

## DESIGNING 'KIDDOCARE' APPLICATION FOR PEDIATRIC NURSING PRACTICE WITH USER CENTERED DESIGN (UCD)

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**Abstract**— This research aims to develop KiddoCare, a mobile-based pediatric nursing application designed using the User Centered Design (UCD) method. The methodology used in this study included interviews, questionnaire distribution, and documentation with the aim of filling the gap of tools and applications that specifically meet the unique needs in pediatric care. Interviews with health workers showed that one of the biggest challenges was the lack of efficient communication between nurses and parents, as well as difficult access to pediatric health information. Therefore, this app is designed to improve communication between nurses and pediatric patients and facilitate access to important health information. The UCD process includes understanding the user context, determining user needs, designing and producing solutions, and evaluating those needs. From the initial survey of 74 respondents, 50.56% agreed and 46.02% strongly agreed with the need for easier access to pediatric health information. A total of 74 respondents evaluated the app and gave positive feedback; 47.01% 'agreed', 41.17% 'strongly agreed' with the functionality of the app, and 11.82% 'moderately'. No respondents expressed 'disagree' or 'strongly disagree'. In conclusion, KiddoCare was rated as an effective and appropriate pediatric nursing tool, supporting flexible care that is adaptive to each child's individual needs.

**Keywords:** child nursing, health communication, information access, mobile applications, user centered design.

**Intisari**— Penelitian ini bertujuan untuk mengembangkan KiddoCare, sebuah aplikasi keperawatan anak berbasis mobile yang dirancang menggunakan metode User Centered Design (UCD). Metodologi yang digunakan dalam penelitian ini mencakup wawancara, penyebaran kuesioner, dan dokumentasi dengan tujuan mengisi celah alat dan aplikasi yang secara khusus memenuhi kebutuhan unik dalam perawatan anak. Hasil wawancara dengan tenaga kesehatan menunjukkan bahwa salah satu tantangan terbesar adalah kurangnya komunikasi yang efisien antara perawat dan orang tua pasien, serta sulitnya akses terhadap informasi kesehatan anak. Oleh karena itu, aplikasi ini dirancang untuk meningkatkan komunikasi antara perawat dan pasien anak serta memudahkan akses ke informasi kesehatan yang penting. Proses UCD meliputi

*pemahaman konteks pengguna, penentuan kebutuhan pengguna, desain dan produksi solusi, serta evaluasi terhadap kebutuhan tersebut. Dari survei awal terhadap 74 responden, 50.56% menyatakan setuju dan 46.02% sangat setuju dengan perlunya akses yang lebih mudah ke informasi kesehatan anak. Sebanyak 74 responden mengevaluasi aplikasi dan memberikan tanggapan positif; 47.01% menyatakan 'setuju', 41.17% 'sangat setuju' terhadap fungsionalitas aplikasi, dan 11.82% menyatakan 'cukup'. Tidak ada responden yang menyatakan 'tidak setuju' atau 'sangat tidak setuju'. Kesimpulannya, KiddoCare dinilai sebagai alat keperawatan anak yang efektif dan sesuai, mendukung perawatan yang fleksibel serta adaptif terhadap kebutuhan individual setiap anak.*

**Kata Kunci:** *keperawatan anak, komunikasi kesehatan, akses informasi, aplikasi seluler, desain yang berpusat pada pengguna.*

## INTRODUCTION

Digital technology is an important and reliable source of information in the health sector [1]. Rapid technological development, many technological innovations have emerged in the field of nursing. These innovations can improve the quality of nursing services, improve patient safety, and reduce the workload of nurses. Like Electronic Health Records – HER [2], Telemedicine and Telehealth [3] Nursing Information Management System [4], Mobile Health Applications [5], Clinical Decision Support Systems [6] and much more. In this study, information technology will be applied to the pediatric nursing sector, due to unique challenges, especially in providing comprehensive and personalized care to children.

One of the most important issues in child care is the lack of tools and apps specifically designed to meet the unique needs of this context. For example, the KiddoCare app in Malaysia, which can be accessed at <https://kiddocare.my/parents/>, provides childcare services with various features. This application has become a reference in identifying space for innovation, especially in terms of communication between nurses and children and access to health information. The 'KiddoCare' app we developed focuses on improving these aspects through a User Centered Design approach, which places the specific needs of child and caregiver users at the core of app development [7]. The innovations we offer include personalized care tailored to each child's unique profile, communication systems that enable real-time interaction between caregivers and parents, integration with local health systems for easy access to medical records, comprehensive child health education modules, use of AI for health data analysis, design of child and parent-friendly user interfaces, and advanced security and privacy features. This research is important because it not only proposes new technological solutions, but also answers the urgent need for innovation in pediatric

health care methods, with the aim of providing more effective, efficient, and empathetic care.

