Self Care Nursing: Teleassessment Nursing with Chatbot Application the Coronavirus Disease-19 Pandemic Period in North Sumatra

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Abstract

AIM: Patients and families can independently identify health conditions through the chatbot teleassessment nursing application.

METHODS: Design descriptive with a cross-sectional approach. The sampling technique used in this study was a purposive sampling technique. Setting at African Social Research Initiative (ASRI) Wound Care Pancing Medan, North Sumatra. One hundred and forty-seven at ASRI wound care clinic and 107 samples with characteristics that all people who have Android and have a telegram application. Data were processed and carried out by descriptive statistical tests. Tested the use of chatbots on outpatients at the ASRI wound care clinic. Participants are first taught how to use the application. This was carried out for 5 months from March to July by testing the use of a chatbot on outpatients at the ASRI wound care clinic.

RESULTS: The results of research on teleassessment nursing found that 73 respondents (68%) could do it independently and 34 respondents (32%) could not do it due to their first experience of using chatbots, unstable internet networks, not yet proficient in using applications due to age and low educational background. The study also identified the respondent's ability to make decisions about using health services.

CONCLUSION: The telassessment nursing chatbot application allows patients and families to assess general conditions, danger signs and make decisions to use health services.

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Introduction

Currently, the world is busy with the coronavirus disease (COVID-19) pandemic, including in Indonesia [1], [2]. Anxiety and stress are the reactions of every society to a threatening situation [3], [4]. This condition makes people aware of the need for efforts to spread knowledge to educate the public. Education to the public is useful as a provision for someone in making decisions, at least for prevention so that COVID-19 does not attack us. Based on this, all people need additional knowledge and information, especially about health-related to COVID-19 [1]. The community needs and wants to get information easily, quickly, and accurately [5]. However, the government has decided to dismiss employees for a long time or what is commonly referred to as a lockdown to continue carrying out physical distancing making it difficult for the public to get information including health. Therefore, the community demands an online-based information delivery system that can be accessed anywhere and anytime. The delivery of this health information will make it easier for people to carry out Self Care: Teleassessment Nursing and access information without having to go to health services [6].

To get this service, we need a service that can provide real-time responses [7]. We also need coordination of caring and delivery of health services through telecommunication and information technology [8]. There have been many studies suggesting that using the telegram application can get the satisfaction desired by patients. As for the advantages of Telegram application, namely the application that is not paid, sends messages faster, can be accessed from various devices simultaneously, can share files with a large size, the capacity of a larger number of group members, free stickers, good security and has bot features [9]. The bot feature in telegram is a machine that can be used to communicate which is commonly called a chatbot. Therefore, it is necessary to have a chatbot system as a solution to facilitate communication [10], [11].

The chatbot is software or programming designed to describe a process of communication or interaction with chatbot users via text or voice messages [12], [13], [14]. However, in this study, the chatbot used is in text form. Conversation interactions via text messages and those generated based on filtering the words that have been input by the user and will generate responses based on the knowledge of the chatbot. Therefore, the communication or conversation that has occurred is as if it were carried out by two humans who were interacting [12], [15].

The Chatbot will retrieve information about products from the database used for order management system.

Methods

The design used in this study was descriptive with a cross-sectional approach which was conducted on March 2021–July 2021. This research was conducted at African Social Research Initiative Wound Care Pancing Medan, North Sumatra. The sampling technique used in this study was a purposive sampling technique with a population of 147 people. The sample size was determined by using the Slovin formula with a 0.05% approach where a sample of 107 respondents was obtained. The characteristics that all people who have Android and have a telegram application. The data that have been collected was processed and carried out by descriptive statistical tests.
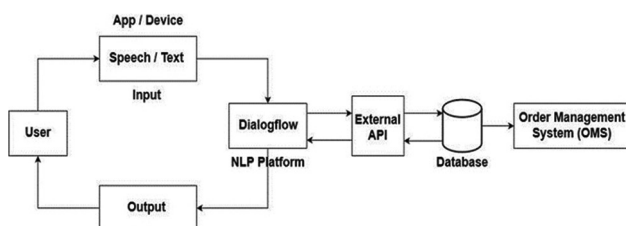

Figure 1: Describes the workflow of the system chatbot in handling inquiries from customers [15]

