Literature Review: Telenursing in Palliative Care for Children with Cancer

Salis Miftahul Khoeriyah[1*], Yafi Sabila Rosyad[2], Mohamad Cahyadi[3]

[1-3]Fakultas Ilmu Kesehatan, Universitas Bhakti Husada Indonesia, Jl. Lkr. Bayuning No.2, Kadugede, Kec. Kadugede, Kabupaten Kuningan, Jawa Barat 45561, Indonesia

*Corresponding Author: miftakhul.khoery@gmail.com

Abstract. Children with cancer often require continuous, holistic palliative care to manage both physical symptoms and psychosocial needs. However, limited access to in-person services—especially in rural or underserved areas—poses a significant barrier. Telenursing, as a form of telehealth, offers an innovative approach to delivering pediatric palliative care remotely. This literature review aims to explore the impact of telenursing in supporting palliative care among children with cancer. The review followed a PRISMA-based selection process, including seven primary research articles published between 2021 and 2025, sourced from both international and Indonesian journals. Studies were included if they focused on pediatric cancer patients (≤18 years) and examined telenursing or telepalliative interventions. Thematic synthesis identified four main findings: (1) improved accessibility and service efficiency, (2) enhanced self-management of symptoms, (3) high family satisfaction, and (4) emotional and spiritual support. Evidence shows that telenursing reduces logistical burdens, improves symptom monitoring, and facilitates meaningful communication between families and healthcare providers. However, challenges such as digital literacy gaps, infrastructural limitations, and lack of regulation remain. The review concludes that telenursing is a valuable complement to in-person pediatric palliative care, particularly when integrated with culturally sensitive practices and supported by healthcare policies. Future efforts should focus on strengthening infrastructure, nurse training, and equitable policy frameworks to support the expansion of pediatric telenursing services.

Key words: telenursing, pediatric palliative care, childhood cancer, telehealth, symptom management, family support

INTRODUCTION

Childhood cancer is a global health problem that requires serious attention due to its multidimensional impacts, including physical, psychological, social, and spiritual impacts. According to the World Health Organization (WHO), approximately 400,000 children aged 0–19 are diagnosed with cancer each year, the majority of whom come from low-and middle-income countries (WHO, 2025). In Indonesia, data from Yayasan Onkologi Anak Indonesia (YOAI) records an increasing number of children diagnosed with cancer, with leukemia ranking as the most common type of cancer (YOAI, 2025).

Palliative care is an essential part of managing children with cancer, especially those in advanced stages. The goal of palliative care is not only to relieve pain or other symptoms but also to provide emotional and spiritual support to the child and their family. The WHO (2020) emphasizes that pediatric palliative care should begin at the time of diagnosis and be provided continuously throughout all stages of the disease, both during active therapy and near the end of life. However, the implementation of pediatric palliative care in Indonesia still faces many obstacles, including limited trained personnel, limited access to services in remote areas, and suboptimal family involvement in home care *(Effendy et