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The Clinical User-Experience Evaluation (CUE) – a Novel Method to Understand Patient's Experience in a Clinical Trial of Telemedicine

Monday, June 26, 2017**06:30 PM - 08:00 PM** Hyatt Regency New Orleans - Elite Hall

Poster Board Number

1186

Research Objective:

The use of technology-enabled interventions such as telemedicine to monitor patients from home is on the increase with chronic diseases. Telemedicine technologies are often designed ad-hoc by IT developers but how patients interact and feel about using these technologies in the rollout phase is crucial because the effectiveness of a telemedicine treatment also depends on the interaction pattern between the technology and its users (patients). While clinical trials focus on assessing the effectiveness of telemedicine other study designs are needed to investigate patients' experiences with the technologies. We developed a novel qualitative methodology - the Clinical User-Experience Evaluation (CUE) - to complement a clinical trial, using evaluation methods from Human-Computer Interaction (HCI) discipline. The CUE was implemented within a telemedicine clinical trial of Type 2 Diabetes (T2D) in Townsville region in Queensland in Australia, conducted by the TMML (Townsville-Mackay Medicare Locals). The telemedicine trial consisted of a tablet equipped with a built-in app, a glucometer and a sphygmomanometer.

Study Design: We developed the CUE as a three-stage method. Stage 1 was a contextual inquiry that was performed *in-situ* at a patient's home. Patients used the tablet with the think-aloud method during this stage, during regularly scheduled times for using the technology. Stage 2 of CUE was a semi-structured qualitative inquiry to understand patients' experience and expectations including questions that arose during stage 1. Stage 3 was an online survey to verify some of our observations from the previous stages.

Population Studied: Nine T2D patients (four females, five males) volunteered to participate in the CUE. They were part of the 210 participants of TMML's telemedicine clinical trial.

Principal Findings:

Stage 1 found that the technology did not suffice all of the needs of patients; they additionally used pen and paper. Stage 2 found patients' emotions, perceived behavior change of using the technology, reasons to use or not use the technology in future. Stage 3 tested what patients thought about seven of our observations about them. A few important ones were that - patients were divided in their opinion about -contacting nurses about technology related problems, about changing the location of the technology in their homes and that they were informed about expressing their thoughts about the technology design even though the clinical trial was about their medical improvement. However, all patients agreed that talking with a HCI researcher was additionally valuable for them. Interviews with two nurses validated that CUE acquired additional knowledge than those from the trial.

Conclusions: : Evaluation of telemedicine technologies can benefit through evaluation methods like CUE in addition to clinical trials.

Implications for Policy or Practice: Some clinical trials are conducting a patient satisfaction survey only in the end and some additionally conduct qualitative studies. However, these are not done from a HCI perspective. The CUE uses HCI evaluation in a clinical trial understand the patients throughout the trial to find how patients feel and what matters to patients in a telemedicine technology and these findings provide guidance towards the modification of the technology or new technologies of telemedicine.

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