Self-management Web Application for Persons with Schizophrenia

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Abstract: This paper describes a web-based application with the purpose of improving the self-management of people with schizophrenia. The main objective with the creation of a web application for mental health management was to provide easy and convenient access to resources, information, and tools that can help individuals manage their mental health issues more effectively and with greater autonomy. The application integrates different functionalities, such as stress management system, problem solving tools, medication control, symptoms monitoring and social interaction. In addition to self-management, the application facilitates interaction between the person with schizophrenia and the health professional through telemonitoring systems, reducing risks and increasing the patient's quality of life.

1 Introduction

Schizophrenia is a chronic mental disorder that affects the way a person thinks, feels, and behaves. It is characterized by symptoms such as delusions, hallucinations, difficulty concentrating, disorganized thinking, and emotional changes. Schizophrenia can have a significant impact on daily life and social relationships (National Institute of Mental Health, 2023). The prevalence of schizophrenia can vary depending on various factors, including geographical region, diagnostic criteria used and the populations studied2. The World Health Organization (WHO) estimates that the prevalence of schizophrenia ranges from 0.3% to 0.7% of the global population. This estimate encompasses different studies and research conducted in various regions of the world (National Institute of Mental Health, 2023). The association of schizophrenia with technology has been explored in various areas, including the use of digital technologies to assist in the diagnosis, treatment and continuous support of individuals with schizophrenia (Hoşgelen et al., 2020). The association of web applications with schizophrenia has been investigated in several studies, focusing on the potential benefits of web-based interventions for individuals with schizophrenia (Rotondi et al., 2010), (Almeida and Marques, 2022). These sources highlight the potential of web applications as a mean to provide support, psychoeducation and interventions for individuals with schizophrenia. They discuss the development and implementation of web-based platforms to improve access to information, services and social support for this population.

2 Methods

The collaboration between mental health professionals and informatics engineers drove the development of weCope, a web-based application. From an abstract perspective, the weCope system can be viewed as a collection of tools that can be used in psychotherapy through interactions between various stakeholders and interfaces. The weCope web platform uses a centralized server, enabling the registration and monitoring of patients' therapeutic progress through the therapist's interface. Furthermore, the weCope application aligns with the project's core philosophy of supporting the rehabilitation process for individuals with schizophrenia, offering a platform that aids in computer-assisted treatment. In other words, weCope provides a mean for patients to engage with their therapy course using computer-assisted tools, supporting their rehabilitation journey. The web platform consists of three modules, namely the administrator's interface, the therapist's interface and the patient´s interface, each serving different functions. The administrator interface provides administrators with tools to manage user accounts. This includes tasks such as registering new user accounts, updating incorrect or outdated information and managing the association between therapists and patients. The therapist's interface is designed for professional psychotherapists to interact with their patients. Through this interface, therapists can monitor and review their patients' inputs in the Daily Log, Objectives and Problem Solving modules. This allows therapists to gain a deeper understanding of each patient's challenges and goals, enabling them to tailor the therapy accordingly and improve the patient's overall quality of life. The patient´s interface provides individuals with schizophrenia with several useful functionalities for self-management of their condition, which can be accessed from the Main Menu (Figure 1). This modules include a Daily Log (Figure 2), Goals and Progress, Problem Solving (Figure 3), Chillout and sending messages to the Patient´s Therapist (Figure 4).

Figure 1: Patient interface main menu.

Figure 2: Symptom monitoring module exemple.
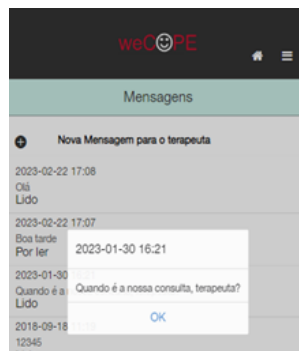

Figure 3: Problem solving module exemple.

Figure 4: Message exchange from Patient to Therapist module example.

3 Results

In a previous study carried out on the weCope application, it was found regarding usability that the majority of participants (45%) used the application two or three times a week and recognized the modules "Goals", "Relaxation" and "Messages with the therapist" being the most used by them. The participants' view regarding the browsing experience, visual aesthetics, and learning process with weCope was favorable. Participants were satisfied with the weCope system, considering the application useful for disease management (89%) and 78% said they

would continue using the application (Almeida et al., 2019). In another previous study analyzing the weCope application, the results achieved with the use of a usability survey for therapists and patients showed general approval of the user interfaces (Almeida et al., 2017).

4 Conclusion

Empowering patients to manage their illness is crucial for regaining control and fostering a collaborative relationship with healthcare professionals. New self-management technologies have the potential to transform the healthcare experience, including health symptoms and recovery progress. The positive feedback from participants highlights weCope's user-friendliness and empowerment potential. Notably, 89% found it useful for managing their condition, with 78% intending to continue usage. In a separate study involving therapists and patients, the application received widespread approval, reflecting the broader acceptance of self-management technologies like weCope in healthcare. These findings underscore their role as valuable tools for enhancing patient-provider collaboration.

Acknowledgements

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