Development of a Palliative Client Supporting Screening System in a Community Based on Information Technology

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Abstract - Automation trends, the latest data exchange, cloud computing, the Internet of things (IoT), artificial intelligence or artificial intelligence (AI) and all virtual things that can facilitate human operational activities. One of the benefits of the industrial revolution era 4.0 that can be applied is the palliative client screening system in the community by using a smartphone application. The purpose of the research is to develop a support system for screening palliative patients in the information technology-based community. The System Development Method uses the FAST (Framework for Application of System Techniques) method. There are 8 phases in developing the system using the FAST method. The phases are as follows: scope definition, problem analysis, needs analysis, logical design, decision analysis, physical design, constructing and testing, and installation and delivery. The results of this study are palliative care patient screening applications with the application address Google Drive: https://drive.google.com/open?id=1tTOxof fNPrAQxOYtcZYPEl2izgo69mrm, with a category if a score of 0-2 does not need palliative intervention, total score 3 means observation while total a score of more than or equal to 4 requires palliative consultation. And proceed with checking the quality of life, which is divided into two categories, namely the quality of life is good and the quality of life is bad. It is expected that health practitioners can take advantage of applications on Android smartphones, for the advancement of knowledge that can be easily accessed by the general public.

INTRODUCTION

Automation trends, the latest data exchange, cloud computing, the Internet of things (IoT), artificial intelligence (AI) and all virtual things that can facilitate human operational activities. Various sectors affected by the industrial revolution 4.0, one of which is the health sector. The results of a survey of 622 business leaders from various industries around the world by The Economist Intelligence Unit, showed that a significant majority of the surveyed executives believed that health was a sector that would benefit greatly from the impact of this fourth Industrial Revolution.[1]

Currently, consumer technology that uses mobile phones and fitness equipment that is used everyday can collect a variety of detailed data about a person's health and fitness status. Data like this has the potential to transform, not only individual health and medical needs, but also for health research. There is even a study also conducted by The Economist

Intelligence Unit that says 50% of doctors believe that smartphone technology really empowers patients so that they have a role in proactively regulating their health.[1]

In the future it is very possible that senior citizens will receive medical check-ups in comfort even in their own homes. Telemedicine can also bring medical care to people in remote locations.[2] One of the benefits of the industrial revolution era 4.0 that can be applied is the palliative client screening system in the community by using a smartphone application. Smartphones are now a significant public consumption, meaning that all families must have a smartphone. A palliative client screening application can be utilized in order for the client to check his health status including whether or not a palliative client. By knowing the status of the client as early as possible the client can plan what should be done to maximize the quality of life of the client. Likewise to the people around him who will be affected, can plan what will be done next.

Palliative care is care for a patient and his family who have incurable diseases, but can do so by maximizing the quality of life of patients and reducing disruptive symptoms, reducing pain by paying attention to psychological and spiritual aspects. Patient needs at an advanced stage of a disease are not only the fulfillment or treatment of physical symptoms, but also the importance of support for psychological, social and spiritual needs which are carried out with an interdisciplinary approach known as palliative care.[3,4]

Palliative care is a form of service that can provide a better quality of life for patients. Palliative care aims to improve the quality of life for both patients and their families from life-threatening disease problems. Its implementation can be done through prevention, by means of early identification of the disease experienced, the handling of pain problems, and other problems caused by the nature of the disease, namely physical, psychosocial and spiritual.[5]

The results of the study of students of community professional practice, several times found clients with very long health problems and were reluctant to go to the doctor, even though the disease was classified as an advanced stage. If the client knows about his health problems early on, much can be done by the sufferer himself or his family will do in order to meet his bio-psycho-social and spiritual needs. Therefore it is necessary to have an information system that can provide palliative client instillation in the

community, so researchers are interested in conducting research on the Development of Screening Support Systems for Palliative Patients in Information Technology- Based Communities, the results of this research strongly support the vision of nursing study programs. The purpose of this study is to develop a system of screening support for palliative patients in the information technology-basedcommunity.

RESEARCH METHODS

This study used a pre-experimental design with a Posttest Only Design, in this design there was absolutely no control and internal validity. Screening palliative patient diagnoses in the community is done by developing the system into a computer application. Observation of the results of the development is carried out by the application user, that is, people who have family members suffer from illness and may not be cured. Development will continue until the user feels satisfied with the application. The results of research observations with this Posttest Only Design design only provide descriptive information that is the effectiveness of the community using the application in screening palliative patients right to the needs of patients.[6]

