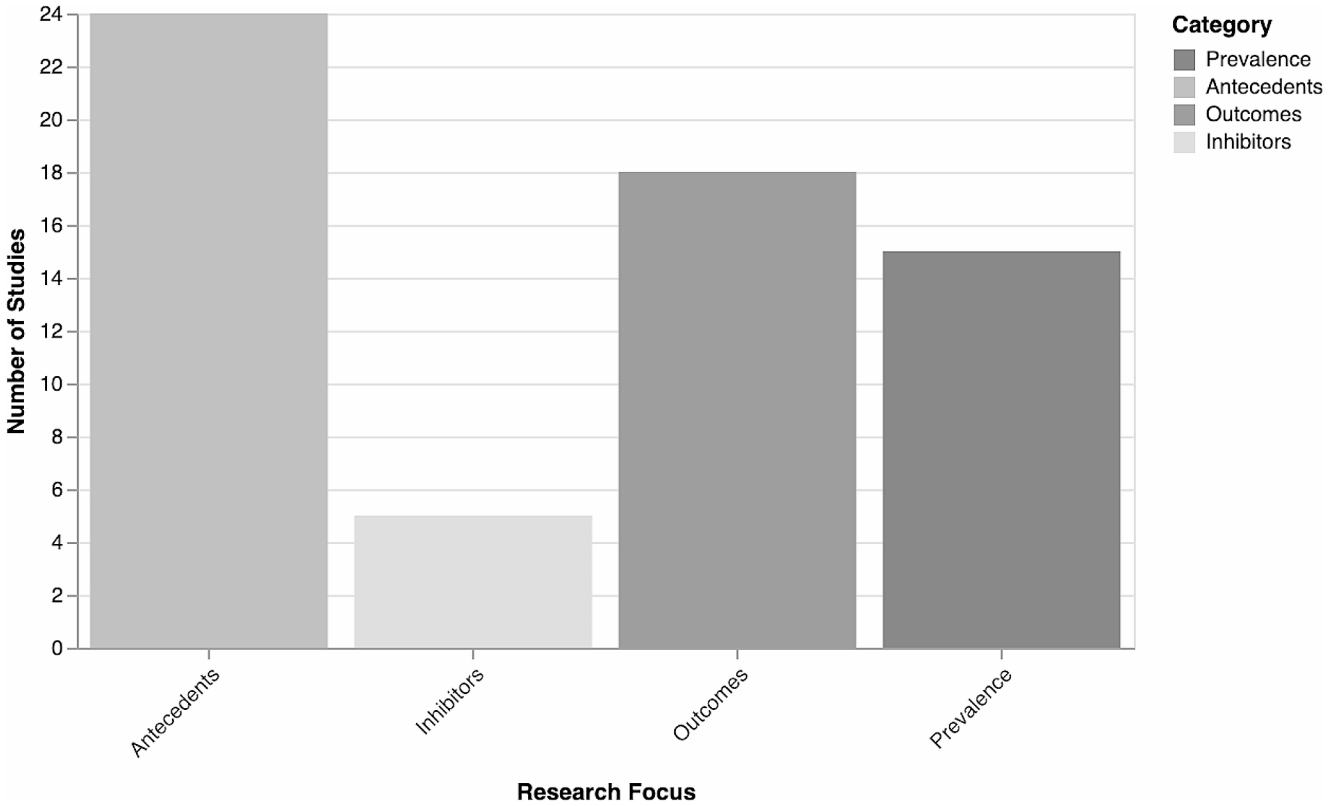

Fig. 4 Cumulative Focus in Workplace Nomophobia Studies. Note: The numbers in the chart above reflect counts of study focuses, where some studies may fall into multiple categories (e.g., a study might address both'Prevalence' and'Antecedents'). As such, the total number of category counts exceeds the actual number of studies, which is 36

was extensively examined; seven studies focused on healthcare professionals (Lupo, 2020; Hoşgör, 2021; Lupo et al., 2022; Kapikiran et al., 2023; Vitale et al., 2023; Abdulrahman, 2023; Chouhan, 2023), four on teachers and academics (Shankar et al., 2018; Boyer, 2021; Gokani, et al. 2021; Önder et al., 2022), and four addressed a broader employee base including those in various industries (Karademir Coskun & Kaya, 2020; Bilkay, 2021; Ahmed & Yousaf, 2023; Arumuganathan et al., 2023).

