Human Factors Influencing the Experience of Healthcare Professionals Using Digital Tools

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Abstract. Digitalization in healthcare has the potential to offer numerous advantages to various stakeholders, however, healthcare professionals often encounter difficulties while using digital tools. We conducted a qualitative analysis of published studies to examine the experience of clinicians using digital tools. Our findings revealed that human factors influence clinicians’ experiences and that integration of human factors into the design and development of healthcare technologies is of high importance to improve user experience and overall success.

Keywords. Digital health, health technology, decision support

1. Introduction

Digitalization is transforming healthcare and could benefit healthcare professionals (HCPs), patients, and other stakeholders. Nevertheless, it has potential risks and challenges [1]. Clinicians may encounter frustrating experiences when digital solutions are not designed to meet their needs or workflow requirements [2] which has led to increasing rates of clinician burnout and other work-related stress [3].

2. Methods

To understand the experiences of HCPs using digital tools, such as electronic medical records, and computer-based applications, we conducted a systematic literature review in accordance with the PRISMA guidelines. Our search spanned PubMed, Scopus, and Web of Science databases and was including studies that have been published from 2018 with a focus on hospital settings. “Experience in use” was defined as the use of technology in established workflows for healthcare interventions, such as diagnosis, assessment, treatment, monitoring, and prevention. We used keywords related to “digital tools”, “healthcare professionals”, “experience”, and “qualitative analysis”, for the search strategy. Two independent authors performed title, abstract, and full-text screening, data extraction, and thematic analysis, with a third author included for

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discussion to resolve disagreements. The CASP qualitative assessment checklist was used to evaluate study quality and validity.

3. Results

Out of the 1,175 identified studies, 32 were eligible based on title and abstract screening and 17 based on full-text screening. Our research revealed that the experience of HCPs is influenced by several factors, with one particular defined as “human factors”, including physical, sensory, emotional, and intellectual capabilities and limitations when using a system [4]. Human factors reference human emotions, behaviours, and cognitions related to the design, adoption, usage, and implementation of health technologies [5], and it is known, the success of digital is linked to the extent to which human factors are considered throughout design, development, and implementation [6]. Our research identified several human factors, including personal perceptions of system content, interdisciplinary and cross-level cooperation, trust and system understanding, cultural awareness, knowledge, skills, and social as well as organizational structures.

4. Discussion and Conclusions

Our findings emphasize the impact of human factors on HCPs’ experience using digital tools, as a lack of consideration of these factors has resulted in suboptimal experiences. While trust has garnered significant attention in current research [7], other human factors have been given less attention. Nevertheless, integrating human factors into the design and development of healthcare technologies, or at least, specific components and features would improve the overall experience and technology success. This systematic review sheds light on the impact of human factors on HCPs’ experience with using digital tools. The study revealed that a lack of consideration for these factors has resulted in suboptimal experiences and emphasized the importance of interacting human factors in the design and development of healthcare technology.

References