

Social Anxiety Mobile Application to Enhance University Psychological Services

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Abstract

Social anxiety is a persistent and extremely debilitating anxiety disorder that has a profound negative impact on quality of life, relationships, and social functioning. There is evidence that suggest social anxiety prevalence among university students, which is preoccupying since this disorder is associated with premature school dropout and academic underachievement. University Psychological Services has played an important role in helping students suffering from mental health. Nevertheless, scientific research indicate that traditional therapies can be enhanced using technology devices such as, for example, smartphones and its software applications. A mobile application is being developed in Higher Education settings, and its main goal is to enhance current face-to-face Cognitive Behavioral Therapy, by improving engagement and adherence to treatment in students with Social Anxiety Disorder. This application includes novel features, which can become valuable resources for both the patient and the therapist. The present study addresses the initial steps of this mobile application construction regarding main features and theoretical considerations based in scientific evidence. In future studies, we intend to include design considerations and evaluate the efficacy of this mobile application.

Keywords: Social anxiety; Mental health; Traditional therapy; Disorder

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Introduction

Social anxiety is an extremely debilitating anxiety disorder, marked by an excessive fear of negative evaluation in social situations [1]. There are studies that suggest the prevalence of social anxiety among university students [2,3], which is preoccupying since this disorder is frequently associated with the tendency to premature school dropout and academic underachievement [4,5]. This disorder has also a profound negative impact on quality of life, social functioning, family life and relationships [4]. So, it is of extreme importance to develop interventions that support more efficiently students with social anxiety, especially, in educational settings, to prevent premature school dropout. University Psychological Services emerged to promote mental health among university students, and typically delivers traditional face-to-face therapy. Particularly, Portuguese university psychological services exhibit frequently long waiting lists and few human resources [6].

Cognitive behavioral therapy for social anxiety

Regarding the treatment of social anxiety, Cognitive Behavioral Therapy (CBT) is considered the most effective therapeutic

approach [7-9]. Clough et al. [10] indicate that although traditional therapies show perceived success, there is still a need for improvement, factors such as poor engagement, patient dropout, and homework compliance, may reduce the effectiveness and success of treatment. Specifically, homework assignments between sessions are a core ingredient in CBT, and may influence treatment outcome [7]. They contribute to evaluate a patient progress and to better manage treatment, in current traditional therapy this is made with pen and paper, which can be very inconvenient and may keep patients from adhering to treatment [11]. Lebeau et al. [12] suggests that improving homework compliance may potentially be a highly practical and effective way to improve clinical outcomes in CBT.

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Technology based interventions

Technology based interventions may help traditional therapy overcome certain limitations, by offering new, appealing, interactive, and innovative ways to deliver treatment, especially for young university students, that are very comfortable with technologies such as computers and smartphones, and use them frequently [13,14]. Mobile technologies, particularly smartphones, with its great compute capacity and the advantage of mobility will allow the user a fast, efficient, appealing, and accessible contact to the information, through software applications [14]. According to Clough et al. [16] smartphones may be able to enhance considerably face-to-face therapies, offering many advantages to researchers and clinicians. Effectively, over time there has been an increased interest of academics and clinicians regarding mobile phone as a potential mean of delivery of behavior and health interventions [17] and to enhance existing psychological services [18,19]. Internet based treatment could motivate individuals with social anxiety to seek help since they may feel less embarrassed and feel less under scrutiny [5].

Technology based CBT for social anxiety

Technology assisted psychological interventions were developed in order to increase treatment efficacy and overcome certain barriers regarding access, acceptance and implementation of existing treatments [20]. CBT is a very structured intervention and typically implemented in a sequential format, and so it is considered well suited for the delivery of technology based treatment [21]. Several studies suggest the efficacy of technology based CBT for social anxiety [20] and the same happens for mobile technologies [22-24], even though studies in this field for social anxiety are still very few. There are also studies that suggest ICBT superiority over other therapies based on technology, such as Acceptance and Commitment Therapy and Interpersonal Therapy [22,24]. There are also very few studies in this area with young adults, even though they are known to adhere more easily to new technologies, such as smartphones [17,25].

