

===== ONE =====

## Review

### 1. Address the condition and solve the problems

This technology addressed the pregnancy and offers a lot of useful solutions. There are three tests aims to meeting different demands in this application. And before each test there will be an instruction. In test one, the stakeholder is new mother suffering strange symptoms and feeling confused. So, the application offers answers about if the symptoms are normal or not plus other symptoms which can ease negative emotion. And in test two, the user feels lonely and has no one to talk with. And she thinks her husband is avoiding her. The application gets to know which negative emotion the user is suffering from and offers useful suggestions. It also gets her husband be in an appointment which solved all problems of the user. The last test solves problems of both mother and father. It gives solutions to father who are seeking help for increasing conceive changes. And I can see it makes appointment successfully for users in the end.

### 2. Benefits and shortfalls

#### a. Benefits

Guidance is helpful

In test one, there is a tutorial to help you be familiar with this app in a short time if it is your first time to use it. I think the instructions of each function are very detailed, concise and clear. Although people who are not good at using technologies tools may think it is easy enough to use.

Good details

This design seems like a real application because it includes a lot of details of application I used. For instance, users can give feedback to the answers which can demonstrates if the answers are useful or not. Then in the booking part, it offers maps and date which is very detailed. And filter in question list supporting sorting is also good in details.

#### b. Shortfalls

Lack design

The interfaces are monotonous and lack sense of design. Many pregnant women may suffer from depression, loneliness and other negative emotions. If there are some color changes, interface changes or decorations to the interface, the emotions of pregnant women may be effectively adjusted. And it also makes it more interesting to use. However, the color of the design is monotonous. Otherwise, the main color of the app makes me not pleasant.

Lack visual explanations

During the tests, there are many detail buttons. And it will offer more solutions after clicking them. So many words make it boring and tired to reading them. If some words can be replaced by photos or videos may be better especially to pregnant women.

- A. Engagement mean score=3.8
- B. Functionality mean score=5
- C. Aesthetics mean score=3.3
- D. Information mean score=4.6
- App quality mean score=4.175
- E. App subjective mean quality score=4.2
- F. Perceived impact mean score=4.7

#### 4. Usable

This design is usable in most of the functions. After the beginning of test 1, there are login and register buttons in the page. And only register can be clicked while login has no links when I want to click login. In the Signup page, login with Facebook has no links. In the chatting page, such as the small functions of giving feedback are usable. And the details or link with external resources are all usable. After asking questions in the chatting page, user can choose to access to the question list. And the sorting menu and flashcards mode are usable.

In test 2, all of the functions are usable. But the back button in the Details page to select a data is not usable.

In all of the tests, I didn't find the actual function of MOOD TRACKER in the corner of the page.

#### 5. Alternative way

I think health including physical health and mental health plays an important role in pregnancy. And the design I reviewed in this report also have a lot of functions in this point. So, if I design an application for pregnancy, I will focus on online pregnancy communication community and self-care.

Most of the pregnant women may suffer from loneliness. They have no one to talk about their confusion or negative emotion. So, in the communication community, they can chat with other pregnancy women who have ever be in the same conditions and how they overcame the negative emotions or other pregnancy-related complications. Although doctors' guidance may be more professional, communicating with people who have the same experience may make pregnancy women more comfortable.

Self-care can include meal plan and weight record. As meals are very important for babies' growth, the application can offer meals plan for mothers as required. Besides, mothers can also search food's energy, nutrition and GI especially helpful to pregnancy women who need controlling blood glucose. And the application can also have a function to record pregnancy daily health such as weight. After recording the weight, the application can tell you if it is within the normal range and help mother to control it.

## ===== TWO =====

### Result of the MARS test

As a novel text-based conversational virtual assistant, the overall quality of the application prototype HiBaby is moderate (App Quality Mean Score: 3.2175).

It well targets the user group: women who are during or expecting pregnancy, while also helping the caretakers who might experience difficulties in communication.

The quality of the information in the design is impressive (Information Mean Score: 4) and reliable enough to address users' concerns. But the visual aspect may need more efforts (Aesthetics Mean Score: 2.67) in further development. And some improvements could be adopted to build up the functionality and engagement aspects (Functionality Mean Score: 3; Engagement Mean Score: 3.2).

Full document of the MARS is attached in the Appendix.

### Highlights of the design

1) The idea of using a text-based conversational virtual assistant to “look after” pregnant women is quite novel.

Some pregnancy management applications would simply stack all functions they have built into a complicated framework while providing all information that a new mother may need to know. The amount of knowledge could be overwhelming to new parents.

This design deals with this issue in a new way. Based on the prototype, the virtual assistant provides information according to users' input. Instead of asking the user to look through a book themselves, it “answers” questions and accordingly determines whether the user needs a human specialist.

Functions provided in the application are simple, but adequate in terms of information requirements.

2) The question collection design is convenient.

