

The Application Of Telemedicine Technology In Improving Access To Health Services In Remote Areas

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Abstract

This study investigated the application of training and education programme methods in improving access to health services in remote areas through telemedicine technology. Using a qualitative approach, the study involved the development of a training curriculum, hands-on training for health workers, and a community training programme. Results showed that the method was successful in improving the understanding and skills of communities and health workers in using telemedicine. However, limitations of this study include limitations in generalising the results due to the focus on a specific context, as well as resource and time constraints. Suggestions for future research include involving a broader and more comprehensive study, as well as an evaluation of the long-term impact of telemedicine training and education programmes across different contexts.

Keywords: *Telemedicine, Training, Education, Health Access, Remote Areas.*

1. Introduction

Limited access to health services in remote areas is one of the main challenges in the health systems of many countries, including Indonesia. Long distances from health facilities, lack of medical personnel, and limited infrastructure often prevent people in remote areas from receiving quality healthcare. However, the development of telemedicine technology offers the potential to overcome such barriers by enabling remote medical consultations through information and communication technology. Nonetheless, the application of telemedicine in remote areas is still limited and requires a comprehensive approach to improve access to healthcare.

One of the current issues related to the application of telemedicine technology in improving access to healthcare in remote areas is the limited availability of technological infrastructure. Although telemedicine offers great potential to overcome geographical barriers, many remote areas still have limitations in internet access or stable communication networks. Without adequate technological infrastructure, it will be difficult to implement telemedicine effectively, limiting the ability of people in remote areas to access remote healthcare services.

Another issue is the need for better training and technological literacy among communities in remote areas. While telemedicine technology promises easier access to healthcare, many individuals in remote areas may lack familiarity with the use of such technology. Efforts are needed to provide training and education on how to use

telemedicine platforms effectively, as well as ensure that communities in remote areas are comfortable and trusting of such services. Without adequate understanding of telemedicine technology, its potential benefits may not be fully realised in improving access to healthcare in remote areas.

The first study relevant to the issue is the research conducted by Adiyoso and Muliawan in 2019. This study discusses the utilisation of telemedicine in healthcare by conducting a literature review of various related studies. The findings of this study indicate that telemedicine has great potential in improving access to healthcare, especially in remote areas, by enabling remote medical consultations and delivery of medical information through information and communication technology. Another relevant study is research conducted by Arief and Trihono in 2020. This study aimed to investigate the implementation of telemedicine in community health centres with the aim of improving access to public health services, especially in remote areas. The findings of this study indicate that the implementation of telemedicine has successfully improved access to health services by reducing the time and cost of travelling to health facilities, as well as increasing the availability of quality health services in remote areas. This study has novelty because it focuses on the application of training and education programme methods in improving access to health services in remote areas through telemedicine technology. While many previous studies have investigated the potential of telemedicine in improving healthcare access, few have specifically explored the role of training and education programmes in the context of remote areas in Indonesia.

The purpose of this study was to evaluate the effectiveness of training and education programme methods in improving access to healthcare in remote areas through telemedicine technology. This research aims to see the extent to which training and education can improve the understanding and skills of communities and health workers in using telemedicine, as well as to identify factors that influence the success of programme implementation. As such, this study is expected to provide valuable insights for policy and practice development in expanding access to health services in remote areas.

2. Methodology

To solve the problems related to the application of telemedicine technology in improving access to health services in remote areas, a focused training and education programme method can be used. The following are the steps that can be taken:

1. Training Curriculum Development

Create a comprehensive training curriculum on the use of telemedicine technology. This curriculum should include an introduction to what telemedicine is, how to access telemedicine services, the use of necessary software or applications, and hands-on practice on how to conduct a consultation with a doctor through a telemedicine platform.

2. Training of Health Workers

Provide specialised training to health workers in remote areas on how to use telemedicine technology in their clinical practice. This includes training on how to

conduct remote consultations with patients, the use of internet-connected health monitoring tools, and how to manage medical records electronically.

