## Sri Lanka Institute of Information Technology



Milestone 02

WE\_UEE\_64

User Research

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### Introduction

In a world where modern mothers face unprecedented demands, we've undertaken a mission to create a transformative solution that not only eases the challenges of contemporary parenting but also streamlines the vital work of midwives. Parenthood is a journey both enriching and demanding, and we're excited to introduce the Baby Care Mobile App—a comprehensive, userfriendly platform designed to empower parents and caregivers in effectively managing and tracking their baby's care, health, and development. Our app aims to unravel the complexities of childcare by offering an extensive array of features and functionalities that prioritize convenience, organization, and invaluable insights for parents on their unique parenting journey. It's our response to the diverse needs of today's mothers and midwives, enhancing their lives in profound ways. The Baby Care Mobile App is the result of a deep understanding of the rapid pace of modern life, where mothers gracefully balance a multitude of responsibilities. Our objective is clear to provide mothers with a versatile and intuitive tool that simplifies their daily routines and equips them with indispensable resources. In parallel, we're committed to elevating the efficiency and effectiveness of midwives' work, recognizing its critical importance. For busy mothers, our app serves as an indispensable lifeline. It offers an extensive range of features, effortlessly facilitating appointment scheduling, providing easy access to clinic details, and optimizing their baby's healthcare management. Moreover, our integrated online baby store brings convenience to their fingertips, simplifying the process of discovering and purchasing essential baby items. Acknowledging the pivotal role played by midwives in maternal and child healthcare, our app is thoughtfully designed to support them by streamlining tasks like clinic management and vaccination record keeping. We comprehend the exacting nature of their profession and strive to provide them with a dependable and user-friendly tool to enhance their effectiveness.

The Baby Care Mobile App encompasses a diverse range of features, each meticulously tailored to meet the distinctive needs of both mothers and midwives. Whether it's appointment scheduling, vaccination record management, access to clinic information, or seamless shopping for baby essentials, our app stands as the definitive all-in-one solution for the intricate journey of baby care.

## **Test Objectives**

### Pregnant Mother - IT21252754 - Madhumalka K.C.S

- 1. To assess the ease and efficiency of using a baby care mobile application to manage clinics, vaccinations and appointments of pregnant mothers relative to traditional clinic note systems.
- 2. Making an appointment to see a midwife efficiently and conveniently for the pregnant mother.
- 3. Identify the strengths and weaknesses of the mobile application in the interaction between the midwife and the pregnant mother and the provision of health services through the application.
- 4. Currently, maternal health cards are used to manage clinic details and vaccine details of the pregnant mother. But these details can be easily managed through this mobile application. There, the pregnant mother can easily get a good understanding of her health status with the help of graphs, charts and tables.
- 5. This application includes a system for recommending automated health advice to the mother based on the health condition of the pregnant mother. This allows the pregnant mother to easily get the information she needs.
- 6. Currently, a pregnant mother has to go to the clinic place to get an appointment to meet the midwife. But through this application, the mother can easily get an appointment to meet the midwife.
- 7. The app notifies the mother through a notification when the appointment date, clinic days, booked to meet the midwife is approaching. It can prevent the pregnant mother from missing the clinic, vaccinations and appointments.
- 8. By analyzing the strengths and weaknesses of immunization and clinic management for pregnant mothers, we will develop a baby care mobile application.