Choosing the User Centered Design (UCD) method in the development of the 'KiddoCare' application was a deliberate decision, aimed at meeting specifically the needs of parents in pediatric nursing care. Although other methods such as Agile Development and Human-Centered Design can also be considered, UCD is considered the most effective because of its primary focus on end-user experience and needs. This approach is crucial in the context of child care, where health information and communication needs must be integrated with empathetic and intuitive approaches. UCD allows us to involve parents directly in the design process, ensuring the 'KiddoCare' app is not only technically advanced but also responsive to emotional and practical needs in child care. This selection is based on a commitment to create solutions that are not only technology-based but also in-depth in understanding and meeting the real needs of users, namely parents and health workers, in providing the best care for their children.

Previous research that has applied the UCD method to the development of mHealth applications with the results of integration between design thinking and the ISR cycle has proven effective for creating mHealth solutions that are user-focused and according to their needs [8]. Another study by Nouriska, et al with the results of the UCD method has a 90% effectiveness rate in producing system interfaces [9]. Furthermore, the research conducted by Grizelda with the results in the form of a licensing information system was built to be more efficient because the existing features were adjusted to the needs of the user [10]. Furthermore, the UCD method has also succeeded in producing an Online Seminar Application system [11], Diabetes Self-Management Tool [12], Mobile Health for Smoking Cessation [13] and much more.

Based on the success of the UCD method, this research is expected to bring significant changes in the development of child health applications. By



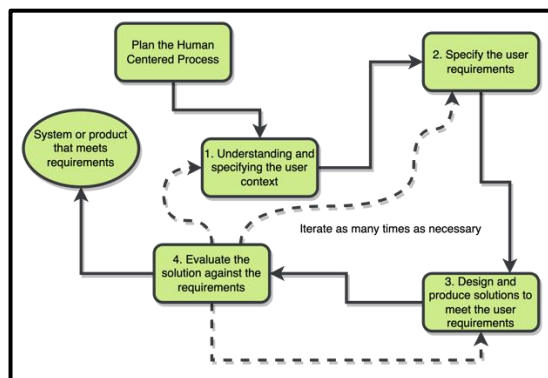
bringing technology closer to the end user, parents and healthcare workers, 'KiddoCare' promises not only advancements in pediatric nursing technology, but also improvements in the quality of care and user experience. This success opens up wider opportunities for similar applications in the future, demonstrating how important a user-centric approach is in creating effective and sustainable health solutions.

This research will make an important contribution in the field of pediatric nursing and health app design by introducing the 'KiddoCare' app, designed through the UCD method. The app will bring new insights in providing more appropriate and effective technology solutions for parents in managing their child's healthcare. With a focus on user needs, the application is expected to improve the quality of interaction between parents and health workers and facilitate more informed decision making in children's health care.

## MATERIALS AND METHODS

The methodology used to develop the KiddoCare application, with a particular focus on implementing User Centered Design (UCD). It is a design method that places one or more users at the center of the system design process [14]. his study was conducted in one of the private hospitals in Pekanbaru, Riau, and will describe the process followed from initial conception to final prototype, including selection and justification of research methods, sampling process, data collection and analysis, as well as steps taken to ensure research ethics and data integrity. This approach will allow readers to understand in depth how applications are developed, as well as provide a framework for critical appraisal and reproduction of studies by other researchers.

The stages of the UCD method in this study can be seen in Figure 1.



Source: (Research Results, 2024)

Figure 1. Stages of UCD Method

Figure 1. displays a diagram describing the human-centered design process. It is an approach used in the designing of products and services to ensure that the end result matches the needs and desires of users. The following are the stages depicted in the diagram [15]:

1. Understanding and specifying the user context [16], This stage involves in-depth research of pediatric caregivers, patients, and their families to understand clinical and emotional needs in the context of child care. Will gather information about how nurses interact with children, the challenges they face, and how technology can help.
2. Specify the user requirements [17], by understanding the user context, will identify and document specific requirements for the 'KiddoCare' application. This includes functionality necessary to support the child's nursing process, such as developmental tracking, treatment schedule management, and communication with parents.
3. Design and produce solutions to meet the user requirements [18], Based on predetermined requirements, will design the interface and functionality of the 'KiddoCare' application. This could include developing interactive prototypes and piloting features that make it easier for nurses to care for children more effectively.
4. Evaluate the solution against the requirements [19], Once the application prototype is developed, it will evaluate the 'KiddoCare' application through testing sessions with nurses and other stakeholders to ensure that the application meets the established requirements and supports the pediatric nursing practice well.

