


Chapter in Book

# Development of Mobile Application for Emotional Evaluation & Psychological Support

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**Abstract:** *This paper presents a development of Platform for Emotional Evaluation and Psychological Support (PEEPS). This mobile application aims to provide those who deal with mental illness the freedom to talk without fear of judgement from others or their loved ones. Two main factors that may contribute to the reluctant of mental health patients to come forward which are the stigma and onerous charge on mental health treatment. Due to poor understanding of mental health, it is often regarded as taboo to talk about it and to seek professional help. Secondly, healthcare for mental health issues is costly and due to this, the lower income group would perceive this not as a health matter, but a spiritual matter. The goals of this project are to establish a real-time platform for Emotional Evaluation and Psychological Support that will act as a new helpline for those in needs of mental health support. The method that is used in this project is Iterative model which has been modified to suit the project development process. The result of the application of the online counselling showed that the application is accepted by the mental illness user as their path to recovery. The mental health user agree that the application is attractive, easy to use and they also can get comforted through the application. The proposed application could help the government and related mental health facilities in providing better mental health services.*

*Keywords:* Mental Health; DASS-21; Psychology.



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## 1. INTRODUCTION

According to the World Health Organization (WHO), mental health is a state of wellbeing in which a person is aware of his or her own capabilities, able to handle everyday pressures, able to work productively, and able to give back to the community. Regardless of age, sex, income, or colour, anyone can have mental health issues. There are almost 200 recognised categories of mental illness. The most prevalent conditions that might disturb a person's routine and influence their mental health include those like depression, anxiety, bipolar disorder, and schizophrenia. For people who are experiencing them, mental health illnesses shouldn't be avoided or hidden. Always get treatment from a specialist as soon as you can (The Lancet Global Health, 2020).

People with mental illnesses are frequently stigmatized and labelled by society because of their behaviors and appearances, which veers from accepted norms (Ibrahim et al., 2019). According to ten informants (2 health professionals, 3 working adults who once struggled with mental health disorders, and 5 healthy adults) who were approached and interviewed, people with mental illness are typically

referred to religious practitioners or shamans rather than health professionals. Asian communities also tend to associate mental illness with the term's "insanity" or "illness of the soul," which will cause the family members of the mentally ill to feel ashamed (Hassan et al., 2018).

Both an individual's personal life and their social role can be impacted by stigma (Munawar et al., 2022). According to ,Clayborne et al., (2019), adolescent depression lasts considerably longer than parents realise. There are a lot of causes for this, including the stigma associated with mental illness and a reluctance among young people to report it out of fear of upsetting their parents. Additionally, those who struggle with mental illness lack the courage to consult a professional or openly express their emotions to loved ones.

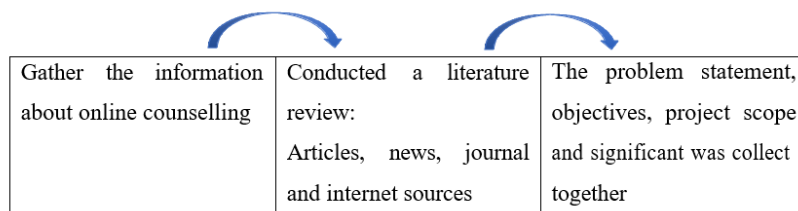
Expensive counselling session fees prevent people with emotional problems like depression, anxiety, and life stress from accessing such treatments. Most of the services are too expensive and burdensome for patients who are in such need, but they must set aside their needs(Javed et al., 2021).Additionally, pre-existing diseases like mental illness are not covered by typical health insurance policies. Due to their fear of tarnishing their medical records, people are deterred from obtaining appropriate therapy for the mental disorder they are dealing with (Hassan et al., 2018).

Relating to the issues, this application expected to be an effective therapy for depression, anxiety, and stress. Patient also can check whether they had mental illness from the Depression Anxiety Stress Scales (DASS) before they can proceed with the counselling or not. The highlight of the application is not only with DASS test but also can make a call and text a message about the problem they had face and how to overcome it. Therefore, this application is developed to help mental health patient to enhance their personality, mood, and attitude.

## 2. METHOD & MATERIAL

### 2.1 Requirement Analysis

The initial stage of this project's process is planning and requirements. The method's first step is to acquire information regarding internet counselling. The goal of this activity is to learn more thoroughly about mental health and how to treat it. Each piece of information was compiled after extensive investigation using publications, news, journals, and other resources. The issue statement, project scope, objectives, and significant information were all compiled from the information that was gathered. Figure 1 simplifies the requirement analysis phases.