#### Mother with a baby - IT21288012 - De Vass Gunawardane A.P.D.N

- 1. To assess the ease and efficiency of using a baby care mobile application to manage clinics, vaccinations and appointments of babies relative to traditional clinic note systems.
- 2. Making an appointment to see a midwife efficiently and conveniently for the baby.
- 3. Identify the strengths and weaknesses of the mobile application in the interaction between the midwife and the pregnant mother and the provision of health services through the application.
- 4. Currently, maternal health cards are used to manage clinic details and vaccine details of the baby. But these details can be easily managed through this mobile application. There, the pregnant mother can easily get a good understanding of baby's health status with the help of graphs, charts and tables.
- 5. This application includes a system for recommending automated health advice to the mother based on the health condition of the baby. This allows the pregnant mother to easily get the information she needs.
- 6. Currently, a pregnant mother has to go to the clinic place with the baby to get an appointment to meet the midwife. But through this application, the mother can easily get an appointment to meet the midwife.
- 7. The app notifies the mother through a notification when the appointment date, clinic days, booked to meet the midwife is approaching. It can prevent the pregnant mother with the baby from missing the baby's clinic, vaccinations and appointments.
- 8. By analyzing the strengths and weaknesses of immunization and clinic management for mothers who have babies, we will develop a baby care mobile application.

## The midwife takes care of the pregnant mother until the baby is born - IT21210174 – Tharushi Lakshika V.G.

- 1. Assess the convenience and efficiency of using the Baby Care mobile application for managing the pregnant mothers' clinic and managing the midwife's duties, compared to traditional clinic scheduling methods
- 2. The effectiveness and convenience of making an appointment to check the health status of the pregnant mother and existing high-risk conditions and doing it in a fixed time frame.
- 3. Identify any strengths and weaknesses of the application concerning its role in improving midwife and mother interactions and healthcare delivery.
- 4. Test the features designed to enhance midwife and mother communication, and appointment scheduling and update clinic and vaccination details.
- 5. Using a QR code to access the pregnant mother's account very quickly and easily after coming to the clinic.
- 6. Currently in the clinic management, the midwives manage health appointments, and vaccination details management using manual methods of baby or mother health cards
- 7. The dates to come back to the clinic are mentioned in the card of the pregnant mothers and in some cases they are informed about it through phone calls or neighbors. However, through this app, it is possible to make the tasks easier and exchange information between the midwife and the pregnant mother as well as the clinic dates. There is also a notification system to remind the pregnant mother when it approaches.
- 8. By analyzing the strengths and weaknesses of the clinic management, we will be developing a Baby care mobile application.
- 9. While we are monitoring the traditional processes related to the clinic, we have made arrangements to introduce a series of necessary solution features through the mobile app that we are creating.
- 10. Weaknesses: Expectant mothers tend to forget the dates they should come to the clinic due to their busy schedule, there is a possibility that the midwife misses the check-up of mothers with high-risk conditions due to her busy schedule, it takes extra time to find her pregnancy card after the expectant mothers arrive at the clinic, pregnant The mother's inability to discuss her problems with the midwife quickly and get solutions.
- 11. Test the user-friendliness and ease of use of the Baby Care mobile application for scheduling appointments with midwives and pregnant mothers.
- 12. Evaluate the experience of receiving notifications and reminders for scheduled appointments, clinic and vaccination programs, and accessing advice services through the application.
- 13. Identify any advantages or disadvantages of using the application compared to traditional in-person healthcare visits.
- 14. Assess the features that enhance mother engagement, including secure communication with the midwife and convenient access to clinic details

## Midwife takes care of the mother after childbirth - IT21321368 – Samarasinghe.V.R

- 1. Assess the convenience and efficiency of using the Baby Care mobile application for managing the new born baby's clinic and managing the midwife's duties, compared to traditional clinic scheduling methods.
- 2. Assess the convenience and efficiency of using the mobile application for clinic information entering compared to traditional clinic information entering methods.
- 3. Identify any strengths and weaknesses of the application concerning it role in improving midwife and mother interactions and healthcare.
- 4. Test the features designed to enhance midwife and mother communication, update babies clinic and vaccination details and access to baby's medical history.
- 5. Assess the app's functionality and effectiveness by quickly and easily accessing the child's account by scanning the QR code on the mother's account upon arrival at the clinic.
- 6. Currently in the clinic management, the midwives manage baby's clinic, and vaccination details using manual methods like baby health cards.
- 7. The dates to come back to the clinic are mentioned in the card of the baby's and in some cases they are informed about it through phone calls .However, through this application, it is possible to facilitate tasks and exchange information as well as clinic dates between the midwife and the mother. There is a notification system to remind the mother when the next appointment date approaches.
- 8. By analysing the strengths and weaknesses of the clinic management, we will be developing a Baby care mobile application.
- 9. While we are monitoring the traditional processes related to the clinic, we have made arrangements to introduce a series of necessary solution features through the mobile app that we are creating.
- 10. Weaknesses: midwives tend to forget to give the nutrition supplements during the clinic time due to their busy schedule, there is a possibility that the midwife misses the check-up of babies with high-risk conditions due to her busy schedule.
- 11. Test the user-friendliness and ease of use of the Baby Care mobile application for scheduling appointments with midwives and mothers to check high risk health condition of babies.
- 12. Identify any advantages or disadvantages of using the application compared to traditional data entering process.
- 13. Assess the features that enhance mother engagement, including secure communication with the midwife and convenient access to baby's clinic details and vaccination details.

