

Association Between the Wearable Fitness Tracking Device Usage and Levels of Physical Activity among Undergraduates of the University of Moratuwa

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Introduction - Physical inactivity is a major modifiable risk factor for non-communicable diseases, particularly among young adults. With the increasing popularity of wearable health technologies such as smartwatches and fitness trackers, their potential to promote physical activity has gained interest. This study aimed to assess the association between wearable device use and physical activity levels, user perceptions, and barriers to adoption among undergraduates of the University of Moratuwa.

Materials and Methods - A descriptive cross-sectional study was conducted among 291 undergraduates at all five faculties of University of Moratuwa using a pre-tested, self-administered online questionnaire. Physical activity was assessed using the WHO Global Physical Activity Questionnaire. Participants who had used a device at least once in the last six months were classified as users, and of those who had used it daily or weekly during the past six months were classified as active users. Data was analyzed using IBM SPSS software. Associations were analysed using the Chi-square and Fisher's Exact tests among active users and non-users. Independent t-tests compared perceptions between users and non-users.

Results - Out of 255 valid responses (response rate 87.6%), 34.9% reported using wearable devices, with 25.9% classified as active users. Active wearable use was significantly associated with meeting WHO-recommended ≥ 600 MET-minutes/week value ($p < 0.05$). Device users reported higher motivation ($p < 0.001$) and greater trust ($p < 0.05$) toward wearables, while affordability emerged as the main barrier ($p < 0.001$). Privacy, navigation, and malfunction concerns showed no significance difference.

Discussion - Wearable device usage revealed a significant association with physical activity levels among undergraduates. However, adoption is limited by financial and motivational barriers. Improving accessibility and sustained engagement could strengthen their role in promoting active lifestyles and preventing NCDs. Context-specific strategies and further research are essential to optimize their use in Sri Lanka.

Keywords - Wearable devices, Physical activity, Smartwatches, Fitness Trackers, Undergraduates, Sri Lanka