

# SMARTWATCH EFFECTIVENESS IN PREVENTING NONCOMMUNICABLE DISEASES: INSIGHTS FROM A GOOGLE FORM SURVEY AMONG MEDICAL STUDENTS AT TASHKENT MEDICAL ACADEMY, UZBEKISTAN.

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## **Abstract**

Digital in medicine has revolutionised healthcare delivery with smart watches playing a significant role in monitoring and managing health. Smart watches are equipped with various sensors that can track vital signs, physical activity, sleep patterns and even detect irregularities in heart rate or rhythm, the data can be synced to mobile apps or cloud platforms for further analysis and interpretation by healthcare professionals.

## **Introduction**

Noncommunicable diseases such as cardiovascular diseases, diabetes and obesity pose a significant health burden. Globally, prevention strategies play a crucial role in reducing the prevalence of these diseases and improving overall health outcomes. Smart watches have emerged as a promising tool for promoting health and well-being. In the modern healthcare system, smart watches have the potential to enhance patient care and improve health outcomes. Also, can help individual who cannot communicate. These sensor and wearable technologies can inspire others to inculcate healthy patterns and lifestyle. Thanks to digitalisation and wearable technology.

## **Aim:**

The purpose of the study is to explore the effectiveness of smart watch and its impact on the lives of medical students, especially in the context of preventing noncommunicable diseases. Highlighting the potential benefits of integrating this technology into healthcare education and practice.

## **Keywords: -**

monitoring, smartwatch, wearable technology, health, physical activity, exercise, habits, medical students, non-communicable diseases.

## **Methods:**

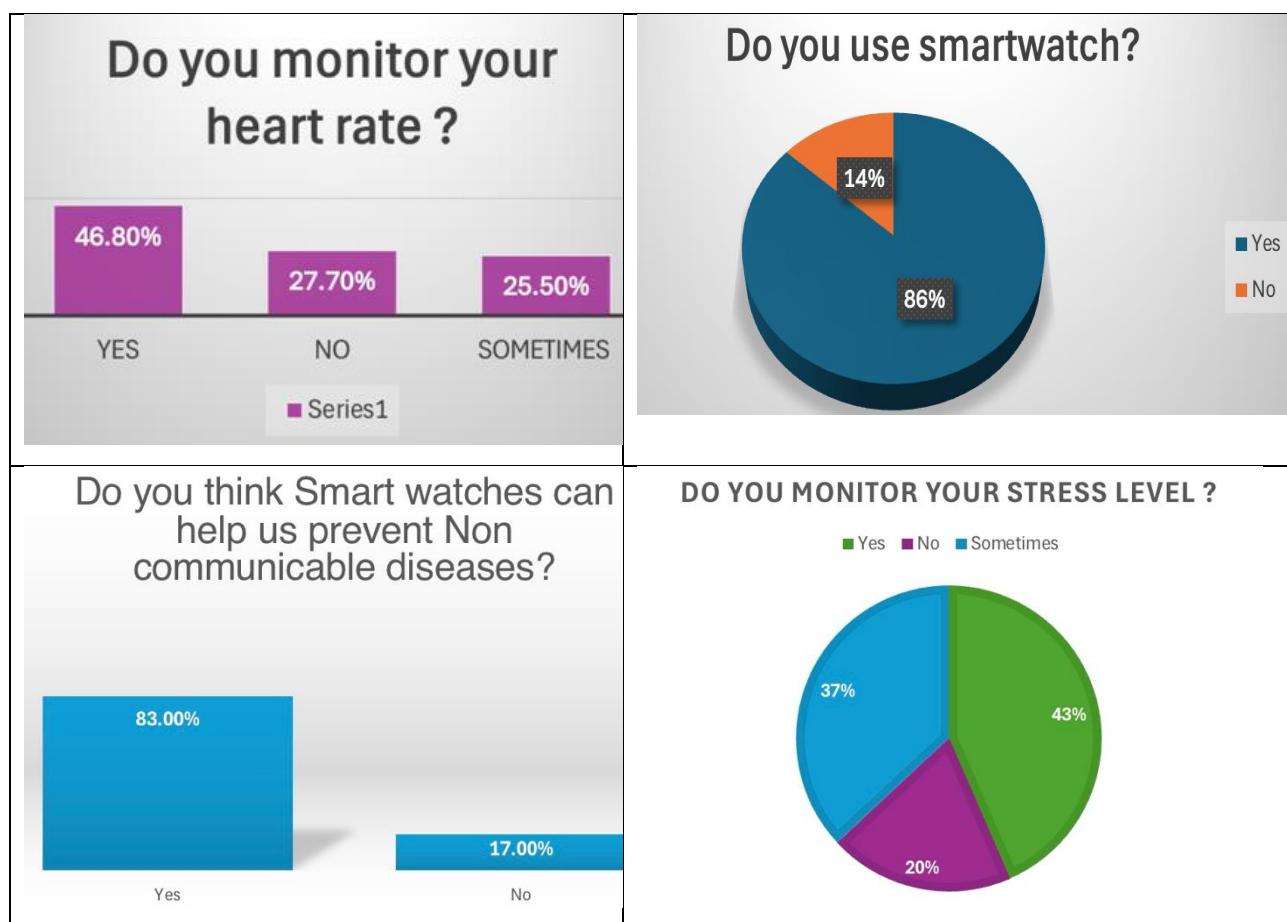
The target people of the survey were undergraduate medical students of international faculty, studying at Tashkent medical Academy, Uzbekistan. The study used an online Google form questionnaire as an instrument. And Microsoft Excel Sheet for analysis. Invitation to participate in the survey along with detail information was distributed through telegram and WhatsApp. The questions