Concerning the consequences of nomophobia, the literature varied across professions. Five papers considered its impact on healthcare professionals (Bülbüloğlu et al., 2020; Lupo, 2020; Hoşgör, 2021; Kapikiran et al., 2023; Abdulrahman, 2023), three on teachers and academics (Erdurmazlı et al., 2022; Fryman & Romine, 2021; Kukreti, 2021), and ten on a mixed group of employees (Wang & Suh, 2018; Tams et al., 2018; Aslan & Aslan, 2020; Afzal et al., 2022; Daniel, 2022; Merdan & Erdem, 2022; Özgür et al., 2023; Aladag & Altinpinar, 2023; Contreras Pinochet et al., 2023; Sapmaz, 2023), highlighting the widespread relevance of this issue across different sectors.

The studies also explored antecedents of nomophobia with five focusing on healthcare professionals (Bülbüloğlu et al., 2020; Anggoro & Handiyani, 2022; Lupo et al., 2022; Uguz & Bacaksiz, 2022; Vitale et al., 2023), thirteen on a diverse set of employees (García-Masip et al., 2023; Olivencia-Carrión et al., 2018; Shields, 2019; Aslan & Aslan, 2020; Karademir Coskun & Kaya, 2020; Bilkay, 2021; Afzal et al., 2022; Ahmed & Yousaf, 2023; Arumuganathan et al., 2023; Özgür et al., 2023; Aladag & Altinpinar, 2023; Saidon et al., 2023; Sapmaz, 2023), and six on teachers and academics (Shankar et al., 2018; Boyer, 2021; Fryman & Romine, 2021; Gokani et al., 2021; Önder et al., 2022; Pala, 2023). Furthermore, some papers assessed factors that they are associated with nomophobia reduction among employees and healthcare professionals (García-Masip et al., 2023; Olivencia-Carrión et al., 2018; Karademir Coskun & Kaya, 2020; Anggoro & Handiyani, 2022; Lupo et al., 2022).

The aggregate findings from these studies underscore a robust scholarly engagement with the factors that precipitate nomophobia and its repercussions on employees and their work environments. Notably, there remains a scarcity of research dedicated to strategies or interventions aimed at preventing or mitigating nomophobia. This gap highlights the urgent need for further studies that could offer actionable insights for organizational leaders to combat nomophobia effectively within their teams. Such research is indispensable for developing informed strategies that

not only address the symptoms but also the root causes of nomophobia in workplace settings.

Discussion

Smartphones have evolved into indispensable tools across various industries, markedly enhancing workplace flexibility and productivity (Cijan et al., 2019). However, this reliance on constant connectivity can have a downside, manifesting as nomophobia—a condition characterized by anxiety when separated from one's smartphone (Wang & Suh, 2018). Although nomophobia is not recognized as a formal psychiatric disorder, its growing prevalence has significant repercussions, detracting from employee well-being and potentially undermining organizational efficiency. It is imperative for employers to recognize and address the challenges posed by nomophobia actively (Wang & Suh, 2018). Promoting balanced technology use within the workplace can mitigate its negative impacts and enhance overall employee satisfaction and productivity (Afzal et al., 2022; Leesakul et al., 2022). This paper reviews the extant research on nomophobia, pinpointing critical gaps such as the need for more empirical studies on intervention strategies and the long-term effects of nomophobia on workplace dynamics. These insights are summarized, which serves as a resource for both researchers and practitioners interested in developing effective policies to foster healthier digital habits among employees.

