

Development of Palliative Nursing Services with Home Telemedicine in Indonesia: Literature Review

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Abstract. Effects of Development of Palliative Nursing Services with Home Telemedicine in Indonesia. **Purpose:** this study determined the effects of developing palliative nursing service with home telemedicine in Indonesia. **Method:** This research applied literature search from Google scholar and PubMed. The applied keywords were home telemedicine, telemedicine, palliative care, palliative children, telehealth, nursing management, and palliative nursing services. This research took eight articles applying quasi-experimental study and literature review. The researchers analyzed the data with PRISMA method. The applied inclusion criteria included full-text accessibility. The articles had to be published between February 1, 2018 to May 30, 2020. Results: telemedicine becomes the alternative to modern consultation in providing palliative care based on home telemedicine. This facility is applicable for many families and communities so that they could consult and discuss with medical personnel. Telemedicine brings economic benefits and satisfaction especially for individuals living in remote area. They can get the benefits without spending time to go to the hospital.

Keywords: [Nursing Management, Palliative, Home Telemedicine]

INTRODUCTION

Introduction Include: Palliative care used to be known as care focused on the end of life only. At present, palliative care is given at the early disease diagnosis. The given care improves life quality of patients and the families with life-threatening illness (Shatri et.al., 2020). Palliative care is not only carried out by adults or the elderly who experience terminal illnesses. Children who experience terminal illnesses also need palliative care. More than 10% of the world's child population suffers from chronic diseases. 1-2% of them are in very serious conditions. As many as 53,000 children die each year. In 2014 around 1,350 children died from terminal illness. Child mortality data shows that children need palliative care in their lives. It is estimated that 63 children out of 100,000 children under 15 years of age each year need palliative care (Adha et.al., 2018)

In Indonesia, many people who are far from health facilities need palliative services. Therefore, they prefer to care for their children at home with life-limiting illnesses. Situations such as Covid-19 which are increasingly claiming more victims have prompted the government to issue a Large-Scale Social Restrictions (LSSR) policy to prevent transmission of Covid-19.

Technological developments in recent years have included programs that utilize internet-lined information systems. It can be used for remote consultations (Oktaviani, 2015). The development of information technology in the health sector is Home Telemedicine. It is the use of electronic communications and information technology to provide care remotely when distance is an obstacle for participants or clients. It can help people with illnesses and health institutions to share information easily and quickly (Santoso et.al., 2015).

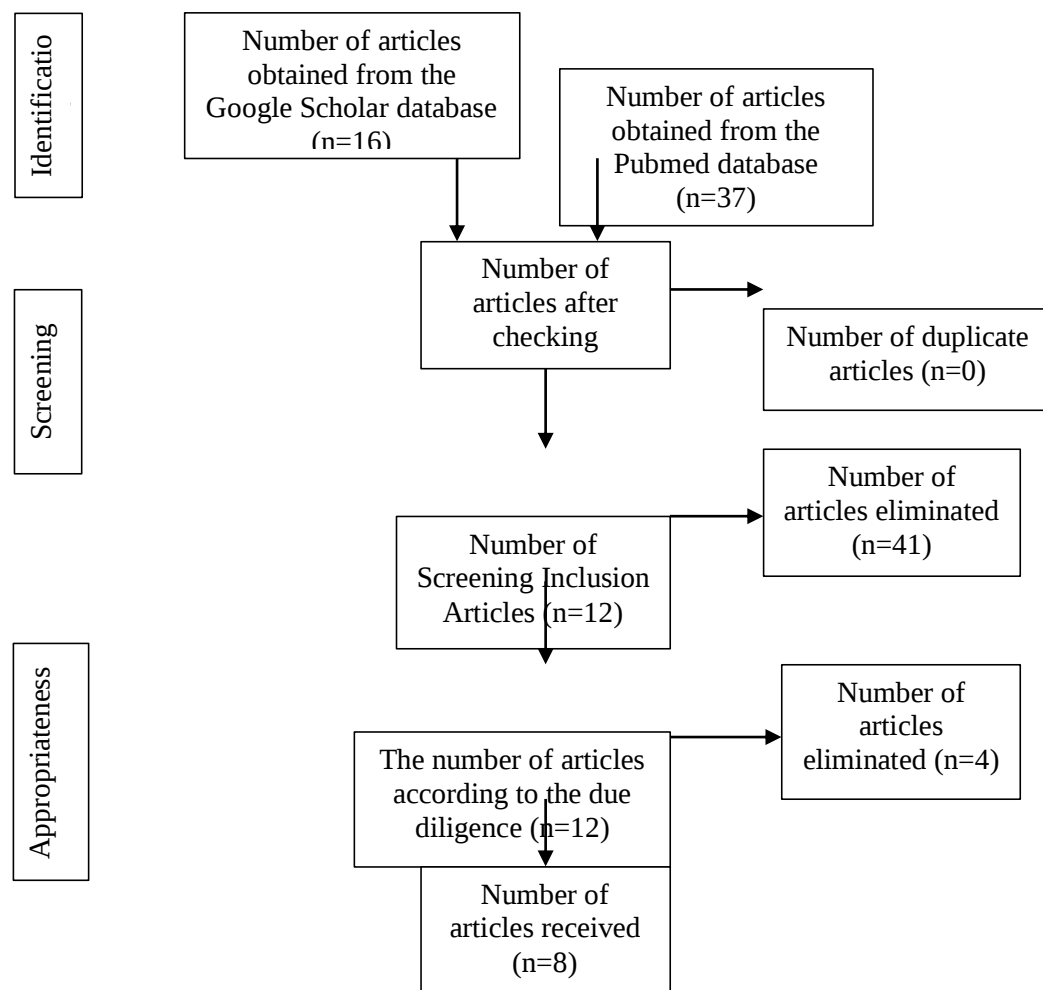
Therefore, through advanced skills and knowledge about palliative care, nurses can optimally implement home telemedicine. So, the goals of palliative nursing can be achieved. In the application, it is very helpful for health workers in providing health facilities for patients. The patient's family will also benefit a lot from home telemedicine.