Research about the efficacy of technology based interventions are very common, however, few studies explored the role of technology as an adjunct to traditional therapy. A study involving people suffering from major depression, concluded that a blended treatment approach may treat nearly twice as many patients by using a smartphone application as add-on [25]. Given the research conducted we consider of extreme importance the development of a mobile application as an adjunct to therapy, in university settings, that will support not only the patient, but also the therapist. Particularly in Portugal, to our knowledge there is no published study that evaluates the efficacy of a mobile application for social anxiety, as an adjunct to CBT intervention for university students attending University Psychological Support Services. So, our main goal is to contribute to this area by developing a prototype of the app that will facilitate the success of the psychotherapeutic intervention, by promoting an increased engagement and adherence of patients to treatment. We also expect this application to serve as a valuable tool for the therapist, allowing him to better manage his interventions/appointments.

Social Anxiety Mobile Application

General description

A mobile application is being developed for university students, with social anxiety, attending University Psychological Support Services. The app is going to function, between sessions, as an adjunct to traditional face-to-face CBT, and its main goal is to enhance social anxiety treatment, by increasing patient engagement and adherence to homework and therapy in general. In the present moment, developing this exploratory version, there are two teams leading the project, one team of psychologists and the other one of electronic engineers, specialized in mobile computing. The latter, are now on the process of building the mobile app. The team of psychologist are now interviewing therapists and patients to better consolidate and decide feature preferences and content that will be introduced in the application.

Structure of the mobile application

After regular first sessions proceedings, like for example evaluation, and an established diagnostic of social anxiety, the therapist will provide an access key to the patient, that will allow him to access the application. The patient will acquire the application, that will be available in the mobile application store, and then after installing and signing in with the access key, the patient has immediate access to the content of the application.

Structurally, the content integrating the application will be divided by modules, that will be given access to the patient as he progresses in treatment. This application will be structured according to CBT protocol for social anxiety. The main modules include, psychoeducation; registration of thoughts, emotions, and behaviors; relaxation techniques; social skills training and exposure exercises.

a) Psychoeducation module: In this module, the patient will be provided with videos addressing social anxiety psychoeducation.

b) Registration of thoughts, emotions, and behaviors module: Patients will be able to register their thoughts, emotions and behaviors through text or audio regarding their day-to-day most relevant social interactions.

c) Relaxation Techniques module: This module will include audios and videos of relaxation techniques. That is, it will have a video explaining abdominal breathing, and audios guiding through a progressive muscular relaxation (PMR). This module will allow the patient to practice consistently PMR, so he can later move on to applied relaxation, this is a combination of general techniques of PMR and gradual exposure to feared situations [27] to help individual effectively cope with anxiety-evoking situations [28]. The applied relaxation will probably be applicable when exposure module is enabled.

d) Cognitive restructuring module: In cognitive restructuring the therapist works with the patient to identify negative automatic thoughts, and then they work on the validity of the patient's belief system, this will allow the patients to modify their habitual negative beliefs of social situations [7]. This module will provide patients with content about negative automatic thoughts, and

encourage them, between sessions, to regularly make a list of these thoughts as they arise. Given the content and what he learned in therapy, the patient will then be encouraged to challenge these negative thoughts.

e) Social skills training module: Social skills training typically involves teaching and practicing social skills, this is accomplished with a combination of modeling, behavioral rehearsal, corrective feedback, and positive reinforcement [27]. The main goal of this module is to reinforce social skills acquired in session. Consequently, the therapist will configure this module with exercises given in session, and then ask the patient to practice between sessions, guided by the app.

f) Exposure module:

a) Registration of the most feared situations: Exposure begins by creating a rank-ordered list of the most anxiety-evoking social situations. This module allows the patient to make this list between sessions, and then in posterior sessions this list and related details, may be discussed with the therapist.

b) Exposure diary: This module will also allow the patient to record just about everything about their experience related to exposure exercises.

