



The Positive Impact of Smart Watches on Human Health (Mini Review)

¹DR RAJKIRAN TIKU, ²DR ARPITA RATHOD, ³DR BHUMIKA TIKU

¹PROFESSOR, ^{2,3} ASSOCIATE PROFESSOR

^{1,2,3} Department of Physiotherapy

TILAK MAHARASHTRA VIDYAPEETH DEEMED TO BE UNIVERSITY, PUNE

ABSTRACT

In the fast-paced, digital world we live in, smart watches have emerged as stylish accessories with the potential to significantly impact human health. These wearable devices offer a wide range of benefits, including internet access, calling, GPS navigation, and health monitoring capabilities. They are in high demand globally and find applications in various sectors, including healthcare, transportation, and electronics. Smart watches have the ability to track medical conditions such as cardiovascular disease and seizures, enabling self-monitoring of activity, providing feedback on activity levels, and facilitating communication with healthcare providers. Integration with the Geographic Information System (GIS) aids in disaster management, while applications can enhance bystander CPR by monitoring CPR frequency and depth. Despite their numerous benefits, smart watches also present challenges and potential negative impacts. They can promote sedentary behavior, distract users, disrupt sleep patterns, expose users to electromagnetic radiation, raise privacy concerns, and contribute to technology dependence and addiction. This paper will mainly focus on key benefits & negative impacts of smart watch on human health

Keywords:- smart watches, health monitoring, sedentary behavior, privacy concerns

Introduction:

Technology is becoming a necessary component of our everyday lives in this fast-paced, modern digital world. Smart watches have emerged as popular accessories that offer a wide range of benefits. These wearable devices are not only stylish and convenient, but they also have the potential to positively impact human health in numerous ways. Smart watches can revolutionize the way we monitor and manage our health, providing us with valuable insights and tools to make informed decisions. With features like internet access, calling, GPS navigation, and health monitoring, smart watches are in high demand globally. They find applications in various sectors, including healthcare, transportation, and electronics.¹ One of the key benefits of smart watches is their ability to track medical conditions and provide valuable health information. They can detect heart rate, blood pressure, footsteps, and other physiological data, helping to prevent various diseases such as cardiovascular disease and seizures. Smart watches enable self-monitoring of activity, feedback on activity levels, behavior pattern recognition, and communication with health care providers. Integration of smart watches with Geographic Information System (GIS) aids in disaster management for efficient rescue operations post-earthquakes. Additionally, smart watch applications can enhance bystander CPR by monitoring CPR frequency and depth, providing corrective feedback for effective CPR application.² The increasing demand for smart wearables is driven by their unique benefits, such as precise health data tracking and real-time information based on activities and locations. Smart watches promote health by enabling self-monitoring, receiving activity-based input, conducting surveys, and facilitating communication with healthcare providers. In healthcare, smart watches can detect health issues like seizures and alert caregivers in real time. Sensors in smart watches provide accurate body information, with accelerometry being a common data collection method. Communities can use smart watch data to establish health regulations. Utilizing health tracking features in smart watches predicts positive attitudes and intentions towards these devices, allowing users to actively monitor their health.³

Key benefits of smart watches for human health:4

1. **Activity tracking:** Smart watches come equipped with sensors that can track various aspects of your physical activity, such as steps taken, distance traveled, and calories burned. This can help you stay motivated to meet your daily activity goals and lead a more active lifestyle.
2. **Heart rate monitoring:** Many smart watches are equipped with heart rate monitors that can track your heart rate throughout the day. This can help you keep tabs on your cardiovascular health and identify any irregularities that may require medical attention.
3. **Sleep tracking:** Good quality sleep is essential for overall health and well-being. Smart watches can track your sleep patterns, including how long you sleep and the quality of your sleep. This information can help you identify factors that may be affecting your sleep and make adjustments to improve your sleep quality.

4. **Stress management:** Some smart watches are equipped with features that can help you manage stress, such as guided breathing exercises and relaxation techniques. By monitoring your stress levels and practicing stress-reducing activities, you can improve your overall mental and emotional well-being.
5. **Reminders and notifications:** Smart watches can send you reminders to take breaks, drink water, or move around throughout the day. They can also send notifications for incoming calls, messages, and appointments, helping you stay organized and on top of your schedule.
6. **Health monitoring:** In addition to tracking physical activity and heart rate, some smart watches can also monitor other health metrics, such as blood pressure, oxygen saturation, and even ECG readings. This can provide valuable insights into your overall health and help you detect potential health issues early on.

Challenges and potential negative impacts⁵

1. **Increased sedentary behavior:** Smart watches often encourage users to remain stationary for prolonged periods of time, as they can perform tasks such as answering calls, checking messages, and tracking fitness data without having to move. This can lead to a more sedentary lifestyle, which is associated with a range of health issues including obesity, cardiovascular disease, and musculoskeletal problems.
2. **Distraction and decreased focus:** Smart watches can be a constant source of distraction, as they constantly notify users of incoming messages, emails, and notifications. This can lead to decreased focus and productivity, as well as increased stress and anxiety.
3. **Sleep disturbances:** The blue light emitted by smart watches can disrupt the body's natural sleep-wake cycle, leading to difficulty falling asleep and poor sleep quality. Additionally, the constant notifications and alerts from smart watches can interrupt sleep and prevent users from getting a full night's rest.
4. **Radiation exposure:** Smart watches emit electromagnetic radiation, which has been linked to a range of health issues, including cancer, infertility, and neurological disorders. While the levels of radiation emitted by smart watches are generally considered to be safe, long-term exposure may still pose a risk to human health.
5. **Privacy concerns:** Smart watches collect a wealth of personal data, including fitness and health information, location data, and communication logs. This data can be vulnerable to hacking and unauthorized access, leading to potential privacy breaches and identity theft.
6. **Dependency and addiction:** Smart watches can create a dependency on technology, as users become reliant on them for communication, information, and entertainment. This can lead to addiction-like behaviors, such as constantly checking the device and feeling anxious or irritable when separated from it.

IN CONCLUSION

Smart watches represent a promising technological advancement with the potential to significantly impact human health and well-being. Their ability to track medical conditions, enable self-monitoring of activity, and provide valuable health insights makes them valuable tools in modern healthcare. However, challenges such as promoting sedentary behavior and privacy concerns must be addressed. With proper management and attention to these challenges, smart watches have the potential to revolutionize healthcare and improve the quality of life for millions of people.

Declaration by Authors

Conflict of Interest: The authors declare no conflict of interest.

REFERENCES :

1. Chandel, R., Sharma, S., Kaur, S., Singh, S., & Kumar, R. (2022). Smart watches: A review of evolution in the biomedical sector. *Materials Today: Proceedings*, 50, 1053-1066. <https://doi.org/10.1016/j.matpr.2021.07.460>
2. Deshmuk, N., Vaidya, S., Kahile, M., et al. (2022). Health at hand: A review of the importance of smart watches for healthcare. *Asian Journal of Biomedical and Pharmaceutical Sciences*,
3. <https://lnu.diva-portal.org/smash/get/diva2:1724753/FULLTEXT01.pdf>
4. <https://www.mycarolinallife.com/9-health-benefits-of-smart-watches-fitness-trackers/>
5. Side effects of smartwatches MindStick [https://www.mindstick.com/blog/side-effects-of-smart watch](https://www.mindstick.com/blog/side-effects-of-smart-watch)