

Correlation of Anxiety, Depression, and Socioeconomic Status with Phantom Vibration Syndrome in Healthy Individuals: A Review

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Abstract

The rapid advancement of digital technology has significantly transformed communication and daily living. Mobile phones have become indispensable tools for education, work, healthcare, and social interaction. However, excessive dependence on smartphones has resulted in the emergence of several technology-related psychological conditions, one of which is Phantom Vibration Syndrome (PVS). Phantom Vibration Syndrome refers to the false perception that a mobile phone is vibrating despite the absence of an actual vibration. Although not classified as a psychiatric disorder, this phenomenon has attracted considerable attention because of its possible relationship with anxiety, depression, stress, and excessive smartphone use.

The reviewed study investigated the correlation between anxiety, depression, socioeconomic status, and Phantom Vibration Syndrome among healthy individuals. The study employed a descriptive cross-sectional design involving 258 participants from medical, nursing, and arts colleges. Standardized assessment tools, including the Hamilton Anxiety Rating Scale, Hamilton Depression Rating Scale, and Modified Kuppaswamy Socioeconomic Status Scale, were used to evaluate participants. Statistical analysis revealed that approximately 34% of participants experienced phantom vibrations. A significant association was observed between Phantom Vibration Syndrome and anxiety as well as depression, whereas socioeconomic status did not demonstrate a statistically significant relationship with the condition.

Current literature suggests that excessive smartphone use may alter cognitive processing, increase psychological stress, disturb sleep patterns, and reduce overall mental well-being. Persistent anticipation of phone notifications may cause individuals to misinterpret normal sensory stimuli as phone vibrations. These findings emphasize the importance of promoting healthy digital behaviour, early identification of psychological symptoms, and mental health education among young adults and healthcare professionals.

Mental health nurses play a crucial role in identifying behavioural addictions, promoting stress management, providing counselling, and educating individuals regarding responsible smartphone usage. Further longitudinal and multicentre studies are recommended to understand the underlying neuropsychological mechanisms and to develop effective preventive strategies.

Keywords

Phantom Vibration Syndrome, Anxiety, Depression, Smartphone Addiction, Mobile Phone Overuse, Mental Health, Socioeconomic Status, Behavioural Addiction, Psychological Stress, Nursing.

Introduction

Digital technology has revolutionized modern society by making communication faster and more convenient than ever before. Smartphones have become an essential part of everyday life and are extensively used for communication, education, entertainment, banking, healthcare, and professional activities. Their widespread availability has improved accessibility to information but has also increased dependence on mobile devices. As smartphone use continues to rise, researchers have reported various psychological and behavioural consequences associated with excessive usage.

One emerging phenomenon related to smartphone overuse is Phantom Vibration Syndrome (PVS). Phantom Vibration Syndrome refers to the false sensation that a mobile phone is vibrating even when no vibration has actually occurred. Individuals often perceive this sensation while carrying their phones in pockets or bags and instinctively check their devices despite the absence of notifications. Although this condition is not officially recognized as a psychiatric disorder, it is increasingly regarded as a behavioural phenomenon associated with cognitive expectation, psychological stress, and habitual smartphone use.

Several studies have suggested that continuous anticipation of phone notifications alters sensory perception and cognitive processing. Repeated exposure to mobile phone alerts conditions the brain to expect frequent communication, leading to misinterpretation of ordinary tactile sensations as phone vibrations. This cognitive phenomenon is believed to involve heightened attention, conditioned responses, and psychological dependence on digital technology.

Anxiety and depression are among the most prevalent mental health conditions worldwide. Anxiety is characterized by excessive fear, nervousness, and persistent worry, whereas depression is characterized by prolonged sadness, loss of interest, fatigue, impaired concentration, and reduced motivation. Individuals experiencing anxiety or depression may become more sensitive to environmental stimuli and may exhibit increased dependence on mobile devices for reassurance, communication, or emotional support. Consequently, these psychological conditions may increase the likelihood of experiencing Phantom Vibration Syndrome.

The reviewed study examined the relationship between Phantom Vibration Syndrome, anxiety, depression, and socioeconomic status among healthy individuals. The findings demonstrated a statistically significant association between anxiety, depression, and Phantom Vibration Syndrome, whereas socioeconomic status showed no significant association. These findings highlight the importance of considering psychological well-being rather than demographic characteristics when addressing technology-related behavioural conditions.

From a nursing perspective, understanding Phantom Vibration Syndrome is increasingly important because healthcare professionals, nursing students, and young adults are among the most frequent smartphone users. Mental health nurses play a significant role in identifying behavioural addictions, promoting digital wellness, providing counselling, encouraging stress management techniques, and educating individuals regarding responsible smartphone use. Early identification of excessive smartphone dependence may help reduce psychological distress and improve overall mental health outcomes.

