



## Smart Phone Addiction and its impact on Health

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### ABSTRACT

**Background:** Human Life is greatly exposed to the Mobile phones due to its widespread use lately. This has led to the development of health issues in the individuals using mobile phones for a long duration. This is due to the radiations emitted by the phones. **Methodology:** A systematic review was conducted using the popular PRISMA guidelines that allow us to categorically filter out the research articles giving us a clear picture of the issue under study. 126 research articles were selected out of which various filtering techniques were used and reduced to 6 articles. These articles were analyzed, paraphrased, and reported. **Results:** These studies revealed that use of mobile phones has a direct negative effect on the health of an individual. And the use of phones should be titrated based on the need and urgency. **Conclusion:** Mobile phones are of great help in many cases but its use and misuse must be kept in mind so as to be safe and protected from the potential hazards it has on our health.

**Key words:** *Smartphone, Mobile, Addiction, Impact, Health..*

### Introduction

Recently, tremendous developments in mobile phones have revolutionized the telecom industry by making telecommunication faster, economical, and more convenient. But, ultimately this has created havoc to the human beings. As mobile technology continues to expand the use of mobile phones has remarkably increased and become a basic need of daily life. A great deal is concentrated to comprehend the

effect of introduction to radio-frequency electromagnetic field (RF-EMF) radiation created by mobile phone base station towers (MPBSTs) on intellectual capacities..<sup>1</sup>

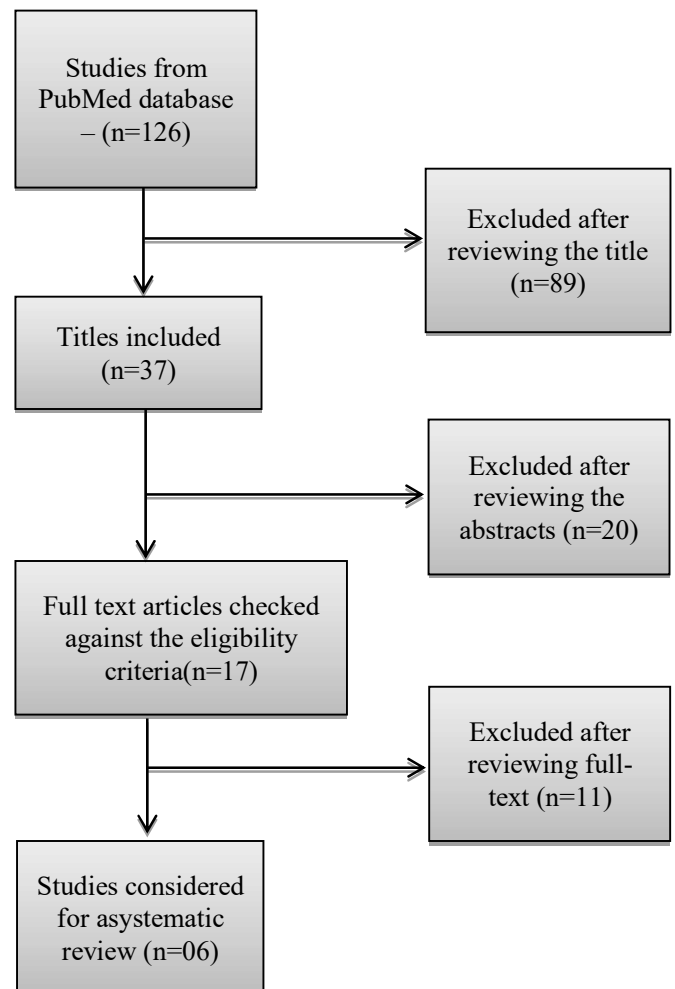
It is observed that the GSM signal operates at 900 MHz, 1800 MHz and 2250 MHz, may potentially cause harm to human tissue. A heated up phone during long calls is attributed to health problems.<sup>2</sup> Studies have shown that long-term exposure to mobile phone radiation can cause

inflammation in the liver and pancreas of albino rats.<sup>3</sup> The rapid advancement in technology has made many gadgets, a smartphone is one of them.<sup>4</sup> Individuals invest their energy almost certain via web-based media, work together messages, scholarly hunt, discovering answers to questions, and messing around. Right around 95 percent of Americans own phones and 77 percent own cell phones. Around the world, smartphones were used by 1.85 billion people in 2014 which is expected to be 2.32 billion in 2017 and 2.87 billion in 2020.<sup>5</sup> Such too much dependency makes us “Mobile addictive”. Cell phones make our carries on with simpler, however then again, it ties us. Versatile compulsion has physical impacts as well as mental and scholastics impact simultaneously. Sleep deficit, anxiety, stress, and depression which are all associated with internet abuse, have been related to mobile phone usage too.<sup>6</sup> All entities which can stimulate a person can be an addiction. Whenever a habit is converted into an obligation, it becomes an addiction.<sup>7</sup> Few researchers believe that smartphone usage and gender are not significantly associated.<sup>4</sup>

