The Role of Wearable Devices in Cardiac Symptom Monitoring and Decision-Making Among the Saudi Public

Khalid A. Alnemer, MD* Meshal Alzakari, MD** Faisal Alzkari, MD** Abdulelah Almari, MD** Maan Almuzaini, MD** Mohammad Alabdulkareem, MD** Mohammed Habkari, MD** Ziyad Alsulami, MD** Rana Alqahtani, MD*** Muzun Saad Alqahtani, MD*** Reema Alqahtani, MD*** Thamer Almunif, MD** Salahuddin Khan, MD****

ABSTRACT

The process of screening and early detection of disease symptoms helps reduce such consequences. This study aims to examine the utilization profile of wearable devices in cardiac symptom monitoring and decision-making and their associated predictors among the Saudi Public. This is an online cross-sectional survey study that was conducted in Saudi Arabia between May and June 2025. The study population comprised adults aged 18 years or older, residing in Saudi Arabia, who utilize a wearable device or had knowledge of its functionality. Logistic regression analysis was conducted to predict significant factors influencing the total perception and trust score. A total of 808 participants were involved in this study. The most commonly used features of heart monitoring devices, 40.8% used heart rate tracking, 18.9% used blood oxygen monitoring, 13.4% used stress monitoring, and 23.6% used sleep monitoring. Around 36.1% reported regularly monitoring their heart health, primarily using wearable devices (19.7%), home devices (17.9%), or clinical visits (14.2%). Only 10.2% reported being advised by a specialist to use heart monitoring devices, yet 75.6% would recommend them to others. A total of 41.9% reported that they have received alerts of abnormal readings, and 7.9% rechecked the reading, while 5.0% visited a doctor. Moreover, many users felt a sense of control, with 11.4% always shared abnormal data with doctors. Regarding the Saudi public's awareness, 44.1% believed people are aware of the benefits, though a notable proportion remained unsure. Saudi nationals were significantly more likely to have higher perception and trust scores compared to non-Saudi (OR= 3.75, 95% CI: 1.03–13.69, p = 0.046). Students had significantly lower odds of perception and trust compared to those not working (OR = 0.33, 95% CI: 0.14–0.79, p = 0.013). Additionally, individuals with monthly income of 10,000-15,000 SAR and above 15,000 SAR had significantly lower odds of perception and trust scores compared to those earning less than 5,000 SAR (OR = 0.19, 95% CI: 0.06–0.63, p = 0.007; OR = 0.32, 95% CI: 0.11–0.96, p = 0.042, respectively. Saudi society is aware of wearable devices technologies and their health effects. This study also considered demographic factors that may affect device use. Saudis use technology, notably smart watches, and education, income, and device confidence were highlighted.

Keywords: Cardiac; Devices; Monitoring; Smart watch

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* Department of Internal Medicine
College of Medicine, Imam Mohammad Ibn Saud Islamic University (IMSIU)
Riyadh, Saudi Arabia, Email: Kaalnemer@imamu.edu.sa

** College of Medicine, Imam Mohammad Ibn Saud Islamic University (IMSIU)
Riyadh 13317, Saudi Arabia.

*** College of Medicine, King Khalid University
Abha, Saudi Arabia.

**** Department of Biochemistry, College of Medicine
Imam Mohammad Ibn Saud Islamic University (IMSIU)
Riyadh, Saudi Arabia.