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VALIDITY ANALYSIS OF WATDIAB AS AN ANDROID-BASED DIABETES NURSING EDUCATION APPLICATION

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Abstract

An android-based educational application about caring for diabetes patients in the biopsychosocial spiritual aspect called WatDiab has been designed. In order to be used properly and meet the objectives, this application must be tested for validity which is carried out in the diabetes sufferer community. so this research aims to obtain the validity and reliability of the application. The design used in this research is exploratory quantitative with the aim of seeing the validity of the WatDiab Application. Six diabetes experts in the medical and nursing fields were selected who were given the task of conducting content validity testing validity of the WatDiab application. Validity test analysis obtained an average item value of good except for the format aspect of 0.79 and the item proportion value obtained was 0.87, so the WatDiab application was declared feasible**.** Items in the application need to be reviewed to be improved so that the reliability value is expected to be better. The application content is good then the application can be used after being reviewed and fixed.

Keywords: Application, Diabetes Nursing, Validity.

1. INTRODUCTION

Since the Covid 19 pandemic until now, many special applications for treating diabetes mellitus (DM) have been developed. This condition is in line with the increasing number of DM sufferers in Indonesia who require attention. Diabetics have several physical difficulties so information and care services are not easy to obtain.

Advances in communication and information technology in the form of smartphones have the opportunity for the elderly to have the opportunity to access information and nursing services easily. With the latest information and communication technology facilities, applications for elderly health in Indonesia have developed. These applications, especially in the health sector, have been widely developed by the government, individuals and educational institutions to accommodate these conditions [1].

Diabetes Mellitus (DM) is one of the non-communicable diseases (PTM) which is a precursor to other diseases such as hypertension, heart disease, and stroke. It is very necessary to increase the knowledge, attitudes, and correct actions of patients and families to prevent these complications by providing health education through applications on smartphones can improve the knowledge, attitudes, and behavior of DM sufferers [2]. Conditions like these have led to increased awareness of the need for changes in diabetes care Industrial era 4.0.

Applications on smartphones make it easier for diabetics to provide diabetes counseling and home foot wound care services (homecare). However, the use of applications has several weaknesses and shortcomings that need to be followed up [3]. But currently the applications that have been developed need to be refined and tested to be operational as applications on smartphones in reducing the risk of diabetic feet [4]. Many types of educational applications use. It is based on the Android system because it is more effective, cheaper and has a lot of users [5]. The use of smartphones is an alternative media that can be used to convey information needed by everyone without any time or place restrictions so that information can be quickly accessed anytime and anywhere [6].

Based on the experience of the Covid 19 pandemic that has occurred, it teaches us to develop health services by utilizing information technology. One of these technologies is a

smartphone whose use is very flexible, easy and can be used repeatedly and can be used anywhere and anytime when the signal is affordable. The applications that currently exist are not entirely educational applications for people with diabetes to prevent foot wounds. Most of the features in the application include: Insulin and medication recording, data submission and recording, diet recording and weight management.

This Android-based educational application was chosen because of its convenience and free application compared to other operational-based applications.[7]. This study aims to obtain an overview of the validity and reliability of the applications that have been developed so that they can be continued for further research and ultimately diabetes sufferers can use and utilize them.

2. MATERIAL AND METHOD

The exploratory quantitative design used in this research aims to obtain an overview of the validation of the WatDiab Application. The application is compiled using JavaScript programming and is named the WatDiab application and can be downloaded on Playstore. This application consists of various features, namely: Biodata, Foot care consisting of a foot care questionnaire then videos and pocket books about learning to care for feet, preventing foot wounds and foot sensitivity touch tests. Then the feature about Self-Efficacy contains a link to the Facebook group, the Persadia group and the Prolanis group. Next, a Spiritual Well-being feature was created consisting of videos, guidebooks, prayers to increase gratitude, patience and sincerity. Validity testing was carried out to obtain good application design and validity [8]. The research stages were carried out using three, namely: First, prepare the contents of the application according to practice guidelines. Second, designing the application is carried out by information technology experts. Third, content validity was reviewed by two internal medicine doctors and four diabetes nurses.

3. RESULT DAN DISSCUSSION

The following is a display of the front page (Figure1) and feature pages of the WatDiab educational application (Figure 2).