Nursing teleassessment research has received permission from the Nursing Health Research Ethics Commission University of North Sumatera with number 2165/VI/SP/2020. Telegram platform forward chaining method as a portal for customers to interact by using the API breaking sentences into words. The steps taken are identification and analysis of design requirements, describing the architectural design, making inference engine signs of general conditions, danger signs, and patient and family decisions to overcome the disturbances experienced and testing the black box method. Chatbot integrated with CSOs who will act as customer service who will serve customers when asking for health information, as shown in Figures 2-4.
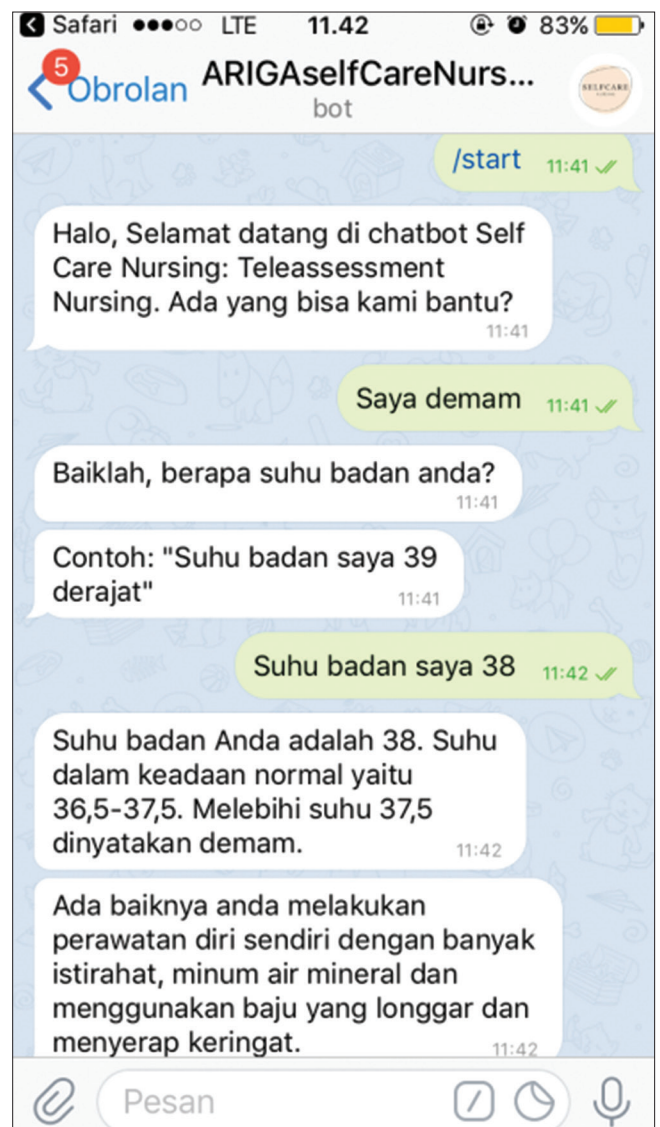
Figure 2: Display chatbot in telegram application, describes a bot providing knowledgeable health information asked by the customer. The chatbot displays information about signs of general health conditions

By displaying various types of information to Chatbot users, programmers can find out how independent patients do Self-care Nursing: Teleassessment Nursing by having independent respondent criteria are respondents who can respond and get results from the information the respondent wants to ask.

Criteria for respondents who are not independent in doing Self Care: Teleassessment Nursing are respondents who do not have access to using the telegram application with the Chatbot system and customers who cannot interact properly using the telegram application with the Chatbot program.

This research was conducted by providing services to the community to answer normative and repetitive questions by using a chatbot so that respondents can do teleassessment nursing independently and make decisions to use health services.

