

Use of Mobile Phones and Its Relation to Sedentary Lifestyle and Psychosomatic Wellbeing among Elderly Individuals in Pune, Maharashtra: A Narrative Review

Dr. Shikha Paasi^{1*}, Dr. Bhagyashri Sonawadekar²

1 Associate Professor, TMV Jayantrao Tilak College Of Physiotherapy, Pune, Maharashtra, India

shikhavpassi@gmail.com

2 Assistant Professor, TMV Jayantrao Tilak College Of Physiotherapy, Pune, Maharashtra, India

Abstract: The rapid proliferation of mobile phone usage across all age groups, including the elderly population, has significantly altered lifestyle patterns and health behaviors. While mobile phones offer substantial benefits such as improved communication, access to health information, and enhanced independence, their excessive use has increasingly been associated with sedentary behavior and adverse psychosomatic outcomes (1,7). This narrative review aims to synthesize available evidence on the relationship between mobile phone use, sedentary lifestyle, and psychosomatic wellbeing among elderly individuals, with contextual relevance to Pune, Maharashtra.

A comprehensive literature search was conducted using databases such as PubMed, Google Scholar, and ScienceDirect. Studies examining mobile phone usage, physical activity levels, sedentary behavior, and psychological health outcomes in elderly populations were included. Evidence suggests that increased mobile phone use is associated with reduced physical activity levels and increased sedentary time (2,3). Additionally, excessive smartphone use has been linked with depression, anxiety, sleep disturbances, and reduced overall wellbeing in elderly individuals (7,8).

However, mobile phones also serve as important tools for social engagement, healthcare access, and cognitive stimulation, indicating a dual role (10). The findings highlight the need for balanced usage and targeted interventions to mitigate risks while enhancing benefits. This review underscores the importance of promoting digital literacy alongside active lifestyles among the elderly population in urban Indian settings.

Keywords: Elderly, Digital age, psychosomatic wellbeing, sedentary lifestyle, Pune

INTRODUCTION

The global increase in mobile phone usage has extended to elderly populations, driven by the need for communication, health monitoring, and social connectivity. In urban regions such as Pune, Maharashtra, rapid technological adoption has significantly influenced the daily routines of older adults. Mobile phones, particularly smartphones, have evolved into multifunctional devices that facilitate communication, provide entertainment, and enable access to health-related information, thereby becoming an integral part of daily life (10).

However, this increased reliance on mobile phones has coincided with a rise in sedentary behavior. Sedentary lifestyle, defined as prolonged sitting or engagement in low-energy activities such as screen usage, has been associated with adverse health outcomes including cardiovascular disease, obesity, and musculoskeletal disorders (1,6). Among the elderly, these effects are more pronounced due to age-related physiological decline and reduced functional capacity (4).

Furthermore, psychosomatic wellbeing—which encompasses both psychological and physical health—is increasingly influenced by patterns of technology use. Research indicates that excessive mobile phone use is associated with poor sleep quality, anxiety, and depression (7,8). Therefore, understanding the relationship between mobile phone use, sedentary behavior, and psychosomatic wellbeing is essential, particularly in rapidly urbanizing Indian cities.

NEED OF THE STUDY

India is currently undergoing a demographic transition characterized by a growing elderly population. Pune, as a major urban center with high levels of digital penetration, represents a unique setting where older adults are increasingly exposed to mobile technology. Despite the rising prevalence of smartphone use among elderly individuals, there is limited region-specific research examining its health implications. Most existing studies have been conducted in Western populations or younger age groups, thereby limiting their applicability to the Indian elderly context (2,3).

Additionally, lifestyle-related disorders such as hypertension, diabetes, and musculoskeletal conditions are highly prevalent among the elderly population in urban India. Sedentary behavior, often exacerbated by prolonged mobile phone use, may further contribute to the progression of these conditions (4,6). At the same time, psychosomatic issues such as loneliness, depression, and anxiety are emerging concerns, particularly among elderly individuals living independently. While mobile phones may help alleviate social isolation, excessive or maladaptive use can negatively impact mental health (7,9).

Therefore, this study is necessary to understand the dual impact of mobile phone usage, explore its association with sedentary lifestyle, examine psychosomatic consequences, and provide a foundation for preventive and rehabilitative strategies tailored to the elderly population.

METHODOLOGY

This narrative review was conducted using a comprehensive literature search strategy to identify relevant studies examining the relationship between mobile phone use, sedentary behavior, and psychosomatic wellbeing among elderly individuals. Electronic databases including PubMed, Google Scholar, ScienceDirect, and other open-access sources were systematically searched using keywords such as “mobile phone use elderly,” “smartphone addiction elderly,” “sedentary lifestyle and mobile phones,” and “psychosomatic wellbeing elderly smartphone.”

Studies were included if they focused on elderly populations aged 60 years and above, examined mobile phone or smartphone usage, and assessed outcomes related to physical activity, sedentary behavior, or psychosomatic health. Only peer-reviewed articles published in English were considered. Studies focusing exclusively on children or adolescents, non-peer-reviewed publications, and those unrelated to health outcomes were excluded.

