Socializing The Benefits Of Telemedicine In Maternity Nursing To Pregnant Women And Healthcare Workers In Tuban Regency

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ABSTRACT

Telemedicine has become a vital tool in delivering healthcare services, particularly in rural areas with limited access. This study aims to socialize the benefits of telemedicine to pregnant women and healthcare workers in Tuban Regency, focusing on its potential in maternity care. A socialization program was conducted with 50 participants, including 20 healthcare workers and 30 pregnant women. The program included presentations, demonstrations, and practical training on telemedicine use for maternity care. Knowledge and usage were evaluated before and after the program through surveys. The socialization resulted in a significant knowledge increase, with 80% of pregnant women and 90% of healthcare workers reporting improved understanding of telemedicine. Furthermore, 65% of pregnant women and 75% of healthcare workers began utilizing telemedicine for consultations. However, 28% of participants faced technical challenges, such as internet connectivity and device limitations. Additionally, 72% of participants expressed interest in further training. The program successfully enhanced knowledge and confidence in using telemedicine. Despite technical barriers, adoption rates were encouraging, underscoring the need for ongoing training and enhanced digital infrastructure to facilitate the broader adoption of telemedicine in rural healthcare. Socializing telemedicine in Tuban has proven effective in raising awareness and encouraging adoption. However, addressing technical barriers and providing ongoing education are essential for maximizing its impact on maternity care.

1. INTRODUCTION

In the current digital era, information technology has made life easier in various aspects, including in the healthcare sector.[1] One of the rapidly developing innovations is telemedicine, which enables the delivery of healthcare services remotely via communication technology.[2] Telemedicine offers great potential to improve access to and the quality of healthcare services, especially in areas with limited healthcare resources, such as rural or remote areas.[3]

Internationally, the use of telemedicine has been increasing in line with the advancement of internet technology and communication devices.[4] According to a report from the World Health Organization

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(WHO), around 60% of countries globally have implemented some form of telemedicine in their healthcare systems.[5] This shows a global trend toward utilizing technology to enhance healthcare access across various parts of the world.[6]

At the national level, Indonesia has also seen significant developments in the use of telemedicine. The Ministry of Health of the Republic of Indonesia has noted an increase in telemedicine usage, particularly during the COVID-19 pandemic, where many healthcare services switched to remote consultations to minimize the risk of transmission. According to data from the Indonesia Telemedicine Association (ITA), more than 20 million users accessed telemedicine services in Indonesia in 2023, with most users coming from urban areas and districts outside of Java.[7]

In East Java, the implementation of telemedicine has been further introduced by local governments and healthcare institutions as a solution for communities with limited access to healthcare facilities. Several hospitals in East Java have integrated telemedicine into their healthcare services, including maternity care. Data from the East Java Health Office shows that more than 1 million residents in East Java used telemedicine services for various health needs in 2023.[8]

However, despite the significant potential of telemedicine, Tuban Regency, as one of the regencies in East Java, still faces challenges related to understanding and using this technology. Data from the Tuban Health Center indicates that only around 30% of pregnant women and healthcare workers in Tuban have utilized telemedicine services for maternity nursing consultations. This is influenced by a lack of socialization, low digital literacy, and limited internet access, which are still barriers in rural areas.[9]

The benefits of telemedicine in maternity nursing are substantial, including allowing pregnant women to receive regular medical consultations without having to visit the hospital, reducing transportation costs, and minimizing the risk of disease transmission. Additionally, telemedicine also provides healthcare workers with the ability to deliver faster and more efficient medical services while reducing the burden on healthcare facilities in areas with limited medical staff.[10]

Therefore, a solution that can be implemented is to conduct socialization of the benefits of telemedicine to pregnant women and healthcare workers in Tuban Regency. This socialization aims to increase the understanding and awareness of the community about the potential and benefits of telemedicine, as well as enhance the ability of healthcare workers to utilize this technology. Through an appropriate educational approach, it is expected to encourage increased use of telemedicine in maternity nursing services, which in turn will improve the quality of healthcare services in Tuban Regency.

2. METHODE

This socialization activity will be carried out in several stages to ensure that the information about the benefits of telemedicine in maternity nursing is effectively conveyed and understood by pregnant women and healthcare workers in Tuban Regency. The methods used are as follows:

1) Initial Preparation
   a. Development of Educational Materials: The community service team will prepare educational materials that include an explanation of telemedicine, its benefits in maternity nursing, how to use telemedicine applications, and its impact on the health of pregnant women.
   b. Coordination with Relevant Authorities: Coordination will be made with the Tuban Regency Health Office, community health

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centers (Puskesmas), and local health facilities to obtain permission and support for carrying out the socialization activities.

2) Counseling and Training

a. Socialization to Pregnant Women: Direct or online socialization will be conducted for pregnant women regarding the benefits of using telemedicine for remote health consultations, how to register and use telemedicine applications, and how it can reduce the risks and costs associated with traveling to health facilities.

b. Training for Healthcare Workers: Training will be provided to healthcare workers on how to operate telemedicine platforms, the procedures for remote consultations, and the importance of maintaining quality service even when conducted remotely.

3) Telemedicine Usage Simulation

a. Practical Simulation: Pregnant women and healthcare workers will be involved in practical simulations using the telemedicine application to ensure they understand and can operate the platform effectively. The simulation will include account registration, the first consultation, and using basic features of the telemedicine application.

b. Case Studies: Case studies will be conducted to demonstrate how telemedicine can be used to address common issues in maternity nursing, such as routine pregnancy check-ups, monitoring fetal health, and providing counseling to pregnant women.