The prevalence of nomophobia among employees is increasingly recognized as a significant issue in workplaces globally. The most studies have documented its prevalence, showing severe levels of nomophobia among employees (e.g., journalists in Pakistan, healthcare professionals in Saudi Arabia, and teachers in India, Turkey, and the USA) (Shankar et al., 2018; Boyer, 2021; Gokani et al., 2021; Önder et al., 2022; Abdulrahman, 2023; Chouhan, 2023; Ahmed & Yousaf, 2023; Arumuganathan et al., 2023), while moderate levels of nomophobia have been observed among Turkish and Italian healthcare professionals (Lupo, 2020; Hoşgör, 2021; Lupo et al., 2022; Kapikiran et al., 2023). Although moderate to low levels are noted in other employee groups (Karademir Coskun & Kaya, 2020), and one study suggested mild nomophobia among Turkish healthcare professionals (Vitale et al., 2023), our analysis indicates a general trend towards moderate to severe nomophobia across all types of employees. This pervasive issue underscores the need for well-defined organizational strategies to mitigate nomophobia, particularly as smartphones become ever more integral to daily professional life. Addressing nomophobia is crucial not only for improving individual employee well-being but also for enhancing overall organizational productivity and job satisfaction.

Addressing the second research question, our review of the literature reveals gender differences in the experience of nomophobia. Specifically, a study by (Shankar et al., 2018) highlights that female teachers exhibit significantly higher levels of nomophobia, largely due to fears related to losing convenience, access to information, and connectivity. This finding is echoed in additional research (Boyer, 2021; Fryman & Romine, 2021; Gokani et al., 2021; Afzal et al., 2022; Uguz & Bacaksiz, 2022; Vitale et al., 2023; Aladag & Altinpinar, 2023), which also notes a higher prevalence of nomophobia among female employees compared to their male counterparts. In contrast, (Lupo et al., 2022) presents an anomaly, indicating that male employees experience greater levels of nomophobia than females. However, several studies (Karademir Coskun & Kaya, 2020; Bilkay, 2021; Anggoro & Handiyani, 2022; Önder et al., 2022; Ahmed & Yousaf, 2023; Arumuganathan et al., 2023; Pala, 2023) found no significant differences in nomophobia levels between male and female employees, suggesting that the impact of gender may vary across different contexts or methodologies.

This discrepancy underscores multiple factors influencing gender-specific smartphone engagement (Andone et al., 2016). Gender roles and societal norms may shape how men and women use their smartphones, with women often relying more on these devices for social interaction, thereby intensifying their experience of nomophobia (Sharma et al., 2022). Research suggests that varying anxiety and stress levels, which differ by gender, could amplify this phenomenon. Higher stress levels reported among women, potentially linked to multitasking, and managing work-life balance, emphasize the necessity of smartphones for connectivity (Deursen et al., 2015). These differences have profound implications for understanding workplace nomophobia and necessitate tailored intervention strategies. Policies promoting digital wellness should incorporate gender-sensitive approaches, recognizing the unique aspects of problematic smartphone use. Understanding these variations can help design support systems to mitigate nomophobia's impact, enhancing employee well-being and productivity, and further investigation into gender-based differences in nomophobia is imperative to deepen our understanding of these dynamics.

Additionally, the relationship between nomophobia and educational level among employees has been explored, with studies (Bülbüloğlu et al., 2020; Aslan & Aslan, 2020; Aladag & Altinpinar, 2023) suggesting that individuals with higher education are more prone to experience nomophobia. This correlation is supported by a consensus in the literature that higher educational levels tend to correlate with more

severe manifestations of nomophobia. While a few studies (Anggoro & Handiyani, 2022; Önder et al., 2022) report no significant relationship between educational level and nomophobia, the majority position maintains that employees with higher education are more susceptible to problematic smartphone use and consequent higher levels of nomophobia. This suggests an intricate interplay between educational attainment and technological reliance, warranting further scholarly attention. Moreover, studies (Aslan & Aslan, 2020; Karademir Coskun & Kaya, 2020; Gokani et al., 2021) indicate a positive association between nomophobia and single employees, with married employees typically exhibiting lower levels of this anxiety. Conversely, findings from (Anggoro & Handiyani, 2022; Önder et al., 2022) reveal no significant relationship between nomophobia and marital status, while (Bilkay, 2021) identifies higher prevalence among married employees. This disparity underscores the need for further inquiry into how marital status influences nomophobia.