In addition, there is an initial stage before the main cycle i.e., Plan the Human Centered Process. In planning a human-centered design process for the 'KiddoCare' app, an important first step is to set clear goals to improve aspects of pediatric nursing with technology that is easy to use and responsive to the needs of nurses and patients. A project team consisting of designers, developers, and health practitioners will be formed, with clear responsibilities and timelines for each phase, from user research to prototype testing and design iteration. It will establish research methods for collecting data directly from users, as well as tools that will be used to create and test user interfaces. This entire process will be supported by transparent communication between all team

members and stakeholders, as well as ensuring privacy and ethical protection in handling user data.

**RESULTS AND DISCUSSION**

Interviews with health workers showed that poor communication between nurses, parents of children, and difficulty in accessing children's health data was one of the most challenging issues. Qualitative Study Instrument: 15 Health workers were sampled according to the ward where the child was managed to get interviewed. The qualitative and in-depth nature of the interviews used allows respondents to describe their experiences and opinions in detail. Many respondents pointed out a lack of time makes it difficult for nurses to provide parents with information on procedures and treatments. It confuses and adds to the anxiety of parents about the health status of their child. Moreover, several report that they struggled in finding relevant health information, which affects childcare.

These findings are consistent with the results of a questionnaire administered by the researchers. Using a triangular approach, these three methods together provide a holistic understanding of the issues that exist in health environment communication. Conclusions: Therefore, this review highlights the importance of finding more efficient ways to improve the exchange of information between health professionals and parents and facilitating access to information. The study also called for communication training for nurses and better accessible health information resources.

In this study, applying the UCD method with the results of each stage as follows:

**Understanding and specifying the user context**

At this stage, a survey will be conducted to parents about the expectations of the KiddoCare application to be built, using questionnaire data that will help define the user's context. This is an important part of the initial research that will guide the subsequent design process. The questionnaire can be accessed at <https://s.id/tUOMT>. The questions used are as follows:

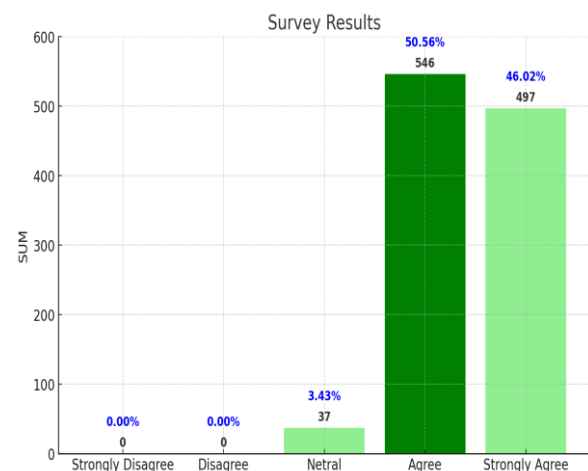
**Table 1. Pediatric Nursing App Survey Questions**

No.	Question
1	Do you feel you need easy access to your child's health information?
2	Do you want the availability of professional nurses for online pediatric health consultations?
3	Would you feel comfortable doing a child health consultation through an online application?
4	Do you need an easy-to-use pediatric nursing app?

No.	Question
5	Do you feel the need to get education about health and child care through the app?
6	Do you want an app that makes it easy for you to schedule a consultation with a nurse or pediatrician?
7	Do you trust the child's health information provided through online applications?
8	Would you find it helpful if there was an online child health consultation facility?
9	Are you ready to use a pediatric nursing app for your child's health needs?
10	Is the in-app consultation schedule reminder feature particularly important to you?
11	Are you willing to pay for in-app child health consultation services?
12	Do you want an app that provides quick access to emergency services for children?
13	Did other users' reviews of the app greatly influence your decision to use it?
14	Do you feel the need for a child health progress tracking feature in the application?

Source: (Research Results, 2024)

From these questions, using answers with a Likert scale as follows: Strongly disagree, Disagree, Neutral, Agree and Strongly agree. From the results of the data obtained, there were 74 respondents who filled in, with the results in Figure 2.



Source: (Research Results, 2024)

**Figure 2. Results of User Answers to Applications to be Built**

Based on Figure 2, an initial survey involving 74 respondents with 15 questions regarding the KiddoCare application was conducted. The results showed a very positive response to the features and ease of access to children's health information offered by the application. It should be noted that, since each of the 74 respondents answered 15 questions, the total number of responses collected was 1,110. Thus, the values shown in the chart, such as 546 responses for "Agree" and 497 for "Strongly Agree," represent the total number of responses rather than the number of individual respondents.