Figure 3: Chatbot display in the telegram application (cont.), describes the chatbot displays information about danger signs regarding customer health. The chatbot also provides information to customers regarding customer inquiries
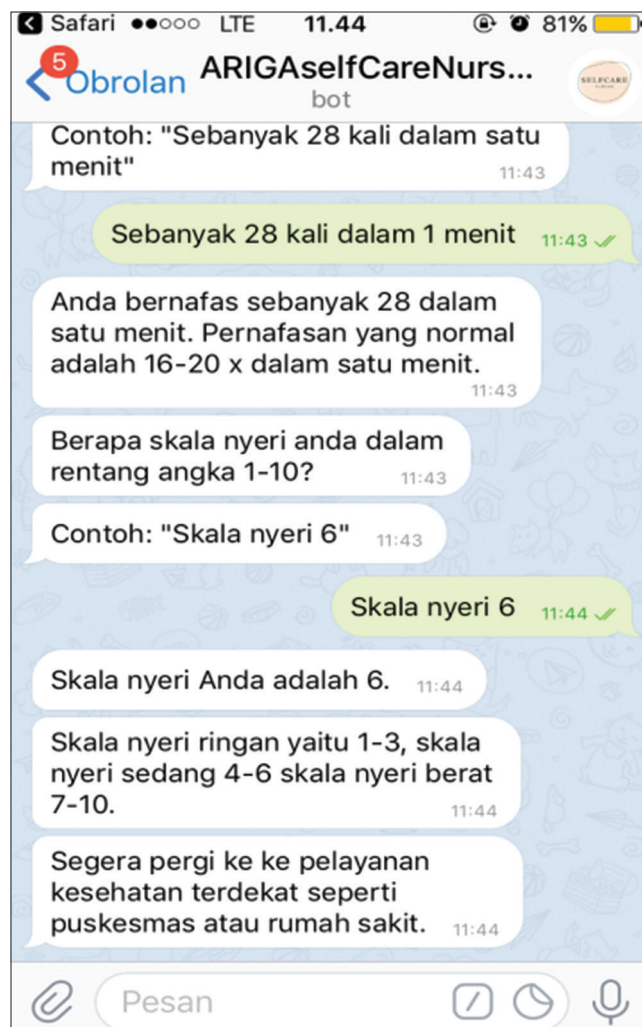

Figure 4: Chatbot display in the telegram application (cont.), explains Chatboti provide advice to customers to make decisions in dealing with problems experienced by customers related to customer health

Results

Table 1 shows the result of teleassessment nursing which total respondents were 107 respondents which people can do teleassessment independently were 73 respondents (73%). People who cannot do teleassessment independently were 34 respondents (32%). People do teleassessment nursing independently with three aspects, which was general condition were 26 respondents (35.6%), sign and dangers 23 respondents (31.5%), decision 24 respondents (32.9%). People who can not do teleassessment nursing independently, general condition were 9 respondents (26.6%), sign and dangers 6 respondents (17.6%), decision 19 respondents (55.9%).

Table 2 shows the total number of respondents who can do teleassessment independently 73 respondents (68%) and respondents who can not do teleassessment independently 34 respondents (32%). Research also identifies the ability of respondents in conducting teleassessment nursing and making decisions to use health services.

Table 1: Result of teleassessment nursing

Variable	Category	n	%
Independently	General Condition	26	35.6
	Sign and Dangers	23	31.5
	Decision	24	32.9
Non Independently	General Condition	9	26.5
	Sign and Dangers	6	17.6
	Decision	19	55.9

Discussion

The results of this study indicate that someone who can perform assessment nursing independently is more dominant, namely as many as 73 people (68%).

Table 2: Total teleassessment nursing

Variable	*n*	%
Independently	73	68
Non Independently	34	32

This proves that the development of chatbots is very helpful in the service process and is effectively used in independent nursing assessments. The results of this study are supported by Tjut Awaliah Zuraiyah *et al*. (2020) which states that the chatbot application can make it easier for users to get information accurately and quickly in real-time. Users can get information right away by using the Telegram application without having to come far to campus which is quite far for some people [3]. This research is also supported by Yuniar and Purnomo (2019) who stated that chatbots are useful for obtaining information and can also help question and answer activities repeatedly at any time without any time constraints. The chatbot system is one of the technological innovations in supporting service-based activities to customers. The use of Natural Language Processing in chatbots makes it easier for users to understand the information needed because it is in accordance with the user's natural language [2].

The research of Dwi *et al*. (2018) states that the chatbot system can replace the role of humans as service providers, one of which is serving customers to ask and answer questions [16]. This research is also supported by Betralaga *et al*. (2019) which states that by developing chatbots, users get information quickly based on user behaviour [17].

This research is also supported by Dhebys and Yoga (2018) which states that with the chatbot, visitors can interact in the form of questions and answers on the application to provide information related to health services [14].

This research is also supported by Chaulina (2019) which states that the need for system technology Chatbot in replacing customer service in providing responsive information [13].

Further development is still very much needed, because the chatbot working system relies on intents in the system to be able to answer questions from users. Updates and additions of words are very necessary in the development of chatbot technology because if there are words that are not stored in the data, the chatbot will not be able to answer user questions and cannot also provide the desired information.

Conclusion

The use of chatbots to conduct nursing assessments remotely is considered effective and very helpful in this era of the COVID-19 pandemic. Further development related to intents in the chatbot system is very much needed, in order to provide wider services and more satisfaction for users.

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