

the ultimate goal of EHR is to enable the exchange of medial information between healthcare providers, threats to security and privacy of patient health information increase because the data loses the protection standards applied by the medical institution when transferred to another institution [15]. Consequently, existence of appropriate policies and regulations and informed consent from patients could serve as protective factors against confidentiality concerns [61].

Although confidentiality concerns were reported to be a major obstacle to EHR in many literature reviews [2], [36], [57], [61], few studies investigated the association between confidentiality concerns and physicians' decision to accept and use EHR [15]. The study conducted by Steininger and Stiglbaue [15], which was conducted prior to EHR system implementation, showed that privacy concerns have a significant negative influence on both perceived usefulness and attitude toward EHR by physicians. Yoon et al. [62] showed that the availability of regulations to protect physicians from personal liability for record tampering by external parties or for privacy and security breaches was a facilitator to EHR adoption in Korean hospitals. Based on previous researches [15], [62], the present study proposes two dimensions to assess physicians' confidentiality concerns associated with EHR implementation: the level of data protection, and the level of physician protection from personal liability for privacy and security breaches.

4. Discussion

The main contribution of this study is the identification of key factors that are likely to influence primary healthcare physicians' acceptance of EHRs in the KSA and the casual relationships between those factors. While technology acceptance theories have provided high explanatory power in business and educational settings (e.g. [18]), the literature provides evidence that applying those theories in healthcare settings have provided limited explanatory power (e.g. [1], [23], [30], [31]). Thus, an integrated theoretical approach was recommended by many studies in order to improve the explanatory power [1], [23], [30], [32]. The framework proposed in this paper provides an integrative theoretical perspective that is based on theories and models of user acceptance of IT, prior theoretical models of physicians' adoption of EHR, and relevant research conducted in the KSA.

For theoretical frameworks explaining behavior change at the individual healthcare professional level, Eccles et al. [63] have defined three desirable attributes of such frameworks to be practically useful for implementation: (1) they should have proven effectiveness in predicting and explaining behavior change in other settings, (2) they should explain

behavior in terms of factors that are changeable (e.g., knowledge, beliefs, attitudes) rather than non-modifiable determinants (e.g., age, gender, intelligence) as such factors are difficult or impossible to change, and (3) they should include non-volitional components (i.e., they should assume that healthcare professionals working in a healthcare organization do not always have a complete control over their action and allow an examination of external factors, such as patient preferences or organizational barriers and facilitators, on their behavior). The proposed framework meets all these criteria. All factors have proven to be significant predictors of EHR acceptance in other healthcare settings [1], [14]–[16], [30], [32]–[35]. Also, all factors are changeable. The framework includes non-volitional components, particularly perceived threat to physician autonomy, confidentiality concerns, and physician participation.

The proposed framework provides an integrative view of acceptance factors important for the pre-implementation phase. Previous theoretical frameworks are limited in terms of providing an integrative view of acceptance factors. For example, most studies ignore organizational constraints (e.g. perceived threat to physician autonomy, physician participation) [1], [15], [30], [32], [33], individual constraints (e.g. computer self-efficacy) [16], [30], [33]–[35], legal constraints (e.g. confidentiality concerns) [1], [14], [16], [30], [32], [34], [35], or social factors [35]. The integrative view provided by the proposed framework will provide policy makers with key factors to focus on for the pre-implementation phase.

5. Conclusion

This research adds to the limited knowledge on change management for the pre-implementation phase of EHR systems. As all factors of the proposed framework have been validated in multiple studies internationally, the findings of this study will assist policy makers in the KSA to set a strong foundation for success and make transition to EHR systems run smoothly.

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