Furthermore, research consistently shows that younger employees are more susceptible to nomophobia, particularly those under 35, who exhibit higher levels, supported by a distinct negative correlation between age and nomophobia as documented in (Shankar et al., 2018; Bülbüloğlu et al., 2020; Karademir Coskun & Kaya, 2020; Boyer, 2021; Gokani et al., 2021; Bilkay, 2021; Uguz & Bacaksiz, 2022; Abdulrahman, 2023; Arumuganathan et al., 2023; Aladag & Altinpinar, 2023). However, two papers report no significant age-related trends (Anggoro & Handiyani, 2022; Önder et al., 2022). Predominantly, evidence supports higher incidence of nomophobia among younger workers. Conversely, employees with extensive work experience generally report lower nomophobia levels, contrary to newer employees who are more affected (Aslan & Aslan, 2020; Bilkay, 2021; Uguz & Bacaksiz, 2022; Vitale et al., 2023). Yet, another paper suggests that those with greater work experience might also experience heightened nomophobia (Lupo et al., 2022), a finding not corroborated by (Anggoro & Handiyani, 2022; Önder et al., 2022). Overall, the data portrays younger employees as more tethered to their smartphones, experiencing increased anxiety and discomfort when disconnected.

In exploring the third research question, research delineates a range of factors exacerbating nomophobia among employees. One notable factor involves the influence of leadership and work-related expectations. A study highlights that leaders heavily reliant on their smartphones tend to exhibit increased nomophobia (Shields, 2019). This issue is compounded by work-related expectations, such as the need for constant availability and the utilization of technology for professional tasks, which significantly contribute to the development of nomophobia. This condition is particularly pronounced among employees who feel obligated to address work-related communications outside of normal working hours, potentially leading to problematic smartphone use (Ahmed & Yousaf, 2023; Arumuganathan et al., 2023).

The extent and manner of smartphone use significantly influence nomophobia among employees. While a solitary study questions the link between the length of mobile phone usage and levels of employee nomophobia (Gokani et al., 2021), most research supports a direct correlation. Extensive studies have consistently found a robust relationship between the duration of smartphone usage and increased nomophobia among employees. These investigations highlight specific behaviors such as frequent smartphone checks, carrying a charger, using smartphones immediately before sleep, and using them in bed, which are indicative of higher nomophobia levels. Moreover, the accessibility of the internet and social media through smartphones further exacerbates this issue. Research indicates that employees with high internet and social media usage exhibit more severe nomophobia (Bülbüloğlu et al., 2020; Fryman & Romine, 2021; Afzal et al., 2022; Uguz & Bacaksiz, 2022; Ahmed & Yousaf, 2023; Arumuganathan et al., 2023; Saidon et al., 2023), and those habituated to checking their social media applications are notably more prone to nomophobia (Karademir Coskun & Kaya, 2020; Önder et al., 2022; Pala, 2023).

The exacerbation of these trends has been notably observed during the COVID-19 pandemic, which has intensified nomophobia among specific groups, such as teachers who experience heightened virus-related fears and utilize their smartphones to find coping mechanisms (Kukreti, 2021). Additionally, social pressures can magnify nomophobia. A study demonstrated that employees subjected to intense social pressures tend to exhibit significant levels of nomophobia, often using their smartphones as coping mechanisms (Afzal et al., 2022). This finding corroborates another study, which highlighted a robust positive correlation between social threats and nomophobia (Tams et al., 2018). Similarly, a study found that employees with lower physical activity levels suffer more from nomophobia due to increased smartphone engagement (Vitale et al., 2023). These findings collectively underscore that both the duration and frequency of smartphone use, along with problematic social media and internet use, are crucial contributors to nomophobia in employees across various sectors.