METHODS

Methods Include: This study uses the literature review method using quasi-experimental research and literature review. The researchers used two databases, Google scholar and PubMed, to search with the applied keywords of Home Telemedicine, telemedicine, Palliative Care, palliative children, telehealth, nursing management, and palliative nursing services. The population used palliative children who are in Indonesia. The publication time of the journal is from 1 February 2018 to 30 May 2022.

Assessment of the eligibility quality of the journal uses JBI Critical Appraisal. The search results obtained on the Google Scholar database found 16 with the keyword "palliative telehealth" and 37 with the word telehealth palliative pediatrics and Pubmed. The results were checked for duplication to get 26 articles. It was sorted based on inclusion criteria to get 10 articles. The feasibility test was carried out and 8 articles passed. Last, there are 8 articles received and reviewed. The process of searching and reviewing the literature can be seen in Figure 1

Figure 1 PRISMA Diagram



RESULTS AND DISCUSSION

1. Results Summary of Literature Review

The results of this literature review summary were obtained from 8 journals that met the inclusion criteria. Search articles or journals using the keywords Home Telemedicine, telemedicine, Child Palliative, Pediatric Palliative, pediatric telehealth, child telehealth, and childhood cancer. The year of publication used is from 1 January 2015 to 30 June 2021. So the summary results are obtained in the table as follows:

No	Authors	Journal Components	Country	Language	Research purposes	Types of research	Method of collecting data	Population and Number of Samples	Results
1	Adhan, Alfigift Saiputri, Dea Tresna Apriliani, Ardia (2018)	Bimiki 6(1)	Indonesia	Indonesia	Determining the influence of video-game based android on palliative cancer educational purposes for children	Literature review	The researchers obtained the data from books, journals, and scientific articles. The researchers analyzed and constructed ideas.	Children and elderly people	E-Dora, an alternative educational video game application for palliative cancer treatment on child patients, was accessible for school-aged learners or children aged between 6- and 12-year-old.
2	Zulfia, Rahmatuz (2018)	Journal of Borneo Holistic Health 1(2)	Indonesia	Indonesia	Exploring the potential of social media in Indonesia as an alternative intervention to identify and to get information about the nurses'	Systematic review. Literature review	Searching relevant articles about palliative care on some databases, such as Science Direct, Ebsco Host,	Population: children and nurses Sample: children	The positive influence of social media The capability of social media to provide social support system Social media as