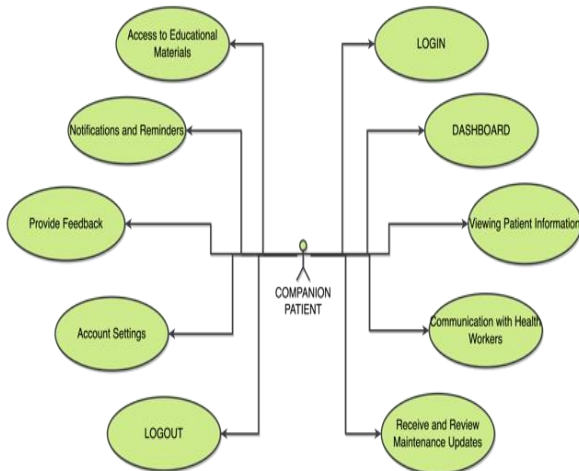


This explains why the values are significantly higher than the total number of participants.

The majority of responses indicated agreement or strong agreement with the need for easy access to children's health information (50.56% agreed and 46.02% strongly agreed). Additionally, many respondents expressed support for features such as the availability of professional nurses for online consultations and various functionalities that support child health management, including consultation schedule reminders, access to emergency services, tracking health progress, and sharing information with nurses. Respondents also showed comfort with the concept of child health consultation through online applications, signifying a high level of acceptance of integrating technology in child care.

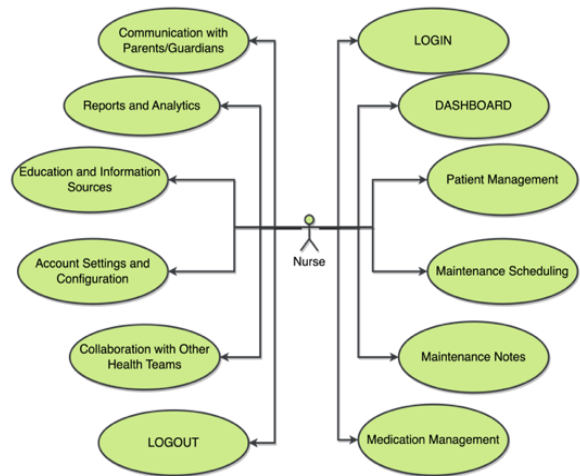
### Specify the user requirements

UML can be used to describe system requirements from a technical and business perspective. UML diagrams such as use case, activity, or sequence diagrams help in documenting the functional requirements and business processes that the application will support.



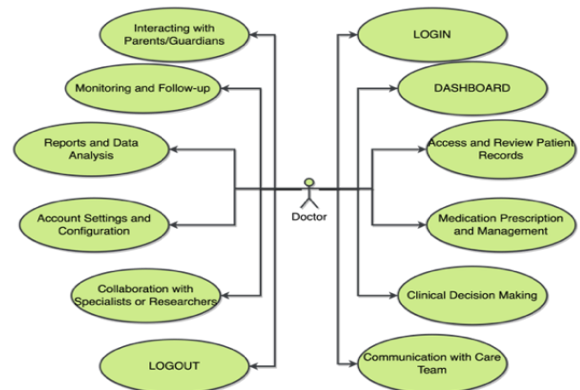
Source: (Research Results, 2024)  
 Figure 3. Use Case Diagram of Patient Companions

Figure 3 illustrates the interaction between patient companions as the use of the 'KiddoCare' app, starting with a login that takes the user to the main dashboard. From here, users can perform various actions such as viewing patient information, communicating with healthcare personnel, and receiving notifications about app maintenance updates. In addition, users can access educational materials, receive notifications and reminders, provide feedback, set up their accounts, and log out of the app. This flow shows how the app provides an organized interface for easy navigation between important features.



Source: (Research Results, 2024)  
 Figure 4. Nurse Diagram Use Case

Figure 4 illustrates the interaction between the Nurse and the app with various features available after login. First-time users log into the dashboard, where they can manage patients, schedule maintenance, log maintenance, and manage medications. From the dashboard, users can also access information and education resources, view reports and analytics, communicate with parents/guardians, and collaborate with other healthcare teams. Account settings and configurations are available to personalize the user experience. This process ends with the option to log out of the application.

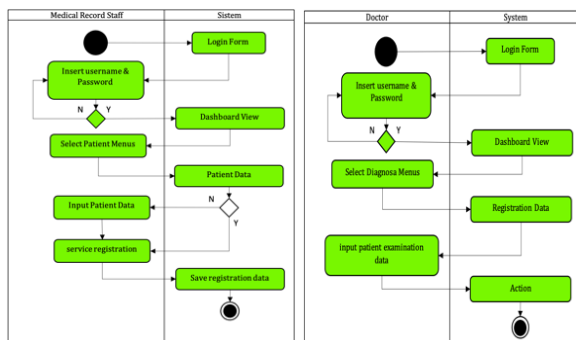


Source: (Research Results, 2024)  
 Figure 5. Use Case Diagram Doctor

Figure 5 illustrates the interaction between Doctor and KiddoCare app. After the login process, users are directed to a dashboard where they can access and review patient records, manage prescriptions and medication management, and make clinical decisions. From the dashboard, there is also the option to communicate with the care team, which is important for effective care coordination. Other features include interacting

with parents or guardians, patient monitoring and follow-up, data analysis and reports, and collaboration with specialists or researchers. Users can adjust their account settings and eventually, log out of the app. There are still other diagram Use Cases in making this KiddoCare application, namely Pharmacy, Medical Record and Management Use Case diagrams.