As digital technology continues to evolve, further research is necessary to explore the long-term psychological consequences of excessive smartphone use and to develop evidence-based interventions that promote healthier digital behaviours.

Objectives of the Review

General Objective

To review the correlation between anxiety, depression, and socioeconomic status with Phantom Vibration Syndrome among healthy individuals.

Specific Objectives

- To understand the concept of Phantom Vibration Syndrome.
- To review the prevalence of Phantom Vibration Syndrome among healthy individuals.
- To examine the relationship between anxiety and Phantom Vibration Syndrome.
- To determine the association between depression and Phantom Vibration Syndrome.
- To evaluate the influence of socioeconomic status on Phantom Vibration Syndrome.
- To identify the role of excessive smartphone, use in the development of Phantom Vibration Syndrome.
- To discuss the implications of Phantom Vibration Syndrome for mental health nursing practice.
- To identify gaps in the existing literature and suggest future research directions.

Methods

This review is primarily based on the uploaded research article titled "Correlation of Anxiety, Depression, and Socioeconomic Status with Phantom Vibration Syndrome in Healthy Individuals." The reviewed study employed a descriptive cross-sectional research design involving healthy participants from three educational institutions.

The researchers recruited 258 participants, including students from medical, nursing, and arts colleges. Ethical approval was obtained before data collection, and informed consent was taken from all participants. Participants completed structured questionnaires that collected demographic details, mobile phone usage patterns, and psychological assessment scales.

The following standardized instruments were used:

- Hamilton Anxiety Rating Scale (HAM-A)
- Hamilton Depression Rating Scale (HAM-D)
- Modified Kuppaswamy Socioeconomic Status Scale
- Mobile Phone Usage Questionnaire

The collected data were analysed using the Chi-square test to determine the association between Phantom Vibration Syndrome and anxiety, depression, and socioeconomic status.

Review of Literature

1. Overview of Phantom Vibration Syndrome

Phantom Vibration Syndrome (PVS) is the perception that a mobile phone is vibrating when no vibration has actually occurred. Individuals often experience this false sensation while carrying their phones in pockets or handbags. The condition is considered a behavioural phenomenon rather than a disease and has become increasingly common because of excessive smartphone dependence.

Research indicates that repeated exposure to mobile phone notifications conditions the brain to anticipate incoming calls or messages. As a result, harmless sensory stimuli such as muscle contractions or movement of clothing may be misinterpreted as phone vibrations. This phenomenon reflects changes in attention, sensory processing, and behavioural conditioning.

Young adults, healthcare professionals, and students appear particularly vulnerable because they use smartphones extensively for communication, education, and professional responsibilities.

2. Prevalence of Phantom Vibration Syndrome

The uploaded study reported that 34% of the participants experienced Phantom Vibration Syndrome. Participants who used their mobile phones more frequently reported phantom vibrations more often than those with lower usage patterns.

Previous research has also shown that Phantom Vibration Syndrome is highly prevalent among university students, healthcare workers, interns, and professionals who depend heavily on mobile communication. Increasing smartphone ownership worldwide suggests that the prevalence of this phenomenon may continue to rise.

3. Phantom Vibration Syndrome and Anxiety

Anxiety is characterised by persistent worry, fear, nervousness, and increased physiological arousal. Individuals with anxiety remain highly alert to environmental stimuli and frequently anticipate incoming communication.

The reviewed study demonstrated a statistically significant association between anxiety and Phantom Vibration Syndrome. Participants with moderate or severe anxiety experienced phantom vibrations more frequently than participants with normal anxiety scores.

One possible explanation is that anxious individuals constantly expect messages or phone calls, causing the brain to misinterpret ordinary sensory signals as mobile phone vibrations.

4. Phantom Vibration Syndrome and Depression

Depression affects mood, cognition, motivation, sleep, and social functioning. Excessive smartphone use has been associated with depressive symptoms, particularly among adolescents and young adults.

The reviewed study found a statistically significant relationship between depression and Phantom Vibration Syndrome. Participants experiencing depressive symptoms reported phantom vibrations more frequently than those without depression.

Depressed individuals often rely heavily on mobile devices for social interaction and emotional reassurance. Continuous anticipation of notifications may contribute to abnormal sensory perception.

5. Socioeconomic Status and Phantom Vibration Syndrome

Socioeconomic status influences education, occupation, income, and access to technology. The researchers hypothesised that lower socioeconomic status might predispose individuals to Phantom Vibration Syndrome.

However, the uploaded study did not find a statistically significant association between socioeconomic status and Phantom Vibration Syndrome. This suggests that the condition may be more closely related to psychological factors and patterns of smartphone use than to economic background.

6. Excessive Smartphone Use and Mental Health

Smartphones have become essential in modern life. While they improve communication and access to information, excessive usage may lead to psychological dependence, poor sleep quality, reduced concentration, anxiety, depression, stress, and behavioural addiction.