Following the screening process, relevant studies were selected, and key findings were extracted and synthesized thematically, enabling a comprehensive understanding of the existing evidence and identification of research gaps.

STATISTICAL ANALYSIS

As a narrative review, this study did not involve primary data collection or independent statistical testing. Instead, it synthesized findings from previously published studies. The included research utilized validated tools such as the Smartphone Addiction Scale (SAS-SV), Physical Activity Scale for the Elderly (PASE), standardized depression and anxiety scales, and sleep quality indices (7,8).

Statistical methods in the reviewed studies primarily included correlation analysis, regression modeling, and comparative group analysis. Evidence indicates that elderly individuals with higher smartphone addiction scores demonstrate significantly lower physical activity levels and increased sedentary time (3). Similarly, significant associations have been reported between excessive smartphone use and psychological outcomes such as depression, anxiety, and poor sleep quality (7,8).

However, most studies are cross-sectional, limiting causal inference. Variations in methodology and measurement tools further affect comparability, highlighting the need for longitudinal studies with objective assessment techniques.

RESULTS

Evidence consistently suggests a positive association between mobile phone use and sedentary behavior; however, the directionality of this relationship remains unclear. Mobile-based activities are predominantly sedentary, contributing to prolonged sitting time (1). Increased smartphone use has been correlated with reduced physical activity and higher sedentary duration among older adults (2,3), which is particularly concerning given the vulnerability of this population to functional decline and chronic diseases (4,6).

Although these associations are well-documented, reliance on self-reported data and cross-sectional designs limits causal interpretation. It is uncertain whether mobile phone use directly promotes sedentary behavior or replaces other inactive activities. Nevertheless, higher smartphone dependency has been linked to reduced physical activity and impaired balance in elderly individuals (3).

Sedentary behavior associated with mobile phone use has important implications for physical health, including reduced mobility, musculoskeletal discomfort, and increased risk of chronic diseases (4,5,6). Screen-based sedentary activities may be particularly harmful due to prolonged uninterrupted sitting and lower energy expenditure (6). However, confounding factors such as lifestyle habits and comorbidities are often inadequately addressed.

Psychosomatic effects are equally significant. Excessive smartphone use has been associated with depression, anxiety, and poor sleep quality (7,8). Disruption of circadian rhythms due to prolonged screen exposure and emotional dependence on mobile devices may contribute to these outcomes. Furthermore, loneliness and depression may mediate this relationship, indicating a bidirectional association (9).

Conversely, mobile phones also provide substantial benefits, including enhanced social connectivity, access to healthcare, and improved independence (10). In urban settings like Pune, these advantages are particularly relevant in reducing social isolation among elderly individuals. Importantly, the impact of mobile phone use depends more on the nature of usage

than duration alone. Purposeful use, such as health applications and communication tools, may promote wellbeing, whereas passive use may be detrimental.

Despite growing global evidence, there is a lack of region-specific research in India. Cultural, socioeconomic, and technological factors unique to Indian settings may influence both usage patterns and health outcomes. Therefore, locally relevant research is essential.

Overall, mobile phone use among the elderly represents a complex, context-dependent phenomenon with both risks and benefits. Future research should focus on longitudinal designs and objective measurements to better understand causality and inform targeted interventions.

DISCUSSION

The findings of this narrative review highlight the complex and multidimensional relationship between mobile phone use, sedentary behavior, and psychosomatic wellbeing among elderly individuals. In recent years, smartphones have become deeply integrated into the daily lives of older adults, particularly in urban settings such as Pune, where digital accessibility and technological adoption are rapidly increasing. While mobile phones offer substantial benefits, including improved communication, access to healthcare information, and enhanced independence, their excessive and unregulated use may contribute to sedentary lifestyles and a range of associated health risks¹⁰.

A consistent observation across the reviewed literature is the positive association between smartphone use and sedentary behavior. Mobile phone activities, such as browsing, messaging, or consuming digital media, are inherently sedentary and often involve prolonged periods of sitting or physical inactivity¹. This pattern is particularly concerning among elderly individuals, who are already at an increased risk of reduced mobility and functional decline due to age-related physiological changes⁴. Studies have demonstrated that higher levels of smartphone use are correlated with lower levels of physical activity and increased sedentary time^{2,3}. However, despite this consistent association, the direction of causality remains unclear. The predominance of cross-sectional study designs limits the ability to determine whether excessive smartphone use leads to sedentary behavior or whether individuals with pre-existing sedentary lifestyles are more likely to engage in prolonged mobile phone use. This ambiguity highlights a critical gap in the current body of research and underscores the need for longitudinal studies that can better establish causal pathways³.