**Figure 1.** Requirement Analysis summary

## 2.2 System Design

Based on the initial phases of requirement analysis, few design have been identified to fulfil the objectives of the project. The design includes;1) use case diagram, 2) activity diagram 3) DASS rule-based and 4) User Interface (UI).

### 2.2.1 Use Case Diagram

PEEPS system consists of three access level which is public and counsellor. There are two types of user in this system which are the counsellor that acts as the admin and public user. Public and counsellor are required to register first before login to the system. The public can send a message, access

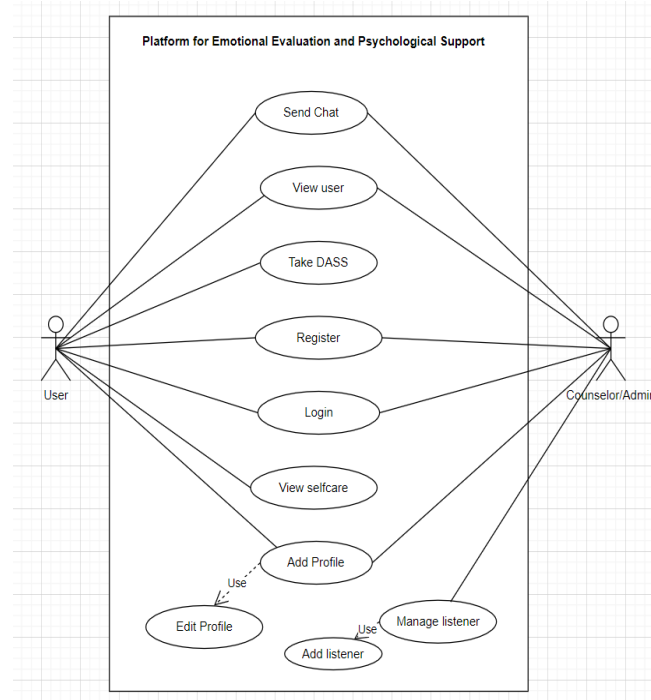


Figure 2. Use Case Diagram

self-care menus and take a DASS test after login to the system. For the counsellor, they can view the information about the public and get a message. They also can manage the list of counsellors with update, delete and add the counsellor. Figure 2 depict the use case diagram.

### 2.2.2 Activity Diagram

Figure 3 shows the activity diagram of the mobile application for registration process, login, send message and take a DASS test for the public. Firstly, user need to create an account by entering their email and password. After login, user need to update their profile and save it. For the chat, user may view the list of the counsellor and online public user, before proceed with choosing the potential listener. User may choose to take the DASS test from the main menus. For each DASS categories (Depression, Stress and Anxiety) user may view the score and final result after submit the questions. For the selfcare feature, user can choose whether they want to listen to music, read quotes, view book recommendation or create notes.