These modules will be sequential, although modules a), b) and c) will probably be provided to the patient after his first access to the application. The modules may be reconfigured and customized, by the therapist, throughout the intervention. In sessions, the application will allow the patient to review with the therapist the information he registered, and discuss main difficulties. He will also be able to self-select goals, and track his achievements through the application. This is, in the end of therapy, both therapist and patient may elaborate simple and realistic goals, related to the module in progress, that may be achieved until the next session. For example, until the next session, the patient is encouraged to listen to relaxation exercises at least 4 times in a week, one time each day. Every time he accomplishes an assignment, it will be registered in the application, and so he can track his achievements.

Main features

As already mentioned, the application will include text, videos, and audios. We intend to make our own videos and audios, for example, we plan to make a video demonstrating abdominal breathing, and a few records guiding through a progressive muscular relaxation. Text is a normal and simple feature, that we plan to use it frequently, because it can blend more naturally in a public setting.

Notifications are another feature inherent to this application. Patients will be regularly reminded and invited to access the app, and practice recommended exercises. We are developing a set of specific notifications for each module and simple notifications for the app in general. These notifications will include specific reminders, for example, if the patient haven't accessed the app in 4 days, a notification will be send inviting him to use the app. This feature is something that must be discussed with the patient as he can find notifications intrusive. Specific content of the notifications need to be subtle and objective, so that no one may identify the individual as a patient, just by the notifications.

Privacy is something that we plan to refine extensively in this application, transmitting security and confidentiality along the therapeutic process. Patients will only have access to this application with an access key, and only be identified by the app system with a number or a user name created by them.

Another main feature, and in our perspective one of the most important and unique, is the therapist platform. This is a platform that will be constantly connected to the application, and will receive instantly all the information that the patient registers in the application. The therapist will also have access to the information regarding how many times the application was accessed during each day, and if the patient used the app. Electronic engineers are working on an application feature that allows the therapist to know if the patient accessed the application content, and engaged attentively.

Overview of Main Advantages for Patients and Therapists

From the patient perspective, the main goal of this app is to turn CBT exercises between sessions more appealing and interactive, and so promoting greater patient adherence to homework. This is a very important component of CBT, where the patient practices CBT exercises, between sessions, recommended by the therapist. Therefore, patients will be regularly reminded, through notifications, to use the application and they will be guided by the app when doing the exercises. Therefore, we expect that they will more frequently do homework assignments and practice more of these exercises. Consequently, everything they learned in previous sessions will be reinforced, allowing them to better develop their skills to be independent and autonomous when practicing these exercises in their day-to-day lives. This may lead to more productive sessions, a more intensive and deeper intervention, and may also reduce the number of sessions stipulated for the intervention.

From the therapist point of view there will be a considerable advantage for treatment, especially because there will be instantaneous access to the information that the patient provides through the app. This will allow the therapist to better prepare the next sessions and to better manage the therapeutic session, he will not occupy more time by doing homework with the patient in session, or reviewing other CBT exercises given in earlier appointments. This will also provide the therapist with real context information from the patient, and so it will give him more instant and reliable information to discuss in the next session. By better organizing and managing his interventions, the therapist will save time and give more use of the time given to previous sessions. We consider that these advantages may lead to improvement of treatment efficacy.

Conclusion

We believe that an application of this nature would be an asset to psychological services, particularly in Portuguese University Psychological Support Services, where waiting lists are frequently long, and human resources are scarce [6]. Social anxiety is a persistent and very debilitating disorder that has tremendous negative impact, especially in young university students who wish to thrive in an academic context.

The present study, is in its preliminary phase, where a team of psychologists and electronic engineers, are creating a prototype of this mobile application. This will be a novel device that intends to be of extreme valuable to patients and therapists, where information is gathered and given in an efficient and practical

way. Further studies will be needed to continuously improve this mobile application, and to determine its efficacy.

Conflicts of Interest

The authors have no conflicts of interest to report.

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