Next, an activity diagram will be created from the KiddoCare application, which will be shown in Figure 6



Source: (Research Results, 2024)

Figure 6. Activity Diagram KiddoCare

In the 'KiddoCare' app, doctors and medical staff log in to the system via the login form by entering a username and password. After successfully entering, the doctor selects the diagnosis menu and enters the patient's consultation data, while the medical record staff selects the patient menu and enters the patient's data. Both of these activities contribute to the service registration process within the system. For doctors, after the consultation data is entered, the next action depends on the results of such inputs, which may require further actions. Meanwhile, medical records staff are responsible for storing registration data, which completes their process in the system. This flow describes the work process integrated in the 'KiddoCare' application that facilitates efficient patient data management and consultation. For other actors, more or less have the same menu according to their duties on the KiddoCare application.

Next there is a database design to be built, shown in tables 2-8.

Table 2. Patient

Field	Type	Size	Null	Index
Patient ID	Int	11	No	Primary Key
Name	varchar	50	No	
Date of birth	varchar	20	No	
Gender	varchar	10	No	
Address	varchar	100	No	
Medical History	varchar	50	No	

Field	Type	Size	Null	Index
Emergency Contacts	varchar	50	No	

Source: (Research Results, 2024)

Table 3. Nurse

Field	Type	Size	Null	Index
Nurse ID	Int	11	No	Primary Key
Name	varchar	50	No	
Contact	varchar	20	No	
Work schedule	varchar	10	No	
Specialization	varchar	100	No	

Source: (Research Results, 2024)

Table 4. Doctor

Field	Type	Size	Null	Index
Doctor ID	Int	11	No	Primary Key
Name	varchar	50	No	
Contact	varchar	20	No	
Clinic Schedule	varchar	10	No	
Specialization	varchar	100	No	

Source: (Research Results, 2024)

Table 5. Treatment Notes

Field	Type	Size	Null	Index
Note ID	Int	11	No	Primary Key
Patient ID	varchar	50	No	(Foreign Key)
Nurse/Doctor ID	varchar	20	No	(Foreign Key)
Date	varchar	10	No	
Care Details	varchar	100	No	
Notes	varchar	100	No	

Source: (Research Results, 2024)

Table 6. Recipe

Field	Type	Size	Null	Index
Recipe ID	Int	11	No	Primary Key
Patient ID	varchar	50	No	(Foreign Key)
Doctor ID	varchar	20	No	(Foreign Key)
Medicine name	varchar	50	No	
Dose	varchar	100	No	
Administration	varchar	100	No	
Instructions				

Source: (Research Results, 2024)

Table 7. Treatment Schedule

Field	Type	Size	Null	Index
Schedule ID	Int	11	No	Primary Key
Patient ID	varchar	50	No	(Foreign Key)
Date	varchar	20	No	
Schedule Details	varchar	50	No	
Nurse/Doctor ID	varchar	100	No	(Foreign Key)

Source: (Research Results, 2024)

Table 8. Login and access

Field	Type	Size	Null	Index
ID User	Int	11	No	Primary Key
Username	varchar	50	No	
Password	varchar	50	No	
Level (Nurses, Doctors, etc.)	varchar	50	No	

Source: (Research Results, 2024)

In Tables 2 to 8 are displayed the design of the tables contained in the database in the application 'KiddoCare'. The database is organized

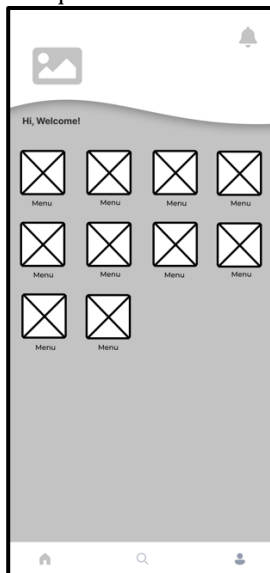


into specific tables that support the functionality of the system. The Patient table stores key information including patient ID, name, date of birth, gender, address, medical history, and emergency contacts, all of which are essential for a comprehensive patient profile. The Nurses, Doctors, and Officers table records professional information such as ID, name, contact, work schedule, and specialization, enabling effective human resource management and coordinated work schedules.

