Integrating Usability Evaluations into the Design of an Internet Based Cognitive Remediation Program

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ABSTRACT

There has recently been a growing tendency to provide cognitive remediation programs using online therapy, however, the effectiveness of these internet-based cognitive remediation programs is expected to be affected by their usability [1]. In this paper, we address how various usability evaluation methods can be employed as part of the person-based approach to ensure that the internet interventions not only are feasible or acceptable, but also usable. We illustrate this by discussing how we used different usability evaluation methods at different stages of the design process.

In this regard, three usability studies were conducted to help improve the quality of design, create a highly usable program and increase the success of the online intervention. Domain and usability experts performed the first evaluation at the very beginning of the design process. The assessment was based on how to follow general design principles, and meet usability and user experience goals in the design process. Domain and usability experts worked together to have a consensus on interface design.

After completing the expert evaluation, eight patients and three therapists evaluated the usability of the program according to the given task. Data were collected through observations, exploratory qualitative interviews, and concurrent think-aloud methods. The participants were encouraged to say whatever came to their mind when they were working on the given task, which was visiting all the screens in the program and testing all the functions offered by the program.

The last evaluation, based on Nielsen's heuristics, was performed by 23 master students in Information science, and had the goal of identification and analysis of usability problems in the program. The participants were recruited from among students enrolled in a master-level Human-Computer Interaction course, to ensure that they had sufficient knowledge and experience concerning the evaluation of an online program with heuristics. They were also trained on how to use Nielsen's heuristics. Each heuristic item was explained in detail, building on relevant examples to help the participants identify usability problems accurately. The participants worked in groups of three to five, and each group independently examined the program, and evaluated it to report any usability problem they identified. When reporting the usability problems in detail, the participants were also asked to specify the severity rate of each problem. Following each usability evaluation study, the program was updated accordingly.

The person-based approach proposes the development of digital health interventions in four distinct stages; (1) planning, (2) design, (3) development and evaluation of acceptability and feasibility, and (4) implementation and trialing [2]. The internet-based cognitive remediation program mentioned in this study, was developed for depression treatment using the person-based approach in collaboration with patients, domain experts, and usability experts. The program is currently in the third

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stage of the approach. The planned next step is to undertake usability studies of the program with patients, and to perform a data-driven analysis based on the sampled patient-generated data in the "implementation and trialing" stage of the person-based approach.

In this poster submission, feedback gathered from the participants will be elaborated on the user interface of the program to demonstrate outcomes of each evaluation study and to discuss how to improve the usability of an internet intervention for mental health care employing various usability evaluation methods.

REFERENCES

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