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## Recording Thoughts for Mental Health Therapy

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I hereby declare that this dissertation is all my own work, except as  
indicated in the text:

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# **Recording Thoughts for Mental Health Therapy**

**Umar Saghir**

## **Abstract**

Abstract

## **Acknowledgements**

Acknowledgements

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# **1 Introduction**

## **1.1 Background**

It is human nature to be constantly thinking and processing information and the world around us; we think about things like our past, our future, our environment and the people around us all of the time, and this can occur consciously and subconsciously. Many of the the things we think about come to us automatically (therefore these occur subconsciously), and the resulting actions we perform and emotions we experience are determined by these thoughts. As stated by (Ogilvie n.d.), the causes for these thoughts are due to our deeply rooted personal belief systems and opinions which have been formed from all of the experiences we have had, and these give us meaning to all of the things we think about, ultimately determining our reality.

If this is the case, a positive or negative automatic thought can cause a same respective reaction. A Negative Automatic Thought (“or NAT”) is a subconscious thought that occurs in response to everyday events. These thoughts are irrational, self-defeating (Cuncic 2019) and have a direct negative impact on us. The problem is that we do not do anything about these thoughts, and there are many reasons for this. One reason being that we find them too difficult to explain to anyone or even ourselves, so we choose to just dismiss them. Another reason may be that we get so accustomed to them that we begin to not pay attention to them instead of dealing with them; and this is where it can become problematic as the reoccurrence of NATs is where the mental health of an individual can be affected,

leading to low moods, irritability and conditions such as anxiety<sup>1</sup> and depression<sup>2</sup> (Dictionary n.d.).

In order to combat these thoughts an established technique used by therapists is *Cognitive Behavior Therapy*, which is a talking therapy that can help you manage your problems by changing the way you think and behave. It very much focuses on your present problems rather than issues from your past (NHS 2016). The affected person is asked to write down their negative thoughts and the emotions and scenarios that were associated with them. This technique is further discussed in the report (see *Related Work*).

As one can conclude, addressing NATs is paramount in achieving healthy living and a happy state of mind. We need to make the therapy process as efficient and convenient to help achieve this.

## 1.2 Motivation

The supervisor for this project Julie Greensmith showcased a current written therapy process used by a psychologist which systematically asks questions to the affected person about their thoughts and emotions to help them focus on determining why they may be experiencing them.

We acknowledged that this method could be changed and improved by digitizing it into a mobile application form, which would make the recording and tracking process more convenient as well as simplifying the management of their thoughts. It would also limit the potential to forget the thoughts a person experi-

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<sup>1</sup>An uncomfortable feeling of nervousness or worry about something that is happening or might happen in the future.

<sup>2</sup>A mental illness in which a person is very unhappy and anxious (= worried and nervous) for long periods and cannot have a normal life during these periods.

ences as they would be more inclined to record them as and when they occur.

After conducting initial research it became apparent that myself was very interested in this subject in regards to the psychology aspect, as well as how it could benefit a lot of people in their daily lives, not to mention diagnosed mental health sufferers.

## **1.3 Vision**

### **1.3.1 Aims and Objectives**

#### **Aims**

The aim of this project is to design and implement a prototype for a mobile application which would transform a current, written mental health therapy technique into a digital version.

#### **Objectives**

The *key objectives* are thus:

1. Research around the subject of cognitive mental health therapy
2. Research and compare alternative mental health therapy digital applications
3. Research high fidelity prototyping software/tools
4. Design low and high fidelity prototypes
5. Learn how to implement database within chosen prototyping tool
6. Implement a basic prototype of the application
7. Get real potential users to test the prototype and report the feedback
8. Implement necessary changes from feedback and evaluate overall project



### 1.3.2 Vision Statement

*Recording Thoughts for Mental Health Therapy* is a mobile application designed to be used by sufferers of mental health conditions (e.g. anxiety, depression, obsessive-compulsive disorder <sup>3</sup> (Dictionary n.d.)) whilst on the go, to make recording of Negative Automatic Thoughts (NATs) as convenient and efficient as possible. It will not target any specific age range and would significantly improve the conventional written method used for cognitive behavior therapy. The application will also be beneficial to mental health therapists and psychologists who wish to either use it for their patients or conduct further research in digital therapy.