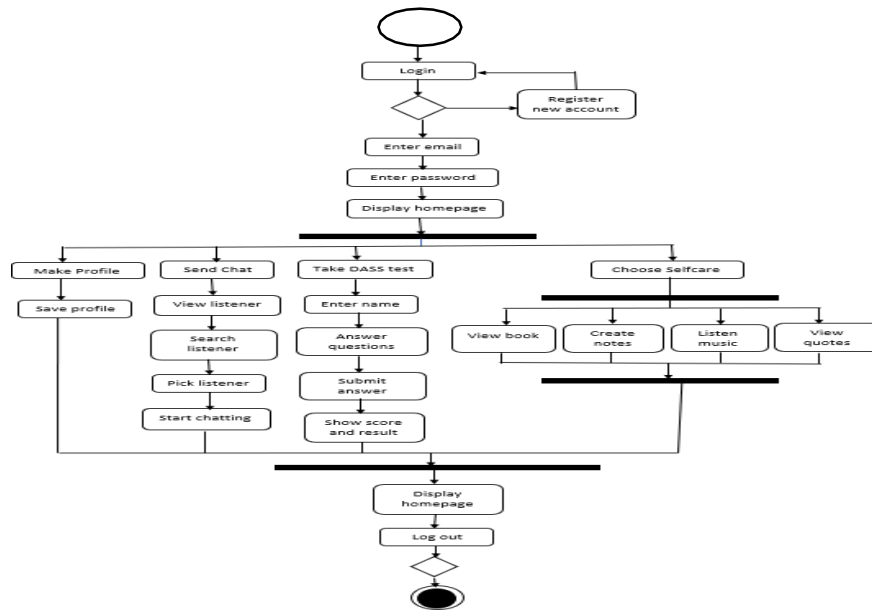


Figure 3. Activity Diagram

2.2.3 DASS Forward Chaining Rule Based Design

PEEPS includes the DASS-21 evaluation test as one of its features. It lets the user to assess their mental health status and helps the counsellor to examine the patient's needs based on the DASS-21 results. The DASS 21 assesses stress, anxiety, and depression symptoms. It is made up of three subscales, each with seven items (DASS 21-D for depression, DASS 21-A for anxiety, and DASS 21-S for stress) (DASS 21-S). Each response is scored on a 4-point Likert scale, with 0 indicating "did not apply to me at all" and 3 indicating "applied to me a lot." The scores from each subscale, as well as the overall DASS 21 score, are combined together. The DASS-21 algorithm utilised in this application is depicted in Figure 4.

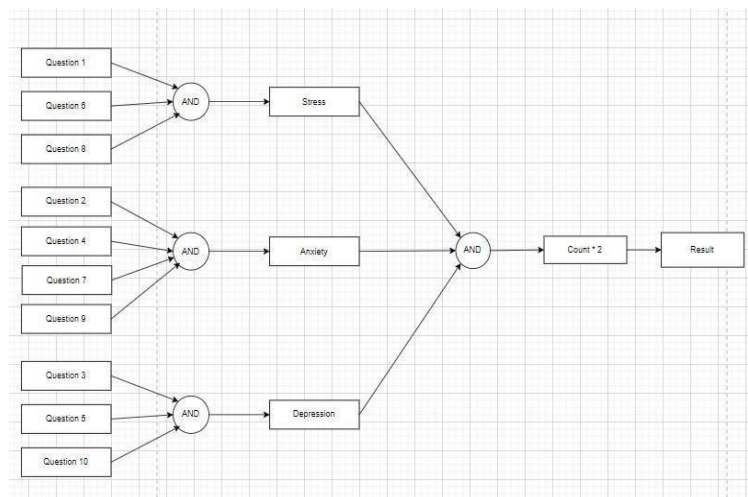


Figure 4. Forward Chaining Based DASS Evaluation

### 2.2.4 User Interface Design

Figure 5 summarizes few user interface design and the function each of the main interface in the PEEPS system.



Figure 5. Main User Interface Design

### 2.3 Implementation

The development of this application had been divided into eight modules for public user and nine modules for counsellor. The module consists of login, register, edit profile, send message, take DASS, view user get message, manage user registration and manage counsellor. The explanation for each module will be discussed in Table 1.

**Table 1.** Development Modules

MODULE	DESCRIPTION
Login	In this module, the username and password are required. User can click 'Login' button to go to homepage.
Register	In this module, user must register first by create an account. User must fill in all the requirements which is username, email, password and phone number.
Send Chat	In this module, user can send a message to the other user by choose the listener gender and the type of sender, public or counsellor. User can start send a message by click a chat icon.
Take DASS	In this module, it will display the instruction to the user. User can start answering the questions by click the 'Start' button
View user	In this module, the user can view the counsellor gender and name before continue with the session.
Edit profile	In this module, user can add, edit and delete their profile.
View Selfcare	User may view quotes and books available, listens to music and add daily notes.

### 3. RESULT & DISCUSSION

Based on the development of the project, it can give benefits to users, especially in evaluating their own depression, stress and anxiety through DASS test and get the counselling through chatting. Besides that, they can also have fun with the quotes, music, book and notes. Moreover, platform for emotional evaluation and psychological support application have been tested using usability testing to achieve the last objectives of the project which is not describe in this paper. According to the result collected, it is shown that users are satisfied with the platform for emotional evaluation and psychological support application.

Currently, the Platform for Emotional Evaluation and Psychological Support application was only focusing on chat and DASS test. There will be several proposed to make this system more useful to users in the future. The considered actions proposed that will be implemented in the system as for the future works such as; 1) Add the feature of call with the anonymity where the user can make a call freely without their phone and name being discover. 2) Notification is important to give notice or inform when someone give a message or a call. User can tap the notification to open the application. 3) For viewing all users, the list can be sorted according to expert and normal users. 4) Conversational agent is needed for users whom want to ask anything regarding the application and how to use it.

### 4. CONCLUSION

The system methodology described in this article for the creation of the PEEPS mental health support system is tenable. Real-time communication and DASS-21 evaluation are integrated, providing a better platform for any user or patient experiencing a mental health crisis. Usability technique had been used to effectively design and assess the application. For the creators and designers of related applications, the study's findings and outcomes provided crucial information about how users learn to interact with the system and how successful their methods are. For organisations and governmental

entities interested in promoting and enhancing concerns relating to mental health, this application is unquestionably pertinent.

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