

# Perception and Level of Acceptance of the General Population in Romania Regarding the Use of Wearable Devices for Health Monitoring

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## Abstract

**Background:** Wearable devices are increasingly promoted as tools for continuous health monitoring, disease prevention and patient empowerment. However, their successful implementation depends on population-level acceptance, digital literacy and perceived benefits and risks. This study aims to assess the perception and acceptance of wearable health devices among the general population in Romania. **Methods:** A questionnaire-based study was conducted using a 27-item instrument addressing demographics, digital behavior and familiarity with wearable devices, user experience, perceived advantages and disadvantages, acceptance and intention to use and potential interventions to increase adoption. Descriptive and correlational analyses were performed. Results are preliminary. **Results:** A high willingness to use wearable devices was observed, particularly for continuous health parameter monitoring (87.4%) and daily physical activity tracking (87.4%). Monitoring sleep quality (78.9%) and having easy access to personal health data (80.6%) were also highly valued functionalities. Wearable devices were perceived as beneficial for disease prevention (72.6%) and chronic disease management (71.4%). The main barriers to adoption included high cost (46.3%) and concerns regarding data accuracy (46.9%). Data privacy issues were reported as a moderate concern overall (35.4%), with female respondents exhibiting higher levels of concern compared to males ( $p=0.003$ ). Limited battery autonomy and potential negative psychological effects associated with continuous monitoring were also identified as relevant constraints. Higher familiarity with wearable technologies and a greater willingness to use them were associated with urban residence ( $p<0.001$ ). Additionally, familiarity with recent medical innovations was significantly higher among respondents from urban areas, including those residing in Bucharest, compared to rural participants ( $p=0.020$ ). **Conclusions:** Preliminary results suggest a favorable perception and strong acceptance of wearable health devices, particularly for monitoring and preventive functions. Addressing economic,



technical, and data protection concerns may further enhance adoption and support the integration of wearable technologies into digital health initiatives.

**Keywords:** Wearable devices; Health monitoring; Population perception; Technology acceptance; Digital health.