## Methodology

As the members who have the responsibility of implementing and developing the BABY CARE mobile application, we conducted our user research with midwives who has wide experience in this field for a considerable amount of time, pregnant mother and a mother who has a baby. And we conducted this specific user research at a clinic.

While doing this interview we showed some of the sketches of basic level of the mobile application and asked if they satisfied with basic structured diagrams. Also, we used User flow diagram which we have created in the milestone one and asked from them if they are agreeing with basic format of the flow when they use the application as a Midwife or mother

## **Interviewing**

### Pregnant Mother - IT21252754 - Madhumalka K.C.S

01. **Question:** Can we know the mother's details? How old are you and do you have a job?

**Answer: Age** 35. Currently not working.

02. **Question:** What mobile apps does mom currently use?

**Answer: Yes.** Currently, mobile apps are used for daily activities.

03. **Question:** Current vaccine details, clinic details, how to manage mother's health information? Do you use any tool or app for that?

**Answer: Not** using an app. Details are obtained from clinic notes.

04. **Question:** What is your opinion about getting details about vaccinations and clinic details through an app?

**Answer: That** idea is good. It is very easy to get the details of the clinic and vaccinations because mobile phones are often used.

05. Question: What kind of clinic and vaccination details should you get?

Answer: Facility to get information about BMI details, details about clinic dates and make appointment request

06. **Question:** What do you think about showing special information about mother's health through tables and graphs? E.g. mother's BMI value

**Answer: That's** a good idea. BMI details are easily available. It is a great convenience for busy people.

07. **Question:** What is your opinion about using this app to get appointment with mid wife?

**Answer: Currently**, if you want to request an appointment, you have to come to the clinic and request it. If you can do it through a mobile app, it will be very convenient.

08. **Question:** What is your opinion about being informed by notification when the date of appointment with Midwife is near?

**Answer: It** is very easy to remind the scheduled clinic days by notification. Therefore, we can participate in the clinic days without having to miss them.

09. **Question:** How many days in advance will it be easy to receive such a notification?

**Answer: It's** easy to be informed a day in advance.

10. **Question:** What things do you think should be included in this app that we haven't talked about yet?

**Answer: Facility** to get all details in Sinhala. Ability to obtain medical advice.

### Mother with a baby - IT21288012 – De Vass Gunawardane A.P.D.N

**Me:** Good Afternoon! We are planning to make a Health Care app. It will manage the details of vaccination, clinic and the growth of the baby. Can you briefly introduce yourself?

**Answer:** Hi! My name is Kasuni from Colombo. I'm working as an accountant. I have a 5-month-old baby.

Me: Do you use a health app to manage your day-to-day tasks regarding your baby?

**Answer:** No, I use the manual method.

**Me:** So, how this kind of health app will help a mother like you?

**Answer:** We only have a book to record the details, so it will be easier to have an app when we take our babies to the clinic because, as a mother who works full time, I might forget the book at home.

**Me:** Anything else to add?

**Answer:** We also can face emergencies where we need immediate responses from medical centres to solve our doubts.

**Me:** Thank you so much for allocating your time to give us some insightful ideas and recommendations. Have a nice day!

