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Case Study On The Implementation Of Telemedicine In Health Administration At Lopok Health Center: Challenges And Opportunities

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ABSTRACT
Telemedicine is a technology-based healthcare service that allows users to consult with doctors face-to-face or remotely for diagnostic consultations and patient care management. In Indonesia, although still relatively new, the use of telemedicine has been widely adopted by the community. However, there are still some challenges that must be faced by telemedicine service providers, one of which is the uneven Internet access in Indonesia, so several regions have not been able to enjoy this service. The purpose of this study is to identify the challenges and opportunities for the implementation of telemedicine in the Lopok Health Center. This research uses mixed methods research. The sample in this study was 120 respondents. Based on the results of the study, it is known that the respondents' knowledge is in the insufficient category (62.5%), the respondents' attitude is in the inadequate category (54.2%), and the willingness to use telemedicine services is in the unprepared category (65%). Based on the results of the study, it can be concluded that the implementation of telemedicine services has great opportunities and challenges, both from the readiness of users and service providers.

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INTRODUCTION

Indonesia as a developing country is still struggling to improve the quality of public health, with the fourth largest population in the world, according to the Directorate General of Population and Civil Registration, population data for the second semester of 2021 dated December 30, 2021, Indonesia's population is 273,879,750(Dirjen Dukcapil, 2021). This has led to health issues becoming one of the most important aspects in Indonesia. Based on a global report by the United Nations Development Program (UNDP), Indonesia in 2020 ranked 107th out of 189 countries analyzed by UNDP. Indonesia is ranked in the middle compared to neighboring countries in Southeast Asia, Indonesia is ranked fifth. Indonesia's Human Development Index is lower than Singapore, Brunei Darussalam, Thailand, and Malaysia. The ratio of doctors in Indonesia is also still 1 per 5,000 population, which is far behind Malaysia's ratio of 1 per 700 population (Sari & Wirman, 2021)

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Nationally, there are 12.49% of health centers with a shortage of doctors, 29.83% of health centers with a sufficient number of doctors, and 57.68% of health centers with several doctors exceeding the minimum requirement standards. Therefore, increasing human resources in Puskesmas is prioritized for the availability of 5 types of health workers, namely: public health workers, environmental health workers, nutrition workers, pharmaceutical workers, and health analysts. This effort is made to promote the achievement of national health development goals, especially by strengthening primary health care services. As an archipelago with a large population, the problem of shortage of health workers occurs due to the maldistribution of health workers. The number and types of health workers continue to increase, but the needs and equitable distribution have not been met, while the number of health workers is abundant in urban areas and few in the regions, especially in disadvantaged areas, border areas, and islands (Hermawan, 2019).

Now the big challenge is to provide access to health services for the entire community. Access is difficult and does not allow the presence of service providers and recipients at the same place and time, so access to health services can take advantage of advances in information communication technology, this is known as health telematics (telemedicine). Telemedicine can be an alternative solution to reduce disparities in health facilities in areas with limited health workers with the support of health facilities with adequate health workers and capacity (Wulandari, 2016, n.d.).

Telemedicine is the provision of basic health services and referrals between health facilities/health professionals (caregivers and providers) at a distance through telecommunications and information technology media in the context of diagnosis, treatment, and prevention of diseases, as a means of training and education of health professionals to improve the health status of individuals and communities. Telemedicine can be an alternative solution to reduce disparities in health facilities in areas with limited health workers, supported by health facilities with adequate health workers and skills. Telemedicine applications are one of the innovative efforts to improve access to and quality of health services and to overcome the limitations of health workers, especially in strengthening primary and referral health services in health facilities (World Health Organization., 2010)

Telemedicine is one of the innovative efforts to improve access and quality of health services and overcome the limitations of health workers, especially in strengthening basic health services and referrals at health facilities. Puskesmas health facilities as the spearhead of the health system act as providers of basic health services in the form of promotive, preventive, curative, and rehabilitative services (Wulandari, 2017).

However, in reality, there are still several obstacles to the implementation of telemedicine services. One of the common complaints is the weakness of the telecommunication network, because each device certainly has different access power, especially users who are in remote areas, so it is difficult to get a signal and find it difficult to use telemedicine (Saputro et al., 2021). Poor Internet connectivity is a major obstacle for 47% of respondents. Meanwhile, 40% of them recommended improving and maximizing electricity infrastructure and internet connectivity (Indria et al., 2020). Based on the described

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background, the researcher is interested in conducting a case study on implementing telemedicine in health administration at Lopok Health Center, Lopok District.

Based on preliminary studies conducted at Lopok Health Center, it is known that the health center has not implemented telemedicine as a health service for the community. Based on these results, the researcher is interested in conducting a case study on implementing telemedicine in health administration at the Lopok Health Center. The research objective is to discover the challenges and opportunities of telemedicine implementation.