One of the potential shortfalls of a chatbot is the unstable quality of answers. The question collection complements the shortfall, and on the other hand, works as a handy list noting down concerns from everyday life and have them well managed.

3) The integration of the “caretaker” mode with an emotion tracker is a good way to raise the awareness of the importance of emotional support from the partner side.

Especially for couples who live apart or are having difficulties in relationship and communication, the virtual assistant and the emotion tracker is a good intermediary linking the two sides. Couples may not have to talk directly to each other, but could still take steps tackling their problems with the help of the app, which will be bridging the gap and smoothing the obstacles.

4) Helping the user make an appointment would be a welcome function.

This function takes the clinical side into the picture. It eases the difficulty of finding a specialist and making appointments. And the from consultation to appointment “one-stop” service makes a complete usage circle in the app.

#### Recommendations

- 1) During the slideshow at the beginning, the skip function should always stay in the corner.
- 2) The conversation history may grow quite long for scrolling up and down. Adding some functions to management history would be useful.
- 3) There should be a “confirm” button after the user selects the options.
- 4) There is no need to add a button to open the editing page. The input box could directly show in the page.
- 5) The pop-up window should show up when user clicks the “back” button instead of when user clicks the “tick” because user may accidentally click “back” and lose the input text, but they usually do want to save when they click “tick” or “save”.
- 6) The colour in the emotion tracker should be consistent. Currently the “just ok” is yellow in the line graph but changes to green in the circle.
- 7) The app should add a “setting” function to adjust text font, theme colour, sound or notification options.
- 8) The information section is presented in the “textbook” manner. The information could be transformed into comics or animations, making it more approachable.
- 9) The selection time buttons are a bit small. This section could be shown in a dropdown list format to enlarge the button
- 10) The booking buttons are also too small, especially presented in conversation bubbles. Put the whole appointment section into a new page could be an option.

Below are questions about the design. They are not necessarily issues, but aspects that could be considered:

- 1) Would the answer to the questions listed in the collection be added to train the algorithm?
- 2) How is the data of the emotion tracker collected? By analysing the conversation or simply prompt the section for the pregnant woman?
- 3) Does the chatbot use pre-selected responses? It is reported that a chatbot system can remember a user’s input, situation and personal preferences, then react based on the former record of the particular user (Gionet, 2018). Making the user feel being understood by the one she/he is talking to is the biggest strength of a human psychologist. If a chatbot can also do so, the technology could be a real change.

## ===== THREE =====

### 1. Overview of the design

My review objective is Daddy Group from Group5. It is an excellent APP prototype which using a special method of letting users talk to the application for caring mental health of both pregnant women and their partners. I think this is a novel model to give users an interactive experience with the application. And for target users who are feeling lonely and insure, using a virtual persona to accompany the user can be effective. I personally really think it's an interesting idea.

However, the integrity of the prototype is not good enough since it's departed to be three independent tests. It can be a little hard for me to fully understand the consistency of each function. Besides that, I find many buttons with important functions names onside are not clickable. Although using Adobe XD to establish the whole prototype can be limited somewhere, the key function can still be achieved by duplicating some similar screenshots and do some small changes on different screenshots.

### 2. The highlight of the design

Firstly, beyond the excellent idea of the interactive mode, another great point of the design is that a detailed tutorial for new users are provided in test1. That is thoughtful and freshman-friendly. Next, the fonts and buttons of the software look professional and are easy to click. What's more, the information in the given suggestion seems to base on the authoritative sources although they are not labelled on the APP. Even the open source page is thoughtful and looks real (Fig.1). The arrangement of each page is go

### 3. Where can be improved

First of all, the homepage's colour consists of black and white which looks too serious for users (Fig.2). After all, most users are entering the application for mental support and I don't think the combination of black and white can make an anxiety pregnant woman feel better. And the main pages are chosen in dark orange and deep gray which may also look depressing. As for the content in these pages, I thought they are actually three different scenarios of the usage of the application. However, in my opinion, a formal version of the application should show what they can achieve through its comprehensive functions, rather than writing out the scenarios straightforward and providing services in a specific scope to show how these cases are handled. In addition, in the 6th line of Fig.3, there is a serious error of the statement which "they are able to conceive naturally" should be "they are unable to conceive naturally". It may cause users to get confused with the using motivation.

In addition, most pages are lack of back button or homepage button, users have to follow the designed steps but can't choose the personalized function. In some pages like "Sophia is listening to you"(Fig.4 and Fig.5), I even trap in the page cause I can't neither find an exit to get away or turn to other functions

Many exist buttons can't give a reaction, either. It actually can be achieved easily in Adobe XD. I regard it as a weakness because I think it would provide a bad using experience to learn about the application. For example, on "Are you?" page(Fig.6), there are two buttons provided: "care giver" and "pregnant", while only "pregnant" can be clicked. But I'm really

curious about what would exist in the “care giver” since this option is provided and it seems should be an important function as it is settled on such an important page.