This research was conducted in the Information Systems Laboratory of the Faculty of Computer Science, Sriwijaya University. Data Analysis Method, in this study the data analysis will be carried out through the process of sorting the data organizing into patterns, categories and basic units of description so that themes and hypotheses are formulated.
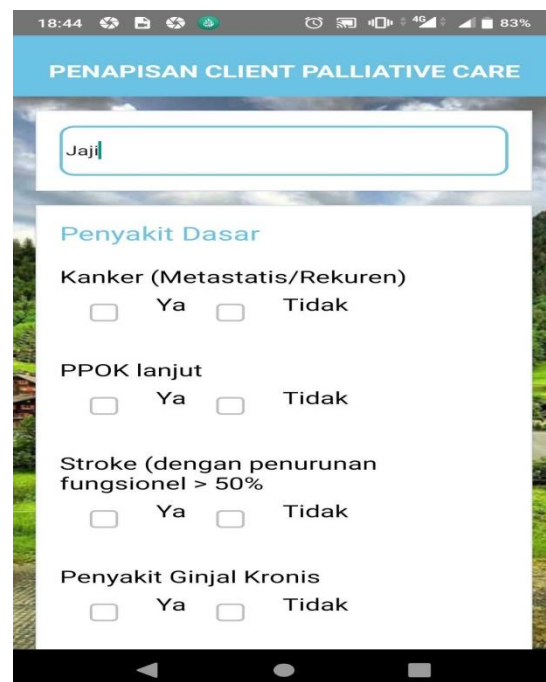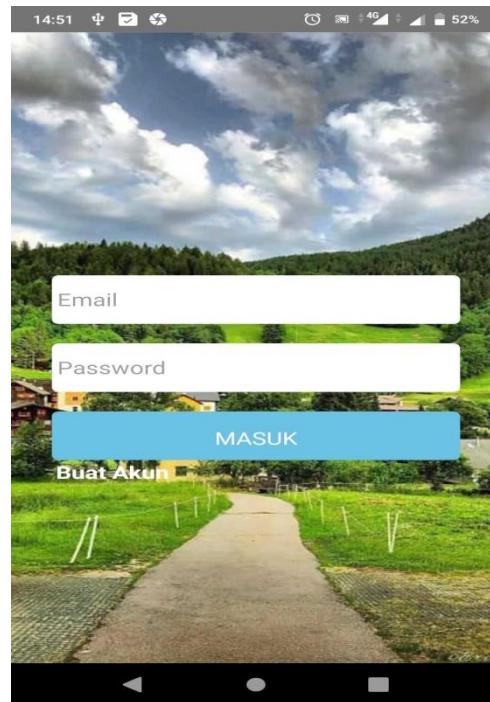
SYSTEMS DEVELOPMENT METHOD

The development of this system uses the FAST (Framework for Applications of System Techniques) method. Meida (2011)[7] said that this FAST method has an output to help solve problems, opportunities, and others.

Whitten (2000, quoted by Meida 2011)[7] writes that there are 8 phases in developing a system using the FAST method. The phases are described as follows: definition of scope, problem analysis, needs analysis, logical design, decision analysis, physical design, constructing and testing, and installation and delivery.

RESULT AND DISCUSSION

The results of this study are palliative care patient screening applications with the Google Drive application address: **https://drive.google.com/open?id=1tTOx offNPrAQxOYtcZYPEl2izgo69mrm**, in the application itself contains the front page looks like the following picture:

Screening of palliative patients by score category, if a score of 0-2 does not need palliative intervention, a total score of 3 observations while a total score of

more than or equal to 4 requires palliative consultation. Then proceed with checking the quality of life, which is divided into two categories, namely the quality of life is good and the quality of life is bad. This application has been tested on 17 AP students in the final semester, trialed to regular final students, and trialed using patient simulations in the community. The results obtained, this application can be used for screening palliative patients in the community and do not get significant obstacles.

This research is in line with the research of Prime, Fachruddin, Siti Madanijah, and Ikeu Ekayanti[8], entitled The development of nutrition education based on Android and website and the effects on behavior about balanced nutrition in primary school students, with the results of educational media research Android-based nutrition is better than other media. Nutrition education interventions improve balanced nutrition behavior for the better.

Likewise according to the results of Jaji's research,[9] with the title Family Experience Caring for Family Members With Palliative Care (Phenomenology Study), the results of data analysis found seven themes, namely: the concept of pain (modern and traditional), the causes of the illness suffered, trying to bring and treat clients who are sick, trying to meet all the

needs of clients, the condition of the client is very time-consuming people around him, the transition of roles, everything is left to the creator (resigned). This means that the application of palliative client screening in the community, can be used by clients who need it, in order to anticipate the severity of health problems, and as one of the initial solutions, what families must do in overcoming palliative client health problems before making a resigned decision.

The rapid development of technology today requires us to be responsive to everything related to sophisticated technology as a tool for communication. Technology will always develop quickly and cause various influences on human life. The rapid technological advances in the field of communication have given birth to many innovations and new ideas, ideas aimed at facilitating the process of human communication becoming more effective.

CONCLUSIONS AND RECOMMENDATIONS

The results of this study in the form of palliative care patient screening application with the application address Google Drive: **https://drive.google.com/open?id=1tTOxoff NPrAQxOYtcZYPEl2izgo69mrm,** this application has been tested on 17 AP

students last semester, tested on final regular students, and tested by using a simulation of patients in the community. The results obtained, this application can be used for screening palliative patients in the community and do not get significant obstacles. Technology always develops rapidly and has various effects on human life. The rapid technological advances in the field of communication have given birth to many innovations and new ideas, ideas aimed at facilitating the process of human communication becoming more effective.

Based on the results of the study, researchers advised health practitioners, especially nurses, that the application of palliative client screening could be utilized in the context of screening in the community. Its use is easy, because this application is operated with an android smartphone, which can be easily accessed by the general public.

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