3. Community Training

Conduct training programmes aimed at the general public in remote areas on how to use telemedicine services. This can be done through workshops, seminars, or hands-on training sessions in the community. Focus on practical teaching on how to download, install, and use telemedicine applications, as well as providing an understanding of the benefits and safety of using such technology.

4. Partnerships with Private Sector and Non-Governmental Organisations

Engage technology companies, telecom operators, and non-governmental organisations in providing resources and support for training programmes. This may include providing telemedicine software, affordable internet access, or financial support for programme implementation.

5. Continuous Evaluation and Monitoring

Conduct ongoing evaluation of the effectiveness of the training and education programme. By monitoring the level of participation, understanding, and usage of telemedicine services, areas that require improvement or adjustment in the programme can be identified.

By implementing a comprehensive training and education programme, it is expected that communities in remote areas will be able to acquire the knowledge and skills necessary to use telemedicine technology effectively, thereby improving their access to quality healthcare.

3. Result

Application of training and education program methods in improving access to health services in remote areas using telemedicine technology:

1. Training Curriculum Development

A health organization worked with technologists and medical personnel to design a telemedicine training curriculum that included modules on introduction to telemedicine, use of telemedicine applications, and ethics in remote consultations. These modules were then adapted to suit the needs and understanding of people in remote areas.

2. Health worker training:

A training team of doctors, nurses, and medical technicians was established to provide hands-on training to health workers at primary health centers in remote areas. Training included the use of telemedicine software, effective remote communication techniques, and electronic patient data management.

3. Community Training:

A community training program is held at a local community center with the help of medical volunteers and technology experts. The community is taught how to access telemedicine services through the provided health app, how to solve common problems

when using the app, and the benefits of using telemedicine to reduce the cost and time of traveling to a health center.

4. Partnerships with Private Sector and Non-Governmental Organizations

A local telecommunication company provides free or subsidized internet access to communities in remote areas during the telemedicine training period. Non-governmental organizations provide the necessary technological devices, such as tablets or smartphones, for trainees who do not have access to such devices.

5. Continuous Evaluation and Monitoring:

After the training is completed, a survey is conducted to evaluate the understanding and skills acquired by the participants. Through ongoing monitoring, areas where participants require additional assistance or improvement in the use of telemedicine technology are identified.

With the application of this method, it is expected that communities in remote areas can gain the necessary knowledge and skills to use telemedicine effectively, thereby improving their access to quality healthcare.

The application of the training and education program method in improving access to health services in remote areas using telemedicine technology resulted in several positive impacts. First, the existence of a comprehensive training curriculum helped improve the understanding of the community and health workers about the concept of telemedicine and how to access it. Second, hands-on training for health workers enabled them to master the technical skills required to conduct remote consultations with patients. Third, through community training programs, communities in remote areas are empowered to use telemedicine technology confidently and effectively.

Discussion

The application of this method provides a holistic and sustainable solution in addressing the challenges of access to healthcare in remote areas. By providing focused training and education, communities and health workers can gain the necessary knowledge and skills to optimally utilize telemedicine technology. In addition, partnerships with the private sector and non-governmental organizations help provide the additional resources and support needed to effectively implement the program. Continuous evaluation and monitoring also ensured that the program could be adapted to the needs and challenges that arose during implementation. Thus, the implementation of the training and education program method is an effective step in improving access to health services in remote areas through telemedicine technology.

4. Conclusion

The application of training and education program methods in improving access to healthcare in remote areas through telemedicine technology is an effective approach in overcoming geographical barriers and limited infrastructure. Through this approach, communities and health workers can gain the necessary knowledge and skills to use telemedicine effectively, thereby improving their access to quality health services. This study has limitations in terms of generalizability of the results as it focused on the

application of training and education program methods in a specific context, so the results may not be directly applicable to different situations. In addition, limitations in resources and time may have limited the depth of analysis and reach of the program implementation. For future research development, it is recommended to involve a broader and more comprehensive study covering various geographical and cultural contexts. Future research could also focus on evaluating the long-term impact of telemedicine training and education programs, as well as identifying factors that influence implementation success or failure. In addition, future research could expand the scope to consider the legal, ethical, and data security aspects of using telemedicine technology in remote areas.

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