Furthermore, the Maintenance Record Table and Prescription Table become central documentation of clinical interactions and drug management, storing details of treatments administered and prescriptions given, respectively, including dosage and administration instructions. The Maintenance Schedule Table facilitates the planning and scheduling of patient care activities, while the Login Table ensures secure access by storing user credentials and their access levels, ensuring that only authorized staff can access sensitive information. The entire structure is designed to support the day-to-day operations of the 'KiddoCare' app, ensuring that all aspects of patient care are documented, scheduled, and managed to the highest standards.

### Design and produce solutions to meet the user requirements

At this stage it will be designed as a user interface that has been developed based on predetermined requirements.



Source: (Research Results, 2024)  
Figure 7. Wireframe KiddoCare

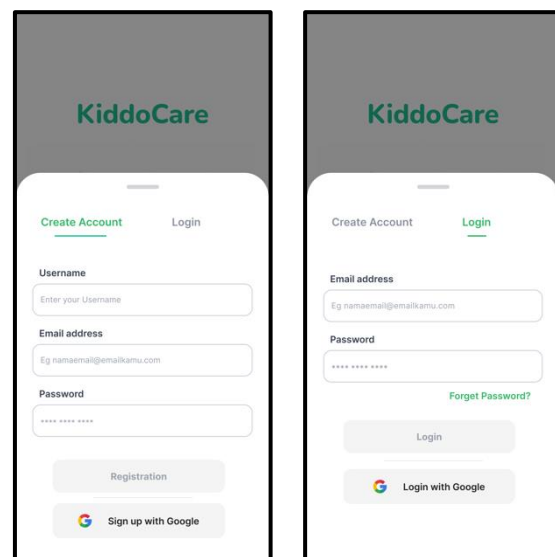
The 'KiddoCare' app wireframe features a basic layout with menu icons and notifications on top, welcome text 'Hi, Welcome!' in the middle, and

a box placeholder marked 'X' labeled 'Menu' for feature navigation. The bottom navigation bar includes generic icons, indicating core navigation elements such as the homepage or search. This is the initial frame before the development of a more detailed design.



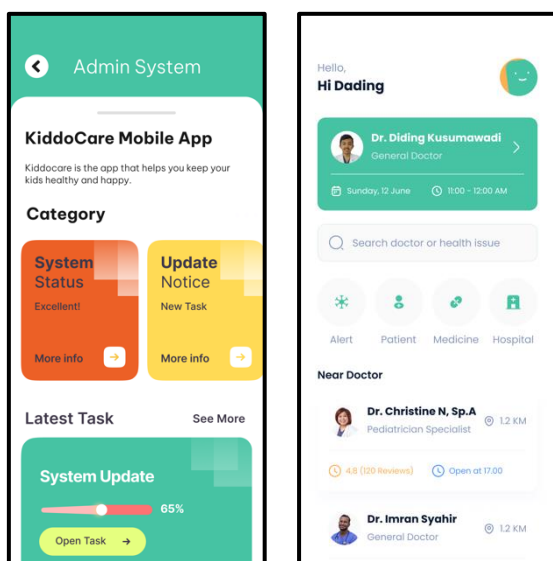
Source: (Research Results, 2024)  
Figure 8. Splash Screen KiddoCare

The splash screen of the 'KiddoCare' application is a visual of the application opening page that aims to give a warm and soothing first impression to its users. At the top, the app name is displayed in a clear, centered font, which makes identification easy. The center-placed logo, featuring an image of a woman and child, exudes a sense of care and protection, reflecting the app's possible focus on child care. Color and graphic elements such as flowers and stars add a sense of excitement and optimism. At the bottom, the app version 'v.1.0' is listed, providing important information about the app version being used. This design effectively communicates the purpose and core values of the app to users.



Source: (Research Results, 2024)  
Figure 9. Registration and Login Page

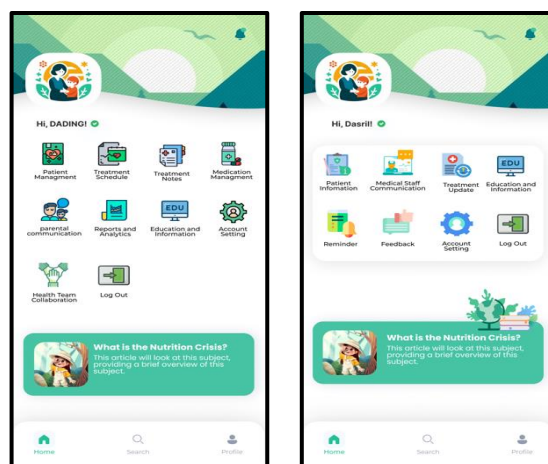
Two of the pages shown are part of the KiddoCare app, with the first page for registration and the second for login. On the registration page, users are asked to enter a username, email address, and password to create a new account, and are provided with the option to register directly using Google. On the login page, users can enter their registered email and password, with additional links for forgot password options and also the ease of logging in via Google. Both of these pages display the above app titles and offer intuitive navigation for new and existing users alike.