In addressing the fourth research question, a substantial body of research (Tams et al., 2018; Aslan & Aslan, 2020; Kukreti, 2021; Afzal et al., 2022) illuminates how nomophobia escalates stress levels in employees by fostering an unrelenting need to remain connected. This constant connectivity makes it challenging for individuals to detach from work responsibilities and indulge in leisure

activities, thus intensifying work-related stress. Furthermore, there is evidence suggesting that nomophobia may directly cause post-traumatic stress disorder and contribute to heightened anxiety and loneliness (Fryman & Romine, 2021; Kukreti, 2021; Vitale et al., 2023; Contreras Pinochet et al., 2023). The phenomenon also exacerbates the fear of missing out (FoMo) and is linked to emotional exhaustion, fatigue, job burnout, and perceived workload (Wang & Suh, 2018; Shields, 2019; Hoşgör, 2021; Afzal et al., 2022; Abdulrahman, 2023; Özgür et al., 2023; Aladag & Altinpinar, 2023; Sapmaz, 2023), which can lead employees to feel overworked and underappreciated. Moreover, nomophobia contributes significantly to work-family conflict, impeding employees' ability to maintain a healthy work-life balance (Erdurmazlı et al., 2022). Although a few studies (Bülbüloğlu et al., 2020; Vitale et al., 2023) report no significant link between nomophobia and depression, the consensus remains that nomophobia induces a spectrum of adverse psychological effects including stress, anxiety, loneliness, emotional exhaustion, work-family conflict, and potentially depression.

Turning to the fifth research question, the implications of nomophobia extend beyond individual psychological effects to include detrimental impacts on organizational outcomes. Employees experiencing high levels of nomophobia often show decreased levels of organizational identification, passion, and dedication (Merdan & Erdem, 2022). It has also been noted that high nomophobia levels adversely affect employees' decision-making capabilities (Kapikiran et al., 2023), correlating with an increased likelihood of medical errors, thus undermining effective decision-making. Additionally, nomophobia is a notable cause of work interruptions and distractions, particularly noted among healthcare professionals, where it leads to considerable challenges (Wang & Suh, 2018; Bülbüloğlu et al., 2020; Afzal et al., 2022). The presence of nomophobia also significantly elevates the risk of errors in clinical settings (Lupo, 2020), highlighting its broad and detrimental effects on organizational efficiency and safety.

In exploring the effects of nomophobia on workplace dynamics, our findings challenge the hypothesis that heightened nomophobia enhances communication and networking capabilities. Instead, the evidence reveals no significant link between the severity of nomophobia among employees and their networking skills (Merdan & Erdem, 2022). This lack of correlation highlights the complex nature of nomophobia's impact on professional interactions. Further scrutiny into nomophobia's role in the workplace reveals mixed outcomes on work engagement and productivity. Some studies (Afzal et al., 2022; Daniel, 2022) indicate that nomophobia may lead to lower work engagement, citing distractions and interruptions from excessive smartphone use as contributing factors to diminished productivity and job dissatisfaction. Conversely, another perspective (Wang & Suh, 2018) suggests that employees with pronounced nomophobia levels might experience heightened work engagement, potentially boosting their productivity relative to their peers. This disparity points to a fragmented understanding of how nomophobia truly affects employee performance and underscores the need for more in-depth research to clarify these contradictory findings.