## The midwife takes care of the pregnant mother until the baby is born - IT21210174 – Tharushi Lakshika V.G.

We intend to create a mobile app for midwives and pregnant mothers. We hope to get an idea from you and your work environment through this interview.

Me - As a midwife, I would like to know what kind of service you provide to society.

**Midwife -** When a woman and a man get married, we register them. After that, when they plan to have a baby, the midwife gives them all the necessary instructions. That is, how to be during pregnancy, how to be careful when the baby is born, and how to take care of the baby. The midwife informs them

**Me** - Can I know a little detail from you about the process that happens after a pregnant mother registers?

**Midwife** - After a mother is pregnant, we take her to the clinic. When she comes to the clinic, if there is medication, they are injected. The doctor examines the mother. In addition to this, we give them the necessary health advice

**Me** - What are the problems you face in the process you mentioned?

**Midwife** - The main challenge is that it is difficult to contact the mothers for the clinic. They have no way to communicate properly. In addition to that, the mothers forget the days of the clinic. Everyone is busy. With that work, they can forget this. Also, there is no proper process to discuss the health conditions of mothers with them. If there are problems like this.

**Me** - We hope to create a notification system and appointment system for that. Apart from this, are there any things that you think would be good to include in this app?

**Midwife** - There are some mothers with high-risk conditions. We need to check them three times a month. Because we are busy, sometimes we miss it. I think it would be good if we make the app so that we get a reminder like that. In addition to this, mothers ask us about a good market to buy the things they need when they are getting ready to give birth. I think it would be better if they get some help through this app to get the things they need with good quality and at an easy price.

**Me** - As a midwife, what kind of thing do you expect most from this app to get help for your duties?

**Midwife** - I think appointment system is the most useful feature for use

**Me** - We took a rough idea and created this user flow. That is, it describes the entire process related to a clinic. If there is anything to change in this, we would like to know your opinion about it.

**Midwife** – I think this step wants to change. We would look at the messages coming to the chat box and only if there is a situation that needs to be met and discussed, we would set aside a date

to meet them. In addition, if there is a problem that can be easily answered without such discussion, it is better to provide the necessary solutions for that problem through the mobile app itself. It is suitable. This will make the work of the pregnant mother as well as us easier. So, another thing is since there are mothers with high-risk conditions, it is very important if it is possible to create the app so that we can set aside dates to check them and send a text message to inform the pregnant mothers.

**Me** - Thank you so much for your insights and suggestions. Your input will help us develop a comprehensive and valuable baby care mobile app.

# Midwife takes care of the mother after childbirth - IT21321368 – Samarasinghe.V.R

**Me**: How do you currently manage and access information about newborn babies and their care?

**Client**: Currently, after the baby is born, mother give us a call and inform us that they has come home. After that, within five days after the birth of the baby, the health condition of the baby and the mother should be checked. In that way, we should go from time to time to check the health condition of the child and the mother.

**Me**: Can you describe the challenges you face when keeping track of babies' health and appointments?

**Client**: We miss visiting the health conditions of the baby and the mother on the scheduled dates.

**Me**: What tools or methods do you currently use to keep track of baby and mother health records? Are there any digital solutions you currently use in your work?

Client: Currently we are not using any digital device to manage those details

**Me**: What are your thoughts on the feature that allows midwives to create profiles for newly born babies in mothers' accounts? How do you see this improving your workflow?

**Client**: Yes, then we can see mother's old clinic and vaccination information as well as babies clinic and vaccination details and BMI charts. Also, when a new child is born, it is very good to be able to monitor the mother's account and know all the details of the mother and the previously born children.

**Me**: How do you think the ability to scan a QR code within the mother's account to access the baby's account would impact your workflow as a midwife? Are there specific scenarios or situations where you believe this QR code scanning feature would be particularly valuable in your work?

**Client**: Currently, an average number of thirty to forty babies come to the clinic per day. Then it takes time to search separately and enter the information in the baby's account. By scanning the QR code and going to the account, the work can be done quickly. It's worth a lot.