Except for the existing problems which can be improved, I think the App could be better if the following suggestions can be accepted. Firstly, a platform where the pregnant woman and the partner can communicate directly can be provided so they can share their notes or appointment reminder or just chat with each other. Maybe in this way, they can have a chance to improve the relationship, rather than just communicate with the machine separately. The second point is that since it's an informatic application, the method of providing the information or knowledge can be more various to attract the users like using some videos or cartoons to present the important but boring message. In addition, setting a navigation bar on every page can make the app structure more clearly and users can also easily be aware of which features they are using and what the next step they should turn to.

#### ===== FOUR =====

##### 1. The Results of the MARS Test

- Engagement Mean Score: 4

The design of Daddy Group uses the chatbot as its main technology, which to a large extent makes the user entertained and interested. The chatbot provides a very high level of prompt interaction and the content inside can target pregnant women well. However, apart from some customisation about the interface, there is no customisation in the aspect of function.

- Functionality Mean Score: 4.5

Most functions of Daddy Group can perform well, such as searching health conditions and making appointments with specialists, with some minor functions not working. There is an instruction at the beginning which makes users easily use the app. The design can categorize different functions in an explicit way and the link and interaction between them are succinct and consistent.

- Aesthetics Mean Score: 3.3

The design of icons and buttons is clear and easy to see. The graphics inside has high resolution and good quality. However, the overall usage of colour is not suitable for pregnant women and it cannot make them feel warm.

- Information Mean Score: 4.2

The function of Daddy Group is consistent with the description in the presentation and the goal of this app is clear but may not be measurable. The content of this app is closely related to the health management requirement of pregnant women. Also, the health information inside contains accreditation by specialists and references to reliable sources. The visual information such as making appointments is clear and the app is developed by the subject group with the support of the university. The app does not contain trial information.

- App Subjective Mean Quality Score: 3.5

Daddy Group can obtain a high overall rating based on its good functionality and interactivity.

Pregnant women will frequently use that if they need pregnancy information. However, there are not many highlights for which I think the user may pay the money. And for overall interface design,

I will not highly recommend to many people.

- Perceived Impact Mean Score: 4

Daddy Group can successfully increase the awareness of pregnant women and their husbands about pregnancy management and enhance the relevant knowledge for them. They can use this app to seek help and change their habits and behaviour based on the suggestion. But this app does not contain stress relief and relationship enhancement, which may not change their attitudes and increase their motivations.

## 2. The Highlights of the Design

- High Interactivity and Responsiveness

The main advantages of chatbot is immediacy, that is, chatbot can give users the answer promptly in a reactive way, which is one of the highlights of Daddy Group (Pereira & Díaz, 2019). The user feels like talking with a person rather than querying the database (Rouse, 2005). Additionally, this interactive method puts much weight on feedbacks to increase the completeness and users' satisfaction of problem solving. The user can select "thumb up" or "thumb down" to evaluate the answer. If the answer is not answered properly, this question can be added to the "QUESTIONS" page for further enquiry to doctors.

- High Professionalism

Apart from being interactive, Daddy Group can answer the question a detailed and professional way. For example, Daddy Group has a "DETAIL" button to illustrate the answer and a "specialist" icon to indicate that this answer is accredited by professional specialists. Many questions contain the button of 'OPEN SOURCE', which shows the reliable reference to the user. For the unanswered question, Daddy Group can input the specialist's answer and list them in the 'QUESTIONS' page for further reference.

- High Asynchronicity

Another advantage of Daddy Group is asynchronicity, that is, to give users notifications and reminders in a proactive behaviour (Pereira & Díaz, 2019). Daddy Group not only adds appointments functions to help users make appointments in a convenient way, but also gives some notifications and reminders from the appointment or the husband note. Husbands can also help their wives make appointments or comfort them via the app proactively.

## 3. The Recommendations of the Design

- Improve Functions on Mental Management

One of the disadvantages is that Daddy Group does not perform well in relieving the user's

negative emotions. For example, when the user is feeling angry and lonely, it is not appropriate to immediately make psychiatric appointments because doing so may make the user more anxious.

A better way is to give users some entertainment or make her husband help her. It is suggested to help the user make appointments only if she has suffered from negative emotions for a relatively long time.

- Make Achievable Goals

Daddy Group can offer professional health guides to the user. However, after the user receives the guide, he or she may have an idea of how to implement that or whether he or she has done well or not. In other words, it is suggested that Daddy Group can add some monitoring functions to help the user achieve their goals as well as add more interactions and feedbacks. For example, Daddy Group can devise a daily plan for users who are feeling angry and ask them if they feel better one week later.

- Improve the Design of Interface

It is suggested that Daddy Group can use a warmer colour and font for pregnant women and provide some customisation on the interface according to the user's preference. As the target audience is pregnant women and her husbands, the health guide is recommended to be more graphics- or video-based rather than text-based. It may be better if Daddy Group conveys the information by some videos, pictures, animations than just text and bullet points.