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REVIEW ARTICLE


Telemedicine in palliative care during the COVID-19 era: A review of the literature

Noer Diana Holida , Setiyo Adi Nugroho

Author information

Department of Nursing, Universitas Nurul Jadid, Indonesia

 dikadiana19@gmail.com

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Abstract

Telemedicine has become an effective approach for managing COVID-19 and preventing the risk of cross-contamination. The health application is growing rapidly, where medical information is transferred via telephone, Internet and other networks for consultation, control medical procedures or examinations. The application is very important to use in the pandemic era in reducing the COVID-19 infection, especially in palliative care. The study aimed to determine Telemedicine's effectiveness on palliative care during the COVID-19 pandemic. The study used a literature review method. Search databases, including Google Scholar, Science Direct, and ProQuest, with the keyword telemedicine for palliative care during the COVID-19 pandemic. The review explained that Telemedicine can establish effective nurse-patient communication, increase safety, improve palliative care and patient support services, reduce APD consumption, and simplify clinical workflows. It also improves patient comfort, reduces the psychological burden of isolation, and reduces nurses' workload.

Keywords: COVID-19; telemedicine; healthcare services; technology in health; role of nurses

Introduction

COVID-19 (Corona Virus Disease 2019, also known as 2019-nCoV) is a respiratory infectious disease caused by the coronavirus outbreak (WHO, 2021a). The virus can mostly be transmitted through the air (Lin et al., 2020). The easier spread of disease causes the number of cases to increase quickly (CDC, 2021). The World Health Organization has also declared that COVID-19 is a pandemic because of its widespread throughout the world (WHO, 2020). Most people infected with COVID-19 will experience mild to moderate respiratory illness and recover without special treatment. However, it is different in the elderly and someone who suffers from underlying medical diseases such as cardiovascular disease, diabetes, chronic respiratory disease, and cancer, leading to more serious diseases that can lead to death (WHO, 2021a).

Globally, on August 5, 2021, the prevalence of confirmed cases of COVID-19 was 200.174.883 people and 4.255.892 deaths (WHO, 2021b). In Indonesia, 3.532.567 people were confirmed positive for COVID-19. There have been 100.636 COVID-19-related deaths reported, and 2.907.920 patients have recovered from the disease (WHO, 2021c). From the total confirmed cases of COVID-19, 1.488 patients were recorded to have comorbidities. The most present was hypertension at 50.5%, followed by diabetes at 34.5% and heart disease at 19.6%. Meanwhile, of the 1.488 cases of patients who died, 13.2% had hypertension, 11.6% had diabetes, and 7.7% had heart disease (Kemenkes RI, 2022). From the data, it can be seen that the prevalence of COVID-19 sufferers with comorbidities has increased. Comorbid COVID-19 patients have a higher risk of death and a poorer prognosis than those with normal immune systems (Cai et al., 2021; Cipriani et al., 2021). Several studies have shown that 188 patients with COVID-19 with high-sensitivity cardiac troponin I on admission had significantly higher mortality (50.0%) than patients with moderate or low levels (10% or 9.1%) (Wu et al., 2020). A research in cancer explained that COVID-19 increased inflammatory factors, decreased immune cells and increase mortality (Cai et al., 2021).

Patients who will not survive can at least get palliative care. However, the health system in the COVID-19 era to provide safe and effective palliative care is very difficult (Lancet, 2020). The workload of palliative care and hospitals is experiencing an increase in services at an unprecedented rate (Kates et al., 2021; Nestor et al., 2021). Also,

when the patient is in isolation, the family is advised not to touch or even be in the same room with loved ones (Lancet, 2020). Nurses need to consider the patient's need for family support, even if not in physical or psychosocial support, and help patients who need end-of-life care to die with dignity. Communication technology must be used optimally by health workers providing communication between patients, families, and health workers (Effendy & Kristanti, 2021). For example, Telemedicine or medical services online, whose function is to provide health services in the COVID-19 era through inpatient palliative care consultations and family visits, will be easy to do (Ritchey et al., 2020).

Telemedicine is an important service for treating palliative care patients, especially when patients and healthcare professionals are separated by a pandemic or natural disaster like the one, we are currently experiencing (Atreya et al., 2020). Moreover, with the increasing number of confirmed cases of Omicron in Indonesia, the ministry has intensified Telemedicine, which is healthy for the community (Kemenkes RI, 2022). Telemedicine is to reduce the risk of cross-contamination, especially in palliative patients who are classified as very vulnerable (Montelongo et al., 2021). As mentioned in the gaps of the study, the present research aimed to explore the effectiveness of telemedicine during pandemic. It is hoped that the finding of the study help nurses aware with the complexity of COVID-19 infection.

