

HEALTHYKIDS: WEIGHT MANAGEMENT MOBILE APP FOR CHILDREN

Izatul Nabilah Mohd Nasirrudin and Nadia Abdul Wahab
*College of Computing, Informatics and Mathematics,
Universiti Teknologi MARA, Perlis Branch
izatunabila28@gmail.com and nadiawahab@uitm.edu.my*

ABSTRACT- The goal of this study is to create and build a mobile application to assist parents in helping their children get a healthier lifestyle. This mobile application used persuasive technology principles such as principle of suggestion, principle of tunnelling, principle of motivation and principle of self-monitoring. The Design Science Research Methodology (DSRM) was used in the development of this project. The DSRM model consists of six stages: problem identification and motivation, objective definition, design and development, demonstration, evaluation, and communication. By adhering to this methodology, the mobile application was designed to incorporate persuasive technology principles and provide users with instructional videos as guidelines for utilizing the HealthyKids application. HealthyKids is a mobile application that has been developed using Dart programming language, PHP, and SQLite for database storage. This application uses Flutter as an Integrated Development Environment (IDE) tool. The study included 30 participants who were parents of children aged between five and 12 and were actively involved in monitoring their children's physical activities using the HealthyKids app. Additionally, the application was evaluated by the user using a User Experience Questionnaire (UEQ) via google form. Based on the results and findings, most users found the system attractive, perspicuity, efficiency, dependability, stimulation, and novelty.

Keywords: Persuasive Technology Principle, Weight Management, Mobile App Development, DSRM Model and User Experience Questionnaire (UEQ).

1. INTRODUCTION

The HealthyKids Weight Management Mobile App for Children is an application designed to assist parents in fostering healthier lifestyles for their children. Leveraging the power of persuasive technology principles, HealthyKids aims to empower parents by providing them with the necessary features and resources to guide their children towards a balanced and wholesome way of living. HealthyKids offers a unique blend of personalized guidance that can help parents in monitoring their children's health and engaging features to support parents in their journey towards raising their kids. By integrating persuasive technology principles, HealthyKids app actively motivates and inspires parents to make positive changes in their children's lives.

2. METHODOLOGY

The Design Science Research Methodology (DSRM) was chosen as the methodology for HealthyKids app development with integration of persuasive technology principles. There are six phases which are problem identification and motivation, objective definition, design and development, demonstration, evaluation, and communication. The problem identification and motivation are where the researcher has to understand the user's current problems and starts to define what kind of solution the project will be. The design phase is the third phase of the Design Science Research Methodology (DSRM) model. A few tasks must be completed by the researcher to get a successful system design. Furthermore, to develop this application, Flutter has been used to write and run the programming code. To complete the development process of HealthyKids app development, integration of persuasive technology principles was done during the development phase. Next, the Demonstration phase, the researcher made a video demonstration to guide the user through how the mobile application would work. After that is the evaluation phase. The researcher conducted a User Experience Test with User Experience Questionnaire (UEQ) as part of the evaluation of the user experience testing activity. By the end of this phase, objective 3 had been achieved. Lastly is the communication phase where after the researcher completed the mobile application reports, communicated with the supervisor to improve the report writing, and presented it to the examiners and supervisor after completing the task.

3. RESULTS AND DISCUSSION

User Experience (UX) Testing is utilized in this study to assess the user emotions, understanding and exceptions towards the system. The testing was conducted with 30 respondents from parents of underweight children, healthy children, overweight children, and obese children. The results for this test will be used to understand how users feel about this application. During the UX Testing, the users were given a chance to explore and evaluate the mobile application system. A questionnaire regarding the user experience aspects of this application is given after system exploration so that all users can evaluate the system. The researcher has used the User Experience Questionnaire (UEQ) to evaluate the HealthyKids application. It provides valuable insights into the specific demographic groups that participated in the survey, allowing for a better understanding of their perspectives and responses.

4. NOVELTY OF RESEARCH / PRODUCT

Because of the COVID-19-related lockdown, lifestyle choices have changed, which may have contributed to an increase in weight gain (Tsenoli et al., 2021). Children with overweight or obese attempted to lose weight more frequently than healthy children, though rates of attempted weight loss among those at a healthy weight were still high (Brown et al., 2016). Finally, the currently available technology is insufficient to untangle the problem of childhood obesity. Children are unable to constantly receive non-technological weight control programs due to cost, transit issues, and lack of provision (McMullan et al., 2020).

5. CONCLUSION

HealthyKids application could provide more videos of physical activities that have a Malays subtitle to make parents and their children able to use this application easily and understandable. Besides, the HealthyKids app must allow parents to put their children's image before and after using this application. Therefore, it is highly recommended to develop an application that is more user-friendly for the parents and their children. Next, the User Experience Testing was conducted to evaluate the attractiveness, perspicuity, efficiency, dependability, stimulation, and novelty of the system. From the findings it is found that six scales of UEQ help the researcher to understand the user's perspective towards the HealthyKids app. The results from (UX) Testing indicate that most of the respondents had a good experience when using the application.

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