Regarding our last research question, studies underscore the significance of individual personality traits and illustrate that traits such as conscientiousness and emotional stability tend to be inversely related to nomophobia levels, indicating that employees who are more diligent and emotionally stable are less likely to experience anxiety related to smartphone separation (García-Masip et al., 2023; Uguz & Bacaksiz, 2022; Saidon et al., 2023). However, the relationship between nomophobia and other personality traits, including agreeableness, openness, and extraversion, presents a more complex picture. While some findings suggest a negative association between nomophobia and agreeableness (Uguz & Bacaksiz, 2022), other studies report no significant correlation (García-Masip et al., 2023). This inconsistency also extends to traits like extraversion and openness, where the results vary, showing both positive and negative impacts on nomophobia levels (García-Masip et al., 2023; Uguz & Bacaksiz, 2022).

Further research has enriched our understanding of the psychological dimensions influencing nomophobia. Notably, higher levels of life satisfaction have been correlated with lower instances of nomophobia (Karademir Coskun & Kaya, 2020; Özgür et al., 2023), suggesting that initiatives aimed at improving overall employee well-being could effectively reduce this modern workplace challenge. The element of self-efficacy is also pivotal; findings indicate that employees with strong self-efficacy are less affected by nomophobia, as they are better equipped to manage related anxieties (Anggoro & Handiyani, 2022). Additionally, the nature of workplace relationships plays a critical role in influencing nomophobia levels. A cooperative work environment has been identified as a beneficial factor in counteracting nomophobia and excessive smartphone use, which can otherwise decrease collaboration and increase feelings of isolation among staff (Olivencia-Carrión et al., 2018). This highlights the importance of fostering a supportive workplace culture to alleviate the effects of nomophobia.

These insights demonstrate the multifaceted approach needed to address nomophobia, emphasizing the interaction between personal psychological traits and organizational dynamics. By focusing on enhancing well-being and cultivating positive workplace environments, organizations can effectively mitigate the impact of nomophobia.

Limitation

This investigation offers valuable insights into the phenomenon of nomophobia; however, it is imperative to acknowledge several inherent limitations that may influence the interpretation of the findings. First, while the systematic review was designed to encompass a broad array of scholarly communications to mitigate publication bias, there remains a propensity for the academic publishing landscape to predominantly favor studies that report significant findings. This selection bias may inadvertently skew the synthesis of data and the conclusions drawn therein. Second, the methodologies employed across the studies reviewed exhibited considerable heterogeneity in the measurement of nomophobia, introducing variability that may compromise the generalizability of the results. The lack of standardized measures across studies poses a significant challenge to deriving uniform conclusions from the aggregated data. Lastly, the predominance of cross-sectional study designs within the corpus of literature reviewed restricts our capacity to infer causality between nomophobia and its psychological and organizational impacts. To overcome these limitations, future research should endeavor to include longitudinal studies that can better ascertain causative relationships and develop a consensus on measurement standards to enhance the reliability and comparability of findings across studies.

Interventions to mitigate nomophobia

Nomophobia leads to numerous repercussions for both employees and organizations, with a moderate to severe prevalence observed among employees. As technological advancements continue to proliferate, nomophobia is increasingly becoming a concern (Abdulrahman, 2023). To effectively tackle nomophobia among employees, it's essential to integrate diverse strategies. Psychological methods like mindfulness training and cognitive-behavioral therapy (CBT) have proven effective in reducing problematic smartphone use by enhancing self-awareness and improving stress management (King et al., 2013; Arpaci et al., 2019). Organizational policies that promote digital wellness, such as scheduled screen-free times and regular breaks, are equally crucial (Tams et al., 2018). Additionally, apps that monitor and limit phone usage offer practical tools for managing problematic smartphone use (Economides et al., 2018). However, the success of these interventions depends on their integration into a holistic approach that recognizes the multifaceted nature of nomophobia.

Moreover, implementing apps that limit smartphone usage and organizational policies that encourage digital detoxes and face-to-face interactions is critical for cultivating a culture of less problematic smartphone use (Ko et al., 2015). Workshops on digital wellness and effective time management also play a significant role in fostering healthier digital habits (Anrijs et al., 2018). This multidisciplinary approach highlights the need for targeted interventions that prioritize psychological health, responsible technology use, and supportive organizational cultures. As this field evolves, ongoing empirical research will be crucial in validating these strategies and ensuring they meet the diverse needs of workplace environments.