**Me**: We are creating a feature in terms of adding clinic and vaccinations details, what do you think about that?

**Client**: Yes. By entering that information, even if we forget the days of clinics and vaccinations, we can be notified through notifications, which is very good.

**Me**: Can you describe how you currently handle situations where a baby's health is a cause for concern during your care?

**Client**: Currently, on the day of coming to the clinic to check the height and weight, if any problem is detected in the baby, it will be noted in the baby's book, telling to come to the clinic at this time of the day.

**Me**: How do you think the option to schedule doctor appointments via the app might contribute to a more efficient and effective care delivery system for mothers and their babies?

**Client**: Yes it is very good. We can quickly send the child to meet the doctor.

**Me**: Are there any additional features or functionalities you believe would be valuable for midwives in your daily work with mothers and babies?

**Client**: It would be nice if there was some way that the baby could get good hygiene and quality stuff.

## Video recordings

Pregnant Mother - IT21252754 - Madhumalka K.C.S

https://drive.google.com/file/d/1srUra76tRrFw3lO3ym1uUazLDqiMM-c\_/view?usp=sharing

Mother with a baby - IT21288012 - De Vass Gunawardane A.P.D.N

https://drive.google.com/file/d/1SjZw1T8iljxpO57Dp8IqgqpqJ8rWkQRR/view?usp=sharing

The midwife takes care of the pregnant mother until the baby is born – IT21210174 - Tharushi Lakshika V.G. –

https://drive.google.com/file/d/1Aejx\_X794y-PqTFKnpAba8D98IGimb1D/view?usp=sharing

# The midwife takes care of the mother after childbirth - IT21321368 – Samarasinghe. V.R -

https://drive.google.com/file/d/1nKaIcytOE9qWox O60ijZPF8EM0QuDS/view?usp=sharing

## **Questionnaire**

### Pregnant Mother - IT21252754 - Madhumalka K.C.S

- 1. Questionnaire
  - Are you currently using a mobile app to manage clinic and vaccination details?
    Yes,No
  - As a pregnant mother, what were the problems in contacting the midwife and managing health details?
  - If a mobile app is used for that, what features should it include?
  - How important is the ease of interaction with midwives and mothers in a Baby Care app to you?
  - What is your opinion about the ability to request an appointment to see a midwife through the app?
  - As a pregnant mother, what features would you like to see that are not mentioned in the baby care app?
- 2. Then Format the Questionnaire by organizing the questions in a logical order and ensure they are clear and concise. Use a mix of multiple-choice questions, and rating scales for a comprehensive understanding of the user's perspective.
- 3. **Pilot Testing** Before distributing the questionnaire widely, consider conducting a pilot test with a small group of users to ensure the questions are clear and the survey flows smoothly.
- 4. **Distribute and Collect Data** Once satisfied with the questionnaire, distribute it to our target audience, which includes Midwives, mothers,
- 5. Analyze the Data

### Mother with a baby - IT21288012 - De Vass Gunawardane A.P.D.N

### 1. Questionnaire

- Why need this app for? for managing daily plans, work life and child priorities.
- Do you like to use mobile apps rather than conventional child book?
  Yes or no.
- Why is it more valuable than conventional bool?
- Have you any better ideas to add to this app?
- 2. Then Format the Questionnaire by organizing the questions in a logical order and ensure they are clear and concise. Use a mix of multiple-choice questions, and rating scales for a comprehensive understanding of the user's perspective.
- 3. **Pilot Testing** Before distributing the questionnaire widely, consider conducting a pilot test with a small group of users to ensure the questions are clear and the survey flows smoothly.
- 4. **Distribute and Collect Data** Once satisfied with the questionnaire, distribute it to our target audience, which includes Midwives, mothers,
- 5. Analyze the Data