Method

Database searches include Google Scholar, Science Direct, and ProQuest, with the keyword telemedicine for palliative care during the COVID-19 pandemic. The next stage is to select articles according to the criteria published in 2017-2021 with full text in the Preparation of Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA). The articles that have been found are then synthesized and analyzed according to the inclusion and exclusion criteria. The inclusion criteria in this systematic review are (1) Telemedicine on palliative care in the COVID-19 era and (2) Research that can provide information regarding the effectiveness of Telemedicine on palliative care during the COVID-19 pandemic. At the same time, the exclusion criteria for this systematic review are (1) articles that do not describe Telemedicine in palliative care during the COVID-19 pandemic. The search for articles begins on August 2, 2021, with keywords that the researcher has determined. The articles found by the researchers were selected according to the inclusion and exclusion criteria, with the keywords 'telemedicine for palliative care', 'COVID-19 pandemic', and 'telemedicine pandemic'. As the study is review method, the ethical clearance was not required.

Results

The total number of articles obtained was assessed first (n=60), then removed articles unmet the inclusion criteria (n=40). The final results were twenty articles reviewed (**Table 1**). All the papers have various research designs for study comprehensiveness. The authors did not focus on nursing research as several healthcare professionals have written many articles published in online journals.

Discussion

Based on the results of reference studies, the fast spread of COVID-19 and the pandemic status is the problem that burdens the world the most today. This is especially true for vulnerable ages with comorbidities independent predictors of hospital mortality for COVID-19 patients (Imam et al., 2020). Telemedicine has become an effective approach to the management of COVID-19 as it allows for to reduction of the risk of cross-contamination (Montelongo et al., 2021). Telemedicine is a rapidly growing healthcare application in which medical information is transferred via telephone, Internet and other networks for consultation, sometimes remote medical procedures or examinations. (Fong, 2021). Of course, this application is very important to use in the pandemic era to reduce the frequency of meetings so that it can reduce the spread of COVID-19 (Atreya et al., 2020). Apart from its advantages, Telemedicine has two concepts, namely Real-Time and Store and Forward. The concept choice depends on what information needs to be sent, the availability of appropriate telecommunications resources, and the urgency of the answer required (Fatmawati, 2021). Before the pandemic, 12% of doctors used remote medicine, but during COVID-19, 96% used video visits to provide medical care among physicians now using Telemedicine, 91% plan to continue offering telemedicine services following the resolution of physical distancing and other adjustments to the pandemic. Most physicians rate the ease of application to patients as the most important focus of Telemedicine (Miner et al., 2020).

Table 1. Study findings

No	Authors, years	Research design	Main finding
1	Ritchey, 2020	A business model approach	Telemedicine helps to evaluate the disease progress
2	Chávarri-Guerra et al, 2021	A descriptive study	Telemedicine is feasible for providing supportive and palliative care
3	Atreya et al., 2020	An exploratory survey	Telemedicine is an essential tool for palliative care
4	Biswas et al., 2020	A prospective analysis	Telemedicine increases patient satisfaction
5	Bains et al., 2021	An observational study	Telemedicine improves communication skills
6	Calton et al., 2020	A Mixed-methods telephone survey	Telemedicine increases patient's comfortable
7	Cheung et al., 2021	A pilot clinical trial	Tele palliative care is an acceptable method of care
8	Salem et al., 2020	A qualitative study	Telemedicine can be a useful tool for palliative care
9	Haye et al., 2020	A qualitative study	Telemedicine helps nurses teach other people
10	Gomez et al., 2021	A qualitative study	Telemedicine offer new opportunities to improve quality of care
11	Miner et al., 2020	A qualitative study	Telemedicine is more attractive than other methods
12	Martínez-García et al, 2020	A prospective observational study	Telemedicine enables clinically beneficial and safe monitoring
13	Broglio & Kirkland, 2021	A descriptive study	Telemedicine is feasible to be used by healthcare
14	Chang et al., 2021	A prospective survey study	Patients will receive Telemedicine
15	Suarez-gil et al, 2020	A descriptive study	Telemedicine tool is useful for the management of high-risk patients
16	Shirley et al., 2021	A quantitative study	Telemedicine increases staff satisfaction
17	Montelongo et al, 2021	A descriptive analysis	Telemedicine is an effective approach to COVID-19 management
18	Hasson et al., 2021	A qualitative study	Telemedicine is considered safe and effective
19	Morgenstern-Kaplan et al, 2021	A descriptive study	Telemedicine encourages patients to improve their health
20	Wong et al., 2021	A qualitative study	Telemedicine will be an instrument for healthcare improvement

In line with research conducted by (Ritchey et al., 2020), the results of a multidisciplinary patient-navigator-led telemedicine supportive care program in Mexico City. One hundred and sixty-three telemedicine interventions were administered to 45 patients. A quarter of patients have an education less than or equal to primary school, and 15% live in rural areas. The most common interventions were psychological care (33%), pain and symptom control (25%), and nutritional counselling (13%). Half of the interventions were provided by video conferencing. Also, the satisfaction obtained by some patients is the study's results (Calton, Shibley, et al., 2020).