					emotional necessities and to get palliative care support		Proquest, Scopus, Clinical Key, and PubMed. Literature limited between 2015 and 2020.		recommended intervention for palliative care
3	Fadhila, Rizka Afriani, Tuti (2019)	Abdurrah Nursing Journal 3(2) ISSN 2541-2620	Indonesia	Indonesia	Comprehensive information about telenursing	Literature review	Collecting relevant articles from various journals, such as Proquest, Ebsco, Science Direct, and Clinical Key to review.	Population: Children and nurses Sample: Children and nurses Sampling technique: purposive sampling	The positive influence of telenursing on public health The capability of telenursing implementation in Indonesia's setting to improve health care quality
4	Bagus, Ida Mustika, Gde Ketut, Ni Prapti, Guru Oka, Made Kamayani, Ari (2015)	Journal of Chemical Information and Modeling 5	Indonesia	Indonesia	Examining the influence of telenursing on Nutrition Management for Patients with Chronic Diseases	Quasi experiment	Pre-test and post-test control groups design.	Population: 30 people Children and elderly people	The positive influence of nursing care at home with telenursing on nutritional management of chronic disease patients Research limitations: - No internal factor controls of the respondents
5	Ainul Mufidah, Ninuk Dian	Journal of Health	Indonesia	Indonesia	Revealing the types of	Literature review	Relevant articles from	Population: (1) DMT2 adult	The development of smartphones as a

	Kurniawati, Ika Yuni Widyawat (2021)	Research Suara Forikes 12(2)			smartphones as educational media for DMT2 patients		some databases, such as Scopus, Proquest, and Pubmed published between 2016 and 2020 Full English text articles Specific keyword on “palliative care for DM patients”	(2) patients receiving treatment, (3) composmetic and cooperative.	medium of education and care for patients with type 2 diabetes mellitus has a positive impact on patients.
6	Efendi, Defi Sari, Dian (2017)	Indonesian Nursing 20(1) ISSN: 1098-6596	Indonesia	Indonesia	Explore potential implementation of the Mobile–health system in Indonesia	Literature Review	Literature search through the online database PubMed, Cumulative Index to Nursing and Allied Health Literature (CINAHL), and Medline. It was limited from 2004-2014 with the keywords: "Mobile–health", "e-health",	Population: Parents and children Total: 312 Sample of 312 parents who have children aged 10–31 months divided into two groups	Mobile health can be applied in Indonesia, especially in the area of nursing children with chronic illnesses in home hospital settings. The use of mobile health can improve the quality of home hospital services in various continuums of care

							"hospital to home", "home hospital"		
7	Eva Oktaviani (2015)	Journal of Chemical Information and Modeling 9(9) ISSN: 1098-6596	Indonesia	Indonesia	The purpose of writing is to review the literature regarding the application of home telemedicine for palliative care	Literature review	Reference sources were collected through literature searches such as books, journals, and scientific articles. They are then analyzed.	Population: Children and the elderly	Telemedicine is part of the telehealth program. It is the use of electronic information and telecommunication technology with remote service facilities to support children with palliative care aged 0-18 years. Its activities consist of counseling, diagnostics, and support

The syntheses of all eight articles found that a researcher named Rahmatus conducted a systematic review research with four reviewed articles. The result found positive influence of social media implementation. This media provided a recommended social support for further palliative care intervention on children. Aiunul et al. (2021) found that educational game application could be the alternative media for school-aged children suffering from palliative cancer (6-13 years old) and adult patients. The researchers also found the implementation increment of the diabetes treatment technology influenced the communication of nurses and patients.

Current article findings also showed six articles applied smartphone-based educational media for Diabetes Mellitus type II patients. Adha et al. (2018) found the data could be the basis for further innovation of E-Dora application. In the research, the researchers designed the application with CorelDraw. The result was the master print for further game production. Defi et al. (2017) found that mobile-health application could improve the nursing care service quality for children suffering from chronic illness. For Indonesian people, smartphones could cover various purposes. Smartphones are also useful for pediatric nursing care and accessible care.

Rizka et al. (2019) found telenursing for health service brought major and positive impacts on community health. Oktaviani (2015) found home telemedicine for child palliative care could facilitate the nurses and the community. The community could get access into the child health status assessment and get supporting system for the family.