There are two functional parts to the thought recording process in this application:

- In-situation
- Retrospective

The ‘in-situation’ part is where the user is procedurally asked questions which they can answer as and when they are experiencing the negative thoughts and the scenario relating to it. This meets the requirement of efficiency and convenience. The ‘retrospective’ aspect to the process again procedurally asks the user questions but they have the choice of answering them when they want. This is to allow the user to go back to their thoughts and reflect/view them with better clarity.

The app<sup>4</sup> (techopedia n.d.) will store their thoughts in chronological order along with the user’s answers to the questions asked. This way, the thoughts are

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<sup>3</sup>A mental illness that causes a person to do something repeatedly for no reason.

<sup>4</sup>An app is computer software, or a program, most commonly a small, specific one used for mobile devices.

recorded and organised so that the user does not forget them and makes it simple to process, analyse, reflect on them as well as edit their initial answers if needed.

### **1.3.3 Success Metrics**

**SC-1:** Have 75% of users who currently use the app continue to use it after 6 months following initial release.

**SC-2:** Will show a 25% reduction in anxiety and depression related symptoms of diagnosed users.

**SC-3:** Consistent usage of app measured by 5 or more NATs recorded by user.

**SC-4:** Shown an average 10% increase in usage of the app by each user per month.

**SC-5:** A ratio of 75:25 preference of app users to conventional written therapy is achieved from a sample size of 20 users after the first month of release.

### **1.3.4 Risks**

This mobile application will not target a specific age range but the types of users it aims to be of benefit to are current sufferers of mental health illnesses, therapists and psychologists. Furthermore, it will be an innovative product which provides a new technique for therapy, and so will be appealing to those who are not satisfied with their current therapy, whether that be an alternative tool or the treatment they are receiving from their therapist.

There are some risks involved for the types of users mentioned. Firstly, from a sufferer's perspective using the app when experiencing a Negative Automatic Thought may invoke further stress or anxiety, or worsen their symptoms in general. This could be due to reasons such as being a new user of the app and not being familiar with how it works. Another reason could be that the person con-

cerned is elderly and may not be as familiar or competent with modern technology, making this digital form of therapy obsolete for them.

Continuing on from the previous point, sufferers and therapists may not accept this new digital therapy technique and reluctant to move away from tried and trusted methods. We must expect this to be the case and account for it by developing the necessary training or tutorials for using the application. There must also be thorough product and market research conducted so that potential issues can be resolved beforehand. The research should also prove the effectiveness of digital cognitive behavior therapy to alleviate some of these risks.

### **1.3.5 Assumptions and Dependencies**

Assumptions for this project are things which we can assume that the user has or can do, but is not necessarily required to use the mobile application. Also, they could be things that are true to the purpose of the project.

On the other hand, dependencies are things which are mandatory for the app to run as expected.

#### **Assumptions**

**AS-1:** Current techniques used for cognitive behavior therapy (i.e. written technique) could be improved.

**AS-2:** Users are able to control and navigate their mobile device, and perform general actions on them such as type text or select on-screen buttons.

**AS-3:** Users can read and understand information and answer questions as appropriate.

**AS-4:** Purpose of application use is related to cognitive behavior/mental health therapy.

**Dependencies**

**DE-1:** Hardware and memory capacity of user's mobile device is adequate to run the application.

**DE-2:** Necessary operating system running on device on which the app will be installed.

## **1.4 Scope and Limitations**

### **1.4.1 Exclusions**

## **1.5 Deployment Consideration**

## **2 Related Work**

## **3 Description of the Work**

## **4 Methodology**

## **5 Design**

## **6 Implementation**

## **7 Evaluation**

## **8 Summary and Reflections**

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## **A Appendices**