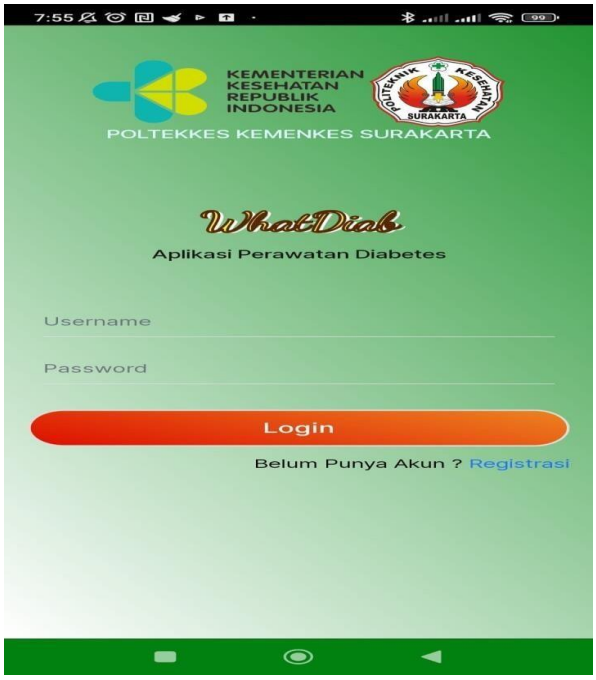

Figure 1. *Feature of The WatDiab Application*

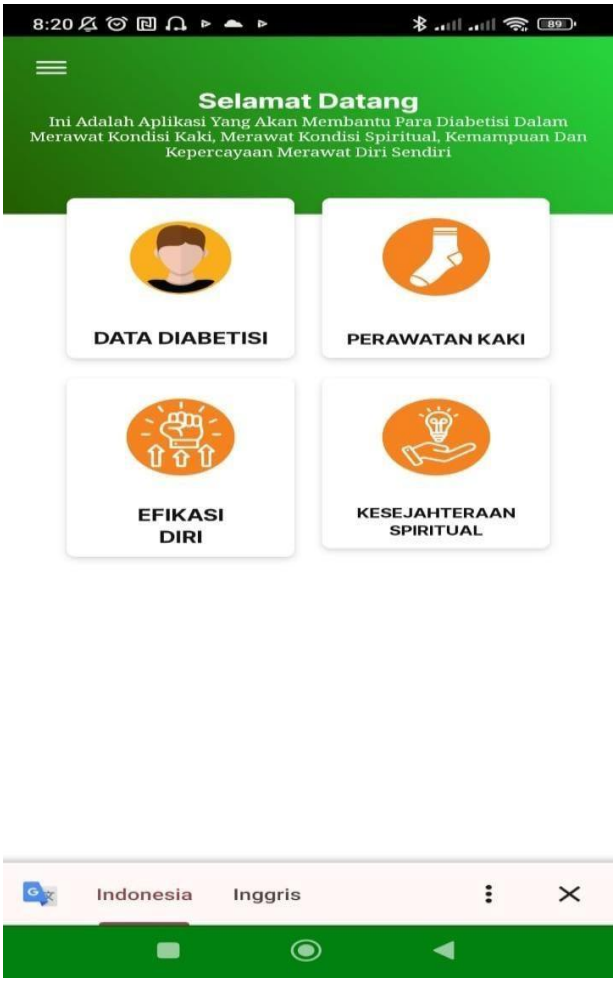

Figure 2. *Feature of WatDiab Application*

The validity of the WatDiab application content that was tested can be seen as follows:

Table 1. Content Validity of WatDiab Applications

Variable	Proporsi						Mean i-CVI
	R1	R2	R3	R4	R5	R6	
Contain	1	1	1	1	1	1	1
Accuracy	1	0,75	1	1	1	1	0,96
Format	0,75	0,75	1	0,75	0,75	0,75	0,79
Easyof Use	0,75	1	0,75	0,75	0,75	0,75	0,83
Timeliness	1	1	1	1	1	1	1
			S-CVI	0,916			

Based on table 1, it can be seen that the results of the content validity analysis according to the experts who provided the assessment, namely the average content validity item is valid except for the format aspect of the WatDiab application, which shows less valid, namely 0.79 (≤ 0.83). This is a condition that indicates the need for a review of the format and ease of use features because it has a value of 0.83, meaning it is at the marginal value limit which is still acceptable but needs improvement.

This was discovered when research was carried out on foot exercises for diabetics who received nonpharmacological therapy. The research found that in order to make the application easy to implement, it is necessary to review the format of the four main menus in the application

features such as foot exercise procedures, foot exercise schedule, guidance and consultation, and health information when designing the application. [9].

For the easy to use aspect, a review needs to be carried out for improvements so that it is easy to use because the application for educating self-care practices is recommended to use pictures and simple words [10]. Smartphones used for education are the latest and most promising service modality for diabetes sufferers. Although some smartphone applications are designed based on appropriate studies and priorities, a review to create as few features as possible in an application is very necessary. [11].

This study is in line with the opinion that it is necessary to pay attention to the usability aspect so that users can easily operate it and provide benefits when using the application because it is easy and the best design in feature design such as using images [12]. The application design does not make it difficult for users with writing that appears clear, such as choosing bold capital letters so that it satisfies application users [13]. Thus, evaluation and application development must be continued, even if possible, a redesign is carried out to make it easier for users [14].

Reviewing the application format needs to be carried out, such as the procedures for using the application, icons and buttons on the application that are easy to see, such as using images or text that are clearly visible [15], are also attractive and not difficult to operate, involve many senses so it is necessary to add images, animations or videos so that they are more attractive to users [16], [17].

4. CONCLUSION

The results of the study show that the WatDiab application has a good validity test value except for the format and easy to use aspects. As a consideration, it is recommended to look again at aspects of ease of use and format. Then it was revised so that it was easier for application users to use it.

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