Guru Prapti et.al. (2015) found that nutritional management with nursing care technology was useful to control chronic disease, for example, the telenursing intervention. In their study, the researchers involved 30 individuals who received three-week intervention. Then, the researchers examined the data with Shapiro-Wilk test to determine the normality. Since the data were not normally distributed, the researchers used Wilcoxon sign rank test and Mann-Whitney U-test. The results showed the Wilcoxon sign range was significantly different between before and after the intervention for nutritional management. The result in the experimental group obtained a p-value of 0.000, lower than 0.05. On the other hand, the control group obtained a p-value of 0.284, higher than 0.05. The Mann-Whitney U-test indicated a significant difference between the experimental and control groups' nutritional managements with p-value of 0.000, lower than 0.05. The researchers concluded telenursing for nutritional management had positive effect for patients with chronic disease.

1. Respondent's characteristic data

Nagelhout et al. (2018) showed the characteristics of respondents using social media. The characteristics were: 93% of respondents aged between 24 and 34; 39% of the respondents aged between 45 and 54 years old. Health workers that applied social media to interact with child cancer patients were 75%. Hamm et al., (2014), cited by Rahmatus (2018), found the effectiveness of social media for children's health. The researchers found a wide use of social media for health promotion, 52%; and discussion forum, 68%. The results were useful for further nursing care intervention, for gaining further information about the emotional necessities of the nurses. Thus, the nurses could keep their performance to provide nursing care for children suffering from cancer. Ainul et.al. (2021) found the characteristics of respondents while using technology for diabetes mellitus treatment. The characteristics could influence the communication between nurses and patients. The researchers also found technology could collect data reliably and ensure the convenience of the patients.

The results of the development of smartphones as a medium of education and care for patients with type 2 diabetes mellitus have a positive impact on patients. side effects of therapy. The E-DORA application is also equipped with an online community that can make it easier for parents to interact with medical personnel. The result is that parents understand the treatment/therapy being undertaken in palliative care so that they can help children make decisions about their care in real life.

Research by Carrera & Dalton, (2014) in the journal Defi et.al. (2017) mentions the characteristics of respondents from 312 parents who have children aged 10-31 months by dividing them into two groups. The first group received treatment in the form of implementing the E-health program home safety, while the second group received socialization treatment regarding child safety through leaflets. This preliminary research project did not get results of significant differences between the two treatment groups, so this project continues to this day to get a more satisfactory conclusion. According to Carrera & Dalton, (2014) in the journal, Defi et.al. (2017) Do-it-yourself healthcare is an example of a mobile-health application that was developed. Through this application, clients can

control, program, and perform independent care under the supervision of a health team at a lower cost. cheap, (2) better service quality, and (3) wider reach because services are no longer limited by distance and time. As a result, the use of car health can improve the quality of home hospital services in various care continuums.

Research by Ghai & Kalyan (2013) in the journal Rizka et.al. (2019) explains the benefits of telenursing for nurses. It can increase income. They have flexible working hours. It can reduce the cost of care travel because nurses provide services from home. Services are provided only from a distance far away to increase job satisfaction and opportunities to develop skills. Apart from that it can also be a new job option, can share data and fast response times. As a result, the application of telenursing has a positive impact on various parties such as patients, nurses, and the government. Research by Bhowmik et. al. (2013) in the journal Oktaviani (2015) says that other benefits are being able to eliminate geographical distance restrictions, increase access to quality health services for populations who live far from access centers, reduce travel time for health workers who are not too important, reduce isolation for patients and families who live in remote areas by upgrading their knowledge through tele-education. As a result, home telemedicine can be applied and proven to be effective in assessing clients' clinical needs.

Guru Prapti et.al. (2015) mentions the characteristics of respondents. Patients aged 18-60 years with a sample size of 60 people. They are divided into 33 treatment and 33 control groups. This study shows the effect of telenursing interventions on nutritional management in chronic disease patients in the Mawar ward and Ratna ward of Sanglah Hospital Denpasar. Cancer sufferers are interested in the telehealth method of providing information related to nutrition such as food preparation and good food information during cancer treatment. This is shown by its method of using long-distance communication via telephone, sms, and social media. It is also easy for patients to obtain information related to nutritional management through telenursing. Of the seven journals above, five journals explain management, communication, cost-effectiveness, and the distance of health services.