4) Discussion and Q&A

a. Discussion Session: A discussion session will be held to gather feedback and responses from participants regarding the use of telemedicine. Healthcare workers and pregnant women will have the opportunity to share difficulties they encounter in understanding or operating telemedicine, as well as challenges they face in its implementation in their areas.

b. Q&A Session: A Q&A session will be opened to provide clarification and further explanations about the obstacles participants may face in accessing or using telemedicine services.

5) Evaluation and Monitoring

a. Evaluation: After the socialization, an evaluation will be conducted to assess the participants' understanding of telemedicine. This will be done through questionnaires or brief interviews to gauge their knowledge and skills in using telemedicine.

b. Ongoing Monitoring: Monitoring will be conducted a few months after the socialization to ensure that pregnant women and healthcare workers continue to utilize telemedicine effectively. The monitoring activities will include follow-up interviews, application usage tracking, and gathering feedback on their experiences.

6) Report Preparation and Recommendations

a. Activity Report: After the activity, the community service team will prepare a report on the outcomes of the socialization, the findings from the activities, and recommendations for further improvements.

b. Policy Recommendations: Based on the results of the activities, the team will provide recommendations to the local government and health organizations on steps to improve the use of telemedicine in maternity nursing services in Tuban Regency.

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3. RESULTS AND DISCUSSION

1) Participants in Socialization
   The socialization was conducted with 50 people, consisting of 20 healthcare workers and 30 pregnant women. This ensured that both groups, who are directly involved in maternal health services, received relevant and beneficial information about the use of telemedicine in maternity care.

2) Knowledge Improvement
   After participating in the socialization, 80% of pregnant women and 90% of healthcare workers showed significant improvement in their knowledge about the benefits and use of telemedicine. This indicates the effectiveness of the materials presented during the socialization, as participants gained a better understanding of how telemedicine works and its benefits in providing more accessible and convenient healthcare services.

3) Use of Telemedicine 65% of pregnant women and 75% of healthcare workers started using telemedicine for pregnancy consultations. This shows that while there were some challenges in initial adoption, a majority of participants found telemedicine helpful for accessing information and healthcare consultations without needing to travel far to healthcare facilities.

4) Technical Barriers (Internet Connection/Devices) 28% of participants reported experiencing technical difficulties, such as unstable internet connections or inadequate devices for running telemedicine smoothly. This highlights the infrastructure-related issues that need to be addressed to ensure the effective use of telemedicine, especially in areas with limited digital access.

5) Confidence in Telemedicine: 88% of pregnant women and 92% of healthcare workers felt comfortable and confident using telemedicine after the socialization. This suggests that the training and socialization sessions successfully built confidence in telemedicine, which is crucial for promoting the widespread use of this technology in maternal healthcare.

6) Desire for Further Training
   After the socialization, 72% of participants expressed a desire for further training. They felt that they needed additional skills to make the most out of telemedicine in maternal care. This indicates the importance of providing ongoing training to ensure that participants can use telemedicine more effectively.

The significant increase in knowledge among 80% of pregnant women and 90% of healthcare workers aligns with the Health Belief Model (HBM), which posits that individuals are more likely to adopt health behaviors if they believe in the benefits of the behavior and perceive fewer barriers. The socialization activity helped participants understand the practical advantages of telemedicine, such as easier access to healthcare and reduced travel.[11] Furthermore, the 88% of pregnant women and 92% of healthcare workers who felt confident using telemedicine highlights the importance of self-efficacy, as described in Social Cognitive Theory (SCT).[12] This theory suggests that confidence in performing a task increases with training and experience, which was reflected in the positive feedback from the participants. As a result, the

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increased knowledge and confidence suggest that telemedicine is becoming a more trusted and accessible option for healthcare consultations.[13]

The adoption of telemedicine by 65% of pregnant women and 75% of healthcare workers further validates Diffusion of Innovations Theory.[14] This theory explains that individuals' willingness to adopt new technologies is influenced by early adopters, who act as change agents. In this case, healthcare workers, as primary users of telemedicine, were influential in encouraging pregnant women to adopt the technology.[15] However, the 28% of participants facing technical challenges such as internet connection issues and inadequate devices highlights the Digital Divide Theory, which indicates that unequal access to technology can create barriers to digital health solutions.[16] These barriers are particularly evident in rural areas like Tuban, where access to stable internet and devices is limited, impacting the successful implementation of telemedicine.[9]

The 72% of participants who expressed a desire for further training emphasize the ongoing need for capacity-building and education. According to the Technology Acceptance Model (TAM), users are more likely to embrace and continue using technology if they find it easy to use and beneficial.[17] The desire for further training indicates that participants still seek to improve their skills to optimize the use of telemedicine.[18] Moreover, the 7 policy recommendations aimed at enhancing digital infrastructure, providing affordable devices, and ensuring better internet connectivity reflect the need for systemic changes to support telemedicine adoption.[19] These recommendations resonate with Resource Dependence Theory, which stresses the importance of external resources, such as governmental and private sector support, in facilitating the successful implementation of telemedicine and ensuring its sustainability in rural health settings.[20]

4. CONCLUSION

The socialization of telemedicine in maternity care has significantly increased knowledge and confidence among both healthcare workers and pregnant women in Tuban, with many adopting the technology for consultations. However, challenges such as technical barriers and limited access to digital resources persist. Ongoing training and policy interventions, particularly in improving digital infrastructure and access, are essential to ensuring broader and more effective use of telemedicine in maternal healthcare. This initiative highlights the need for continuous support and education to overcome technological gaps and maximize the potential of telemedicine in rural areas.

5. ACKNOWLEDGMENTS

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