Frequent checking of mobile phones reinforces anticipation of notifications. Over time, this behavioural conditioning may increase the likelihood of Phantom Vibration Syndrome.

Mental health professionals increasingly recommend balanced smartphone usage, digital breaks, adequate sleep, physical activity, and stress-management techniques to reduce technology-related psychological problems.

Implications for Nursing Practice

Phantom Vibration Syndrome (PVS) is an emerging behavioural phenomenon associated with excessive smartphone use and psychological distress. Although it is not classified as a mental illness, nurses have an important role in recognising its psychological implications and promoting healthy digital behaviour.

1. Mental Health Assessment

Mental health nurses should assess patients for excessive smartphone use during routine psychological evaluation. Individuals presenting with anxiety, depression, stress, poor sleep quality, or behavioural addiction should be questioned about smartphone habits and experiences of phantom vibrations.

2. Health Education

Nurses should educate adolescents, college students, healthcare professionals, and the general public regarding the importance of responsible smartphone use. Educational programmes should include:

- Limiting unnecessary screen time
- Reducing dependence on smartphones
- Maintaining work-life balance
- Avoiding excessive checking of notifications
- Understanding the psychological effects of smartphone overuse

3. Stress Management

Stress is one of the contributing factors associated with Phantom Vibration Syndrome. Nurses should encourage stress-management techniques such as:

- Deep breathing exercises
- Meditation
- Yoga
- Progressive muscle relaxation
- Mindfulness practices
- Time management

These interventions can help reduce anxiety and improve psychological well-being.

4. Promotion of Healthy Sleep

Late-night smartphone use interferes with sleep quality due to prolonged exposure to blue light and continuous notification checking. Nurses should educate individuals regarding:

- Maintaining regular sleep schedules
- Avoiding smartphone use one hour before bedtime
- Switching off unnecessary notifications
- Keeping mobile phones away while sleeping
- Improved sleep hygiene contributes to better mental health and reduced psychological stress.

5. Counselling Services

Individuals who experience repeated phantom vibrations associated with anxiety or depression may benefit from counselling. Nurses should provide emotional support and refer individuals requiring specialised psychiatric care.

6. Community Mental Health

Community health nurses can organise awareness programmes in schools, colleges, workplaces, and hospitals regarding responsible smartphone use and digital wellness. These programmes may reduce behavioural addiction and improve overall mental health.

7. Nursing Education

Nursing students should receive education regarding technology-related behavioural disorders, including Phantom Vibration Syndrome. Understanding these conditions enables future nurses to recognise early symptoms and provide evidence-based care.

Future Directions

Although research on Phantom Vibration Syndrome has increased over the past decade, several knowledge gaps remain. Future research should focus on:

1. Longitudinal Studies

Most available studies use cross-sectional designs. Long-term studies are required to determine whether Phantom Vibration Syndrome persists over time or resolves with changes in smartphone usage.

2. Larger Sample Size

Future research should include participants from different age groups, occupations, and geographical regions to improve the generalisability of findings.

3. Neurobiological Mechanisms

Advanced neuroimaging studies may help explain how excessive smartphone use influences sensory processing and cognitive perception leading to phantom vibrations.

4. Intervention Studies

- Researchers should evaluate the effectiveness of interventions such as:
- Digital detox programmes
- Cognitive behavioural therapy
- Mindfulness-based stress reduction
- Smartphone usage monitoring applications
- Sleep hygiene education

5. Cross-Cultural Studies

Comparisons between different countries and cultures may help determine whether social, educational, or occupational factors influence the occurrence of Phantom Vibration Syndrome.

6. Nursing Research

More nursing research is needed to evaluate educational interventions aimed at promoting healthy smartphone habits among students, healthcare workers, and community populations.

Conclusion

Phantom Vibration Syndrome has emerged as an important behavioural phenomenon associated with excessive smartphone use. The reviewed study demonstrated that approximately one-third of healthy participants experienced phantom vibrations and found statistically significant associations with anxiety and depression, whereas socioeconomic status was not significantly associated with the syndrome.

Current evidence indicates that continuous smartphone exposure, psychological stress, anxiety, and depression contribute to altered sensory perception and anticipation of phone notifications. Although Phantom Vibration Syndrome is not currently recognised as a psychiatric disorder, it reflects changing patterns of human behaviour in the digital era and warrants further scientific investigation.

Mental health nurses have a vital role in promoting responsible smartphone use, identifying psychological distress, providing counselling, encouraging healthy coping strategies, and implementing mental health education programmes. Early recognition and timely intervention may reduce behavioural dependence on smartphones and improve psychological well-being.

Further multicentre longitudinal research is recommended to explore the neuropsychological mechanisms underlying Phantom Vibration Syndrome and to develop effective preventive and therapeutic strategies.

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