Source: (Research Results, 2024)  
 Figure 10. Admin and Doctor Dashboard pages

In the KiddoCare application, the admin dashboard page displays important information and quick navigation for system management. There is a slogan that explains the purpose of the application, which is to maintain the health and happiness of children. Important categories like 'System Status' and 'Update Notifications' are prominently displayed, giving admins instant access to current status and new tasks that need attention. In addition, there is also a summary of recent tasks with progress indicators and the option to see more information.

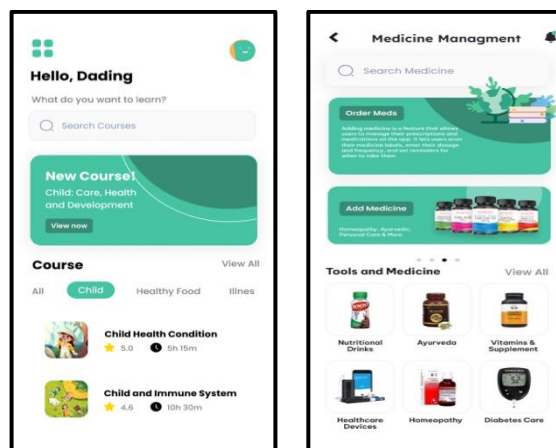
Meanwhile, the doctor's dashboard features personalized greetings and quick access to schedules, patients, and medical information. There is a search feature to search for doctors or specific health issues. The 'Nearest Doctors' section displays a list of doctors with their specialties, reviews, and availability information, making it easy for users to find and contact the necessary healthcare practitioner. It provides an efficient platform for doctors in managing their schedules and interacting with patients.



Source: (Research Results, 2024)  
 Figure 11. Nurse and Parent Dashboard Page

The image shows the dashboard of the KiddoCare app designed for nurses, with various icons representing app features such as patient management, care planning, care, and medication management. There's also access to education and information sections as well as the ability to log out of the app. A personalized greeting 'Hey Dad!' with educational articles at the top and educational articles at the bottom, adds a helpful resource. The navigation at the bottom gives easy access to the homepage, search, and profile.

The second image is a parent dashboard that focuses on more limited features such as child information, medical staff communication, medication schedules, and education and information. As with the nurse dashboard, there are personalized welcome and education articles, as well as the same navigation at the bottom. This shows that the KiddoCare app provides an interface that matches the user's role to support an intuitive and effective user experience.

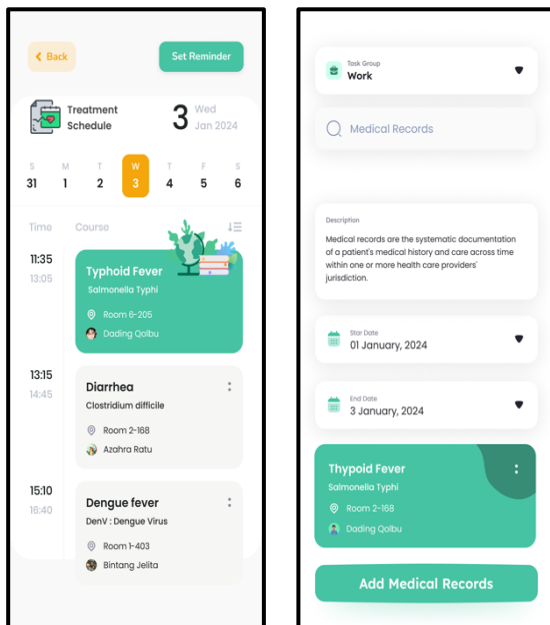


Source: (Research Results, 2024)  
 Figure 12. Drug Education and Management Page





The education page on the KiddoCare app greets users by name and provides a search box to find specific courses. New information highlights are available at the top, with options to see more information. Below, the information offered is categorized and accompanied by important information such as ratings and course duration, designed to facilitate parents in gaining knowledge regarding child health and development. While the drug management page provides functionality to search and add drugs into the system. This includes a neatly organized list of medicines and health product categories for easy access and traceability, catering to the needs of pharmacy professionals in drug and device inventory management.



Source: (Research Results, 2024)  
Figure 13. Treatment and Medical Record Page

The Treatment page on the KiddoCare application displays a daily treatment schedule with a clear date and day. Each time slot outlines the type of treatment, the name of the disease, and the location of the room, along with the patient's name, making it easier for nurses to track and manage the patient's treatment schedule. A reminder feature can be set to ensure adherence to the treatment schedule. The Medical Records page is designed for medical records staff, allowing them to add and view patient medical records. This page provides a summary of medical records with options to expand and get more detailed information. The ability to add new medical records is available, ensuring that patient health information is up-to-date and easily accessible to authorized healthcare providers.