METHODS

This research is a mixed-method research with a sequential explanatory design. The research was conducted in Lopok Health Center. The respondents in this study amounted to 120 respondents who were obtained using nonprobability sampling with accidental sampling technique, namely sampling that happened to be in a place. The health center director, doctor, and health administration officials were the informants in this study. The research stages consist of 3 stages, namely 1) This stage includes searching for supporting references and literature related to the research. In addition, this stage also prepares instruments in the form of questionnaire sheets and interview guidelines that will be used to collect data in the field, 2) The data collection stage, includes the preparation of questionnaires and interview guidelines as well as duplicating research instruments. After the data collection process, the complete data obtained is ready to be analyzed, 3) the Data analysis stage, at this stage, the data obtained will be processed and analyzed using SPSS version 17, and 4) The reporting stage, is the final achievement stage of the research.

RESULTS AND DISCUSSION

Overview of Respondent Characteristics

Table 1. Distribution of Respondent Characteristics

Characteristic	Frequenc	Percentag
Usia		
Pre-elderly	73	60,8
Elderly	47	39,2
Total	120	100
Gender		
Male	56	46,7
Female	64	53,3
Total	120	100
Education		
Low	75	62,5
High	45	37,5
Total	120	100

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Based on the table above, it is known that the characteristics of respondents based on age are mostly in the pre-elderly (60.8%), with the most gender is female (53.3%). While the educational level of the respondents was at a low level of education (62.5%).

Frequency distribution of respondents based on knowledge, attitude, and willingness to use telemedicine services

Table 2. Frequency distribution of respondents based on knowledge about telemedicine

Knowledg	Frequenc	Percentag
Less than	75	62,5
Medium	27	22,5
Good	18	15,0
Total	120	100

Based on the above table, it is known that most of the respondents' knowledge is in the category of less knowledge, namely 75 (62.5%) respondents.

Table 3. Frequency distribution based on respondents' attitudes toward telemedicine

Attitud	Frequenc	Percentag
Less	65	54,2
Medium	21	17,5
Good	34	28,3
Total	120	100

Based on the above table, it is known that most of the respondents' attitudes are in the bad category, namely 65 (54.2%) respondents.

Table 4. Frequency distribution based on respondents' readiness to use telemedicine services

Readines	Frequenc	Percentag
Ready	42	35,0
Not ready	78	65,0
Total	120	100

Based on the above table, it is known that respondents are not ready to be able to use telemedicine services (65.0%). Based on the results of interviews with informants, information was obtained about the challenges related to telemedicine services. Informants said that the use of telemedicine is highly dependent on the Internet, mobile devices, and electricity. This infrastructure is not evenly distributed throughout Lopok Health Center. There are some areas with poor internet networks and frequent power outages, making it difficult for the community to use telemedicine services.

Based on the results of the study, it show that the knowledge of the respondents about telemedicine is in the category of insufficient knowledge. This is due to the lack of information received by the respondents about telemedicine. According to Notoatmodjo (2017), knowledge is a very important domain for the formation of a person's action (overt behavior) in accepting new attitudes and behaviors for themselves through the stages of awareness, feeling interested in evaluating and trying and adopting attitudes and behaviors based on

knowledge, awareness, and positive attitudes. Then the behavior becomes permanent in a person. Respondents with good and moderate knowledge have a lot of information and experience, the more information obtained, the more open a person's attitude will be and able to find solutions to problems faced, and the more experience a person has, the better his knowledge will be (Kuntardjo, 2020).

The more knowledgeable a person is, the more likely he or she is to use health applications. Many developed health applications have many advantages. One of them is to facilitate access to health services just by using a smartphone connected to the Internet, anywhere, anytime, by anyone. The mobile application of the health service information system is designed and built so that the users of health facilities can easily find out any information related to the health services available in their area at any time from their smartphone devices. So good knowledge is needed to be able to use and utilize the health service application (Santoso, 2012). This is supported by the research findings of Sunjaya, which states that the use of technology, especially in the medical field in the form of digital health, needs to be developed so that it can be used by many people. Therefore, it is necessary to have good knowledge to prepare and use different types of healthcare applications (Sunjaya, 2019).

This is also supported by the findings of Dorsey and Topol, who stated that telemedicine can improve access to health services and operational efficiency, especially in hard-to-reach areas. However, telemedicine requires significant initial investment in technology and training, as well as clear regulations to ensure patient safety and privacy (Dorsey & Topol, 2016).

CONCLUSION

Based on the study results, it can be concluded that the implementation of telemedicine services has great opportunities and challenges from both the user and service provider sides. With the results of this study, it is hoped that the government will support the implementation of telemedicine services in the Sumbawa district area. In addition, this research is expected to provide input material to achieve equity and expand the range of quality health services.

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