## The midwife takes care of the pregnant mother until the baby is born - IT21210174 – Tharushi Lakshika V.G.

#### 1. Questionnaire

- How often do you use mobile or web applications for your related duties? Daily, Weekly, Monthly, Rarely, Never
- Have you ever used a mobile or web application for your health duties?
  Yes or No
- What challenges or difficulties have you encountered when doing your duties?
- What features or functionalities do you consider essential for a Baby Care mobile application?
- How important is the ease of interaction with midwives and mothers in a Baby Care app to you?
- Do you have any specific suggestions or ideas for improving the activities of the clinic?
- What do you think about the health scheduling appointments in a Baby Care App?
- Are there any features or functionalities you would like to see in a Baby Care app that hasn't been mentioned Baby Care App?
- 2. Then Format the Questionnaire by organizing the questions in a logical order and ensure they are clear and concise. Use a mix of multiple-choice questions, and rating scales for a comprehensive understanding of the user's perspective.
- 3. **Pilot Testing** Before distributing the questionnaire widely, consider conducting a pilot test with a small group of users to ensure the questions are clear and the survey flows smoothly.
- 4. **Distribute and Collect Data** Once satisfied with the questionnaire, distribute it to our target audience, which includes Midwives, mothers,
- 5. Analyze the Data -

# Midwife takes care of the mother after childbirth - IT21321368 - Samarasinghe.V.R

#### 1. Questionnaire

- How often do you use mobile or web applications for your clinic related duties? Daily, Weekly, Monthly, Rarely, Never
- Have you ever used a mobile or web application for your clinic duties?
  Yes or No
- If yes, please describe your experience.
- What challenges or difficulties have you encountered when doing your duties?
- What features or functionalities do you consider essential for a Baby Care mobile application?
- How important is the ease of interaction with midwives and mothers in a Baby Care app to you?
- Do you have specific suggestions or ideas to improve the clinic's activities through the mobile application?
- What do you think about the QR Code scanning feature in a Baby Care App?
- Are there any features or functionalities you would like to see in a Baby Care app that hasn't been mentioned Baby Care App?
- **2.** Then Format the Questionnaire by organizing the questions in a logical order and ensure they are clear and concise. Use a mix of multiple-choice questions, and rating scales for a comprehensive understanding of the user's perspective.
- **3. Pilot Testing** Before distributing the questionnaire widely, consider conducting a pilot test with a small group of users to ensure the questions are clear and the survey flows smoothly.
- **4. Distribute and Collect Data** Once satisfied with the questionnaire, distribute it to our target audience, which includes Midwives and mothers.
- 5. Analyze the Data

#### • Participant Profiles

Name	Demography	Location	Date	Time
Midwife	Take care of the	Colombo	10/08/2023	01.00 p.m.
	pregnant mother,			
	30years experience			
Midwife	Take care of mother	Colombo	10/08/2023	01.00 p.m.
	and baby,15years			
	experience			
Pregnant	Primary School	Colombo	15/08/2023	03.00 p.m.
mother	Teacher			_
Mother	Bank Director	Colombo	17/08/2023	05.00 p.m.
				_

#### • User Research – Tasks/Scenarios

We have assigned tasks to both pregnant mothers and midwives to gain a preliminary understanding of the requirements for our mobile app. These tasks involved basic mobile activities to assess the mothers' familiarity with using mobile phones and to gauge their proficiency in English. While we were informed that mothers generally possess a satisfactory level of mobile phone usage skills, challenges were noted in using mobile apps in the English language.

Furthermore, during the user testing sessions involving midwives, we underscored the importance of their proficiency in both English language and mobile app usage. Through these sessions, wherein we assigned straightforward tasks, we gained valuable insights into enhancing the app's user-friendliness.

#### • Plan for data analysis

To gather inspiration for developing our mobile app, we've devised a Google Form designed to collect ideas and recommendations from both mothers and midwives.

 $\label{lem:model} \begin{tabular}{ll} Mother - $\frac{https://forms.gle/ga4KSH8cbkAwYJwn8}{Midwife} - $\frac{https://forms.gle/BsfTMwS3B8QpdyBC6}{Midwife} - $\frac{https$ 