The University of California San Francisco (UCSF) has made it mandatory for Telemedicine to treat patient maintenance—palliative and non-palliative care in an outpatient setting. Similarly, many hospital agencies offer most social work and spiritual support through Telemedicine today. For hospitals, strict visitor restrictions mean that some inpatient palliative care consulting programs conduct virtual family gatherings and consultations. Telemedicine is increasingly being used to deliver specialized palliative care to the homes of terminally ill patients. Patients who receive palliative care with Telemedicine are usually very "satisfied" with video care's convenience and time savings. Telemedicine also saves valuable driving time for home-visiting palliative care physicians (Fatmawati, 2021). Palliative patients and their caregivers found that using Telemedicine made them feel comfortable discussing sensitive topics via video. Telemedicine platforms can build good relationships between nurses, patients and families. The use of mobile applications and video consulting services can encourage patients to improve their health and prevent short-term and long-term complications (Morgenstern-Kaplan et al., 2021).

A prospective observational study demonstrates that remote treatment with remote monitoring at home, when used proactively, allows the monitoring of high-risk patients with COVID-19 to be clinically beneficial and safe

(Martínez-García et al., 2020). Inpatient admissions were reduced by 44%. Nearly 82% of patients/caregivers gave positive feedback about the telemedicine care provided by the department and mentioned that the service provided them with support and connectedness. Patients and caregivers say the service helps relieve fear and reassure them that there is someone to support them, especially when the pandemic separates patients and healthcare professionals. Nurses treat cancer patients from the palliative care unit with weakened immune systems. Telemedicine is very helpful for nurses to provide holistic, integrated care to patients who cannot visit the hospital regularly (Biswas et al., 2020).

Indirectly the COVID-19 pandemic causes a surge in need for palliative care (Imam et al., 2020). This is evidenced by research in all geographic areas of the United States. Demonstrates that the COVID-19 pandemic has burdened the palliative care workforce and hospitals as it delivers improved services at an unprecedented level to patients and families (Kates et al., 2021). Telemedicine has the potential to establish effective nurse-patient communication, also increase the safety of both and improve palliative care and patient support services, reduce PPE consumption, and simplify clinical workflows. It also improves patient comfort, reduces the psychological burden of isolation, and reduces the nurse's workload (Bains et al., 2021). Telemedicine is not considered safe and effective, nor does the patient feel it harms medical care or the patient-doctor relationship. Telemedicine integration is ideal for patients under supervision after completing active oncology treatment (Hasson et al., 2021). This is evidenced by research which states that patients and providers in cancer rehabilitation treatment clinic settings will receive telemedicine visits. Patient services are drug prescription/titration and education/counselling. Services rarely provided are making new diagnoses, ordering intervention procedures, and making referrals (Chang et al., 2021). As in the study of patients undergoing dialysis, they have had unmet palliative care needs. Limited access to palliative care is a major barrier to integration into routine dialysis care. The audiovisual aspect of Telemedicine is highly rated. Over 80% reported that the visit was at least as good as an in-person visit, and 41% felt that teleconsulting was better. Eighty-one per cent of patients felt the visit was relevant to them, 58% liked learning new things about their condition, and 27% reported the visit changed how they think about dialysis (Cheung et al., 2021).

Although Telemedicine has become the primary tool for enabling continued access to care and may continue to be a visiting modality after the pandemic subsides, Telemedicine poses many challenges for doctors and patients and creative solutions to enable "human relations" through Telemedicine must be sought. More research is needed to determine the effect of Telemedicine on the quality of care (Wong et al., 2021). This reference study's importance is obtaining a theoretical basis to support problem-solving. From the above discussion, it can be concluded that Telemedicine has proven to be effective for patient care because it allows for to reduce of the risk of cross-contamination that often occurs during the COVID-19 pandemic, especially in palliative patients (Montelongo et al., 2021). The use of mobile applications and video consulting services can encourage patients to improve their health and prevent short-term and long-term complications (Morgenstern-Kaplan et al., 2021).

Conclusion

Telemedicine platforms establish effective communication and build good relationships between nurses, patients and families. That media also offers new opportunities to improve the quality of patient care in palliative approach. However, future challenges and further research on the effectiveness of Telemedicine in terms of psychology and accuracy of diagnosis in patients' needs to be done. Of course, this will have an impact on the effectiveness of Telemedicine universally.

Author's declaration

The authors made substantial contributions to the conception and design of the study and took responsibility for data analysis, interpretation, and discussion of results. For manuscript preparation, all the authors read and approved the final version of the paper.

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Availability of data and materials

All data are available from the authors.

Competing interests

The authors have declared that no conflict of interest exists.

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