One solution for nurses or health workers to facilitate assessing the development of children's health status and provide strengthening of support systems for families is Home telemedicine. It is the use of electronic communication and information technology to provide care remotely when distance is an obstacle for participants or clients. Making it easier for patients and professional health workers to provide general health education and administrative problems. Home telemedicine helps solve the shortage of nurses, reduces distance, time, visits, and communication, and takes care of patients who have been discharged from the hospital. The public or patients do not need to come to hospitals, doctors, or nurses to get health services. The time needed for health services is getting shorter. Patients from home can make contact via the Internet or video telephone to get health information, care, and even treatment.

Research Rizka et.al. (2019) said that the technology that can be used in telenursing varies widely. It includes telephones, personal digital assistants, smartphone tablets, computers, the internet, video and audio conferencing, and computer information systems. A nurse who performs telenursing uses the nursing process to assess, plan, implement, evaluate, and document nursing care. Treatment plan collaboration can be done immediately through a web-based page that can be accessed at any time by other health workers without having to meet face to face. Data security is also guaranteed through passwords on each family account and health worker. Ida et.al. (2015) stated that several principles must be applied in telenursing. That is improving the quality of health services, increasing access to health services, reducing the provision of unnecessary health services, and protecting the confidentiality/privacy of client information.

2. Management

Patients with chronic diseases need health information regarding their condition on an ongoing basis. Kotsani, 2018; Tavsanlı, Karadakovan, & Saygili, 2013 in the journal Rizka et.al. (2019) stated that by telenursing, patients can seek treatment at home without having to attend a health center. Alfi et.al. (2018) said that in the E-DORA application symptoms of childhood cancer would appear. That includes nausea, vomiting, fatigue, distress, and pain. There needs to be appropriate management to deal with these symptoms. Each symptom management in the E-Dora application is accompanied by an explanation of the causes and side effects of therapy. Do-it-yourself healthcare is an example mobile-health application developed to monitor client health and provide health

promotion in the community.

Defi et.al. (2017) states that children and families can enter data such as the pain scale experienced. Diagnosis and interventions can be determined and delivered to families through web pages that have been integrated with smartphones. Supporting examination results such as routine laboratory examination results can be sent via email. Families do not need to undergo long queues to get laboratory results. The studies that have been described prove that there is the development of smartphones as a medium of education and care for patients.

3. Communication

Good communication will have an impact on feelings. Every word will be easy to hear and understand. The client and his family will be motivated to follow the nurse's advice. A client-centered communication technique is the preferred approach to building relationships between the client and the professional. One of these is to provide a discussion forum for parents or nurses. They will provide health services to children with cancer to exchange experiences and relevant information. Alfi et.al. (2018) said that the E-DORA application is equipped with an online community that can make it easier for parents to interact with an interdisciplinary team of health workers. The online community was designed to support effective communication in palliative childhood cancer care.

4. Cost-effectiveness and distance of health services

Telemedicine is the use of electronic communications and information technology. It aims to provide care remotely when distance is an obstacle for participants. Telemedicine eliminates geographical boundaries. In addition, it can also increase access to quality health services for populations who live far from access centers. Health workers can reduce unnecessary travel time. Another benefit is that it can reduce isolation for patients and families who live in rural areas. They can upgrade their knowledge through tele-education.

Ghai & Kalyan's research (2013) in Rizka et.al's research. (2019) According to Ghai & Kalyan (2013) the benefits of telenursing for nurses are increasing income. Nurses also have flexible working hours. In addition, it also reduces the cost of travel for care because nurses provide services from home. Services are provided only remotely. That will increase job satisfaction and opportunities to develop skills. They can also choose a new job. They can share data and respond quickly. The advantage of telenursing for patients is that residents who live in remote areas can get health care. If they have internet facilities on their phones or computers, access will be easy. They will get quality nursing services at a low cost because they do not have to travel to distant locations.

CONCLUSION

Based on the results and discussion of the literature review above, it can be concluded that Home telemedicine has proven effective for assessing child palliation. It also provides management facilities and discussion forums with health workers. For families who wish to care for their children lovingly during the palliative phase, Home telemedicine can be a choice of examination. Low cost and easy access to health facilities without having to go to the hospital directly.

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