Excessive use of smartphone paired with negative attitude and feeling of

anxiety and dependency on gadgets may increase the risk of anxiety and depression.<sup>8</sup>

This review is conducted by reviewing articles using the selection criteria from Pubmed database from 2015 to 2020 on effects of Mobile phone usage on human health. Data was collected using the online search



**Fig 1: PRISMA guidelines**

The filtered articles were then reviewed by the reviewers for their content especially with the results. The Studies with irrelevant titles, unrelated abstracts and study designs were removed. Data was analyzed and results were reported using a narrative synthesis.

**RESULT**

Total 126 articles were identified by the review team using PRISMA Guidelines. A systematic review was conducted to find out the effects of mobile phones on human health. After a thorough review, six studies were extracted from the selected studies related to Mobile phone addiction and its effect on human health. These results of this study were reported using narrative synthesis and interpreted in the following table.

SN	Authors/ Years	Sample size	Outcome
1.	Kostoff RN, Heroux P, Aschner M, Tsatsakis A. (2020)	320	The nascent 5G mobile networking technology will affect not only the skin and eyes, as commonly believed, but will have adverse systemic effects as well. <sup>9</sup>
2.	Mireku MO, Barker MM, Mutz J, Dumontheil I, Thomas MS, Röösl M, Elliott P, Toledano MB. (2019)	6616	Night-time use of mobile phones was associated with lower health-related quality of life (HRQoL) among 11-12 year-old kids. <sup>10</sup>
3.	Volkmer SA, Lermer E. (2019)	461	Participants who use their mobile phones more often reported lower well-being, life satisfaction, and mindfulness scores. <sup>11</sup>
4.	Stiglic N, Viner RM.(2019)		A higher level of screen time is associated with a variety of health harms for human beings, with evidence strongest for adiposity, unhealthy diet, depressive symptoms and quality of life. <sup>12</sup>
5.	Yang X, Zhou Z, Liu Q, Fan C. (2019)	1258	Mobile phone addiction was positively associated with adolescents' anxiety and depression. In addition, the relationships between mobile phone addiction and both anxiety and depression were moderated by mindfulness, in that they were stronger for adolescents with lower levels of mindfulness. <sup>13</sup>
6.	Christopher B, Mary YS, Khandaker MU, Bradley DA, Chew MT, Jojo PJ. (2020)	27	There is a significant change on the hematological components. The exposed blood samples were found to display decrease in platelet count only. Hemoglobin level, ESR rate and the WBC counts were found to be increased. <sup>14</sup>

**Table 1: Systematic Review on Smartphone addiction and its impact on health**

Looking at the table it is clear that Mobile phones are dangerous if used for a longer period of time and can lead to serious health issues in human beings. The following table also speaks about the hazards that mobile phone addiction can lead to.

**Table 2: Adverse health effects of Wireless Radiation on Humans<sup>9</sup>**

Metabolic disturbances	Reactive oxygen species generation	Genotoxicity and carcinogenicity	Immunotoxicity and inflammation	Apoptosis and necrosis
Discomfort symptoms	Sensory disorders	Sleep disorders	Congenital abnormalities	Precancerous conditions
CANCER	NEURODEGENERATION	INFERTILITY	NEUROBEHAVIOUR	CARDIOVASCULAR

**DISCUSSION**

One school of thought reveals an indirect relation between cell phone usage and psychological health. They state young people use mobile phones around evening time, which prompts sleep deprivation. And insomnia ultimately results in depression, anxiety, and

depression. Cell phone addiction has no immediate connection to psychological well-being.. After reviewing these results, it is concluded that there is a relationship between cell phone addiction and adolescent's mental or physical health whether they have direct or indirect relation. We cannot neglect the relation and its adverse effects on adolescents. It is suggested that more studies should be done in this regard to clarify their nature of relations.<sup>15</sup>

**CONCLUSION**

It is confirmed that disturbed mental health and physical health is associated with cell phone addiction. Cell phone utilization gravely influences emotional well-being of teenagers and they look restless, discouraged and irate or here and there end it all. The self-destructive rate is expanding in this time. The use or overuse of mobile phones must be titrated based on their need or urgency. This may help us stay away from the harmful effects as discussed in this article.

**Conflict of interest** –Nil

**Source of finding** -Self

**Ethical clearance** – ethical clearance was obtained from Institute Research Committee of the College

**References (Vancouver's Style)**

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