Future research

This study has highlighted several gaps and potential areas for further investigation. Addressing these areas will deepen our understanding of workplace nomophobia and help develop effective interventions. One key area needing attention is the development of longitudinal studies. Current research predominantly relies on cross-sectional designs, limiting our grasp of causality and long-term impacts. Longitudinal studies would enable us to track the development and progression of nomophobia over time, offering insights into its sustained effects on employee well-being and organizational productivity.

Given the varying impact of nomophobia across different professional settings, sector-specific research is necessary. Understanding how job characteristics, industry demands, and work environments influence the prevalence and impact of nomophobia will help tailor interventions to the specific needs of different sectors. Future studies should also include cross-cultural comparisons to explore how nomophobia manifests differently across cultural and regional contexts, enabling the development of culturally sensitive interventions that consider varying attitudes towards technology and work-life balance.

Moreover, the rapid evolution of technology continuously changes the nature of smartphone use. Future research should explore how emerging technologies such as wearables, augmented reality (AR), and virtual reality (VR) influence nomophobia. Additionally, examining the impact of new technological trends on workplace dynamics will provide valuable insights into managing nomophobia in modern work environments. Investigating the psychological mechanisms underlying nomophobia is another important area for future research. Studies should focus on how personality traits, cognitive biases, and emotional factors contribute to the development of nomophobia. Understanding these mechanisms can inform the creation of targeted psychological interventions.

As remote and hybrid working models become more prevalent, it is essential to examine their impact on nomophobia. Future studies should explore strategies for managing work-life integration to minimize the negative effects of constant connectivity and enhance overall well-being. The mixed findings on gender differences in nomophobia highlight the need for more nuanced research. Future studies should investigate how gender roles, societal expectations, and individual coping strategies influence nomophobia, leading to the development of gender-sensitive interventions.

Nomophobia is associated with various physical health issues, such as eye strain, musculoskeletal pain, and sleep disturbances (Fu et al., 2021). Future research should delve deeper into these health consequences and explore preventive measures that can be implemented in the workplace. Moreover, the influence of nomophobia on workplace collaboration and communication needs further exploration. Understanding its effects on team dynamics, leadership effectiveness, and organizational culture can provide insights into creating a more supportive and productive work environment.

Finally, future research should focus on developing and implementing organizational policies aimed at reducing nomophobia. This includes evaluating the impact of policies on digital detox, screen-free times, and promoting face-to-face interactions. Studies should assess the effectiveness of these policies in different organizational settings and their impact on employee productivity and well-being. By addressing these research gaps, future studies can significantly contribute to a comprehensive understanding of workplace nomophobia and the development of effective strategies to mitigate its adverse effects on employees and organizations.

Conclusion

This systematic literature review has brought to light the widespread issue of nomophobia in the workplace, showing its significant impact on both employee well-being and organizational productivity. Analyzing data from 15,009 observations across 36 studies, we identified the antecedents, symptoms, and consequences of nomophobia, including increased anxiety, work stress, and frequent interruptions. Our findings highlight the pressing need for interventions, such as psychological approaches, organizational policies promoting digital wellness, and technological solutions customized for specific sectors and cultural contexts. Future research should focus on longitudinal studies, empirical evaluations of interventions, and examining the impact of emerging technologies on nomophobia. Addressing these research gaps will contribute to a more comprehensive understanding of nomophobia and help develop effective strategies to mitigate its adverse effects on employees and organizations, ultimately promoting healthier digital habits and improving overall productivity in the digital age.

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Data availability This study does not involve the use of specific data, as it is based on a review of existing literature.

Declarations

Conflicts of interest The authors of this paper declare that they have no conflicts of interest related to this research. This research was conducted in an unbiased manner, and the authors have no financial, personal, or professional affiliations that could be perceived as influencing the research, analysis, or interpretation of the results presented in this article.

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