in the developed questionnaire were based on socio-demographic variables, knowledge regarding non communicable diseases, activities, benefits of smartwatch.

**Results: -**

The survey was conducted using information and communication technology. Data based on the responses. The graphs below show the results of the survey.

In our survey, total number of participants were (n= 47). 36.5% males and 63.5% females participated. From 19 years old to 25 years old students participated. Out of which 61.7% students knew about non-communicable diseases. 86.4% students use smart watch. About 46.8% students monitor heart rate using smart watch. 52.2%, students monitored daily steps, 21.7% students do not count daily steps and 26.1% students sometimes monitor daily steps counts. 43.5% students even monitor stress level, 19.6% students do not and sometimes measure for 37%. 50% students set alarm or reminders while 32.6% students sometimes do, and 17.4% students do not send any alarm or reminder. Only 36.2% students count the calories intake while 46.8% Students sometime. About 17% of students don't track calorie count. 40.4%, students of read and watch programmes about improving health while 38.3% Student sometimes watch programs related to health. 42.6% students mention as they do not get enough sleep. about 29.8% students out daily while 14.9% students do not exercise. Surprisingly, 83% students think that smart watch can help us prevent non-communicable diseases.





**Conclusion: -**

Medical students are not excluded from the risk factors associated with noncommunicable diseases. Wearable devices have become indispensable tools for medical students offering real-time health, monitoring, promoting physical activity, enabling personalised data, analyses and enhancing self-awareness and well-being.

By using these devices, medical students can take proactive steps towards preventing noncommunicable diseases and maintaining a healthy lifestyle. However, it is important to recognise the limitations and ethical considerations associated with wearable devices such as data, privacy and accuracy. With proper utilisation and awareness, these devices have a potential to significantly impact the lives of medical students and contribute to the prevention of noncommunicable diseases.

**Recommendations: -**

**Real time health monitoring:** - wearable devices such as fitness, trackers, and smart watches, provide medical students with real-time health, monitoring capabilities. These devices can track various parameters like heart rate, spO2, ECG, body mass index (BMI), blood pressure, sleep, patterns, physical activity, and even stress levels, etc. By continuously monitoring this metrics, students can gain inside into their overall health and make necessary adjustments to their life status. This proactive approach to health management can help prevent noncommunicable diseases, identifying potential risk factors early.

**Promoting physical activity-** Sedentary lifestyles have become a growing concern contributing to the rise of noncommunicable diseases. Wearable devices act as personal fitness coaches, encouraging medical students to engage in regular physical activity activity. By promoting an active lifestyle, wearable devices help overcome the sedentary nature of studying and encourage students to prioritise their physical well-being.

**Reminder and alert systems: -** Smart watches can be programmed to send reminders for medication, schedules, hydration and regular breaks. Medical students can benefit from these

reminders to ensure they are taking care of their health, admit their demanding schedules by adhering to these reminders they can prevent the onset of health issues and maintain their overall well-being.

**Enhancing self-awareness and well-being:** - Wearable devices not only provide objective, health data, but also enhance self-awareness and well-being among medical students. By visualising the progress and achievements, students can feel motivated and empowered to maintain a healthy lifestyle. Additionally, wearable devices offer features like guided breathing exercise and mindfulness, Reminders, promoting mental well-being and stress reduction. This holistic approach to health management is crucial for medical students often face high-level of stress and burn out.

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