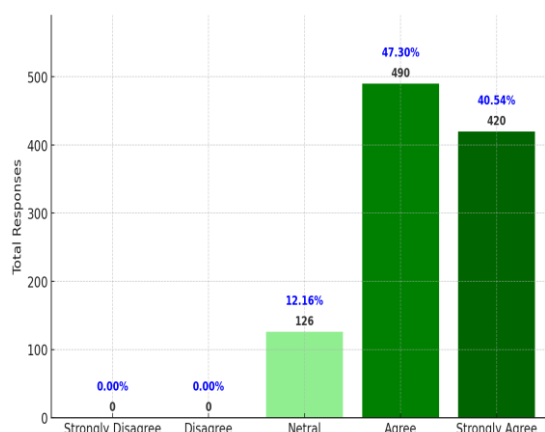
### Evaluate the solution against the requirements

Program Results, showing the implementation and functioning of the application in practice. This will be part of an evaluation to see how the application performs in the real world and whether it meets the requirements that have been set.

After the App Deployed Questionnaire, which collects feedback from users after they use the app. Data from these questionnaires is critical for subsequent design iterations and to ensure that applications continue to be user-centric. At this stage, a survey will be conducted to parents about the KiddoCare application that has been used, using questionnaire data that will help define the user's context. This is an important part of the initial research that will guide the subsequent design process. The questions used are as follows:

- How easy is it for you to understand the childcare instructions in this app?
- How useful is the child health information provided by this app to you?
- How well does the online consultation feature in this app meet your needs?
- How satisfied are you with the quality of the child's health advice provided by this app?
- How accurate is this app in monitoring your child's growth and development?
- How easy is it for you to find the right treatment solution for your child on this app?
- How well does this app provide emotional support to you as a parent?
- How satisfying are the childcare recommendations that this app gives you?
- How much trust do you have in the child's health information presented by this app?
- How easy is it to manage your child's care schedule through this app?
- How helpful are the children's health education materials that this app provides to you?
- How safe do you feel about the security and privacy of your child's health data on this app?
- How easy is it to share your child's health information with health professionals through this app?
- How likely are you to recommend this app to other parents?

From these questions, using answers with a Likert scale as follows: Strongly disagree, Disagree, Neutral, Agree and Strongly agree. From the results of the data obtained, there were 55 respondents who filled in, with the results in Figure 14.



Source: (Research Results, 2024)  
 Figure 14. User Answer Results After Application Is Used

The results of a questionnaire involving 74 respondents with 14 questions showed a very positive response to the pediatric nursing application. It is important to note that each of the 74 respondents answered 14 questions, resulting in a total of 1,036 responses. This explains why the percentages, such as 47.01% 'Agree' and 41.17% 'Strongly Agree', were calculated based on the total number of responses, not the total number of individuals.

Specifically, 47.01% of the responses were classified as 'Agree', and 41.17% were 'Strongly Agree', which indicates a strong positive perception toward the application. Meanwhile, 11.82% were categorized as 'Netral', and none of the responses fell into 'Disagree' or 'Strongly Disagree'. This distribution demonstrates that most users expressed high satisfaction and support for the application. The high percentage of positive responses highlights the success of the application in meeting user needs and expectations, particularly in the context of pediatric nursing.

### CONCLUSION

This research applies User Centered Design (UCD) methodology for developing the 'KiddoCare' pediatric nursing mobile application. UCD is a design approach that involves users in all phases of development to ensure the final product meets their needs. This process includes four stages: (1) understanding the user's context; (2) determine user needs; (3) design and produce solutions that meet user needs; (4) evaluate solutions to these needs. The initial survey of 74 respondents indicated that a majority agreed or strongly agreed with the importance of easy access to child health information (50.56% agreed and 46.02% strongly

agreed). These findings confirm the need for apps designed to meet unique child care needs, an issue that has been identified as the focus of this research since its inception.

'KiddoCare' is designed to answer this need by providing flexible and adaptive nursing solutions, which can be tailored to the individual needs of each child. The advantage of 'KiddoCare' lies in its function that supports effective communication between nurses and pediatric patients, as well as easy access to essential health information. The evaluation of the application through 55 respondents with 14 questions resulted in very positive feedback. The majority of respondents (47.01%) expressed 'Agree' with the statements in the questionnaire, while 41.17% stated 'Strongly Agree'. About 11.82% gave a 'Enough' response, and none of the respondents expressed 'Disagree' or 'Strongly Disagree'. Thus, the 'KiddoCare' application is considered very adequate and feasible for use in the context of pediatric nursing.

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