In addition to physical health implications, psychosomatic outcomes represent a significant dimension of this relationship. Psychosomatic wellbeing encompasses both mental and physical health, and the interaction between these domains is particularly important in elderly populations. Excessive smartphone use has been consistently associated with psychological issues such as anxiety, depression, and poor sleep quality^{7,8}. One plausible explanation for these associations is the disruption of circadian rhythms caused by prolonged exposure to blue light emitted from mobile screens, which can suppress melatonin production and impair sleep patterns⁸. Poor sleep quality, in turn, has been linked to increased risk of depression, cognitive decline, and reduced overall quality of life in elderly individuals.

Furthermore, emotional and behavioral dependence on smartphones may contribute to psychosomatic disturbances. The convenience and constant accessibility of mobile devices can lead to habitual or compulsive use, sometimes described as problematic smartphone use or behavioral addiction⁷. This form of dependency may reduce real-life social interactions and increase reliance on digital communication, potentially exacerbating feelings of loneliness and social isolation. Interestingly, loneliness itself has been identified as both a cause and a consequence of excessive smartphone use, indicating a bidirectional relationship. Evidence suggests that loneliness and depression may act as mediating factors between smartphone addiction and poor sleep quality, further complicating the interaction between technology use and psychosomatic health⁹.

At the same time, it is important to recognize that mobile phones also have the potential to positively influence psychosomatic wellbeing. For many elderly individuals, smartphones serve as valuable tools for maintaining social connections with family and friends, particularly in urban settings where traditional support systems may be weakened. Video calls, messaging applications, and social media platforms can help reduce feelings of isolation and promote emotional wellbeing¹⁰. Additionally, mobile phones provide access to health-related information, telemedicine services, medication reminders, and emergency support, all of which can enhance independence and quality of life. This dual role of mobile phones—as both a potential risk factor and a beneficial tool—highlights the importance of understanding not only the duration of use but also the purpose and context of smartphone engagement.

Another important consideration is the impact of sedentary behavior associated with mobile phone use on physical health outcomes. Prolonged sedentary time has been linked to increased risk of cardiovascular disease, metabolic disorders, and musculoskeletal problems^{1,6}. Among

elderly individuals, these risks are further amplified due to reduced physiological resilience and the presence of comorbid conditions. For example, prolonged sitting combined with poor posture during smartphone use can lead to musculoskeletal discomfort, particularly in the neck, shoulders, and upper limbs⁵. This may contribute to reduced mobility and increased risk of falls, which are major concerns in geriatric populations.

The Indian context introduces additional layers of complexity to this issue. Cultural, socioeconomic, and environmental factors play a significant role in shaping patterns of mobile phone use and their associated health outcomes. In urban areas like Pune, increasing nuclearization of families and migration of younger individuals for work have led to a growing number of elderly individuals living alone. In such situations, smartphones often serve as a primary means of communication and social interaction. However, variations in digital literacy among older adults may influence how effectively they use these devices. Limited familiarity with technology may lead to passive consumption of content rather than active engagement, potentially increasing sedentary behavior without providing the full benefits of digital connectivity.

Socioeconomic status also influences access to healthcare resources and opportunities for physical activity. Elderly individuals from higher socioeconomic backgrounds may have greater access to fitness facilities, healthcare services, and digital tools that promote active lifestyles, whereas those from lower socioeconomic groups may face barriers that increase their reliance on sedentary activities such as mobile phone use. Furthermore, environmental factors such as lack of safe outdoor spaces, traffic congestion, and pollution in urban areas may discourage physical activity, indirectly contributing to sedentary behavior.

Given these complexities, it is evident that a one-dimensional approach to addressing the impact of mobile phone use is insufficient. Instead, a comprehensive and context-specific strategy is required. Future research should prioritize longitudinal study designs that can establish causal relationships and provide deeper insights into the temporal dynamics of smartphone use, sedentary behavior, and psychosomatic health. The use of objective measurement tools, such as wearable activity trackers and digital usage monitoring applications, can enhance the accuracy and reliability of data, reducing the limitations associated with self-reported measures.

In terms of practical implications, interventions should focus on promoting balanced and purposeful smartphone use among elderly individuals. Digital literacy programs can play a crucial role in educating older adults about healthy usage patterns and encouraging the use of mobile phones for beneficial activities such as communication, health monitoring, and cognitive engagement. At the same time, strategies to reduce sedentary behavior should be emphasized, including regular physical activity, structured exercise programs, and behavioral interventions that encourage breaks from prolonged sitting. Healthcare professionals, caregivers, and community organizations can collaborate to develop and implement these interventions in a culturally appropriate manner.

In conclusion, the relationship between mobile phone use, sedentary behavior, and psychosomatic wellbeing among elderly individuals is complex, multifactorial, and context-dependent. While smartphones offer significant benefits, their excessive use may contribute to physical inactivity and adverse mental health outcomes. A balanced approach that maximizes the advantages of mobile technology while minimizing its risks is essential for promoting healthy aging in the digital era. Continued research and targeted interventions are necessary to address this emerging public health issue, particularly in rapidly urbanizing regions such as Pune.

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