Privacy and Security Vulnerabilities of Wearable Wireless Sensors in Healthcare: A Systematic Literature Review and Research Gap Analysis*

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Abstract

Wearable Wireless Sensor Network (WWSN) users face privacy and security issues when they share their health data with health professionals. Data communication in WWSNs relies on wireless communication technologies such as Bluetooth, WiFi, cellular data, and the like. However, the information can be leaked due to security and privacy flaws in wireless connections. Many researchers have extensively examined such privacy and security issues. Based on those studies, various effective solutions have also been developed. This paper focuses on identifying the primary reasons that can make sharing health data through wireless communication technologies insecure. One of the aims of this work is to identify and analyze the research gaps in previously published studies. This paper employs a systematic review to collate and categorize literature on related privacy and security issues and the proposed solutions. Our study employs the PRISMA diagram as a screening process to identify the papers that are of significant relevance to the considered research questions. This work has identified the significant underlying reasons that can bring about privacy and security concerns in health data sharing that relies on wireless technologies. Moreover, it has highlighted the areas that need future examination and investigation to facilitate more widespread employment of wireless technologies in healthcare.

Keywords: Healthcare, Privacy and security, Systematic review, Wearable Sensors, Wireless communications.

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