Understanding Technology Adoption and Use by Healthcare Professionals Using Models of Technology Acceptance and Q-Methdodology

Ladan Muhammad Awwal, Wharrad Heather and Windle Richard
School of Health Sciences, University of Nottingham

Background
Information and communication technologies (ICTs) and more specifically e-health are viewed as important tools within healthcare. They are used to support clinical activities such as interactions between healthcare professionals and patients, clinical self-development, patient education, routine clinical activities, and also have the potential to address many challenges affecting healthcare sectors globally. However, there is still limited information on how technologies are adopted and used within clinical practice by health professionals particularly in countries in Sub Saharan Africa (SSA).

Results:
Four perspectives/Factors emerged after By-person factor analysis. Crib sheets and agreement/disagreement statements were used in the interpretation in line with Q-methodology analysis.

Patient-focused e-health advocates
This has seven significantly loading participants and explains 13% of the study variance. It has an eigenvalue of 4.68. Five of the loading participants are physicians and two are nurses. There are two females and five males with an average age of 37.7 years (34-45 years).

Factor 3 has six significantly loading participants and explains 10% of the study variance. It has an eigenvalue of 3.6. Three of the participants are nurses and three are physicians. There are three females and three males within this Factor and they have an average age of 42.8 years (34-52 years).

Method
This study used models of technology acceptance (Technology Acceptance Model TAM) and Unified Theory of Acceptance and Use of Technology (UTAUT) together with Q-methdodology a methodology that explores subjectivity to understand the factors that influence ICT adoption among HCPs in clinical practice in SSA. Thirty-six participants were recruited and ranked 46 statements derived from the literature around e-health adoption and use and were organised around six combined themes of both the TAM and UTAUT, relating to their interaction with e-health in their clinical practice.

Traditionalistic e-health advocates
Factor 3 has six significantly loading participants and explains 10% of the study variance. It has an eigenvalue of 3.6. Three of the participants are nurses and three are physicians. There are three females and three males within this Factor and they have an average age of 42.8 years (34-52 years).

Task-focused e-health advocates
This has seven significantly loading participants and explains 13% of the study variance. It has an eigenvalue of 4.68. Five of the loading participants are physicians and two are nurses. There are two females and five males within this factor and have an average age of 42.6 years (33-54 years).

Tech-focused e-health advocates
Factor 4 has eight significantly loading participants and explains 15% of the study variance. It has an eigenvalue of 5.4. Five of the participants are nurses and three are physicians. There are four females and four males within this factor and they have an average age of 44.9 years (39-54 years).

Discussion
The patient-driven adopters suggests that the HCPs choice of e-health is influenced by the patient preferences to use it in their care (Trivedi et al., 2009). The task-driven adopters like in Hains et al. (2009), use the e-health resource only due to convenience and its ability to consolidate the information that they need. The traditionalist-pragmatists were similar to the HCPs captured by Hains et al. (2009) and Verhoefen et al. (2009) as clinically autonomous who don’t see e-health as part of routine clinical practice. The e-health champions look for opportunities to use e-health. Heir et al. (2004) and Joos et al. (2004) describe such HCPs as positive and efficient towards e-health adoption and use.

Conclusion
Using models of technology acceptance and Q methodology, the study explored issues influencing HCPs adoption and use of e-health in their clinical practice. HCPs prioritised statement samples based on how each statement influence their clinical practice. Findings suggest four different perspectives to the adoption and use of e-health resources in clinical practice by HCPs in SSA. These may help understand how they make their choices about e-health and suggest conceptual application in other similar settings. HCPs should be provided with both appropriate facilitating conditions and social support and should also share in decisions on e-health adoption and use in clinical practice. Hypothesis could be generated around these four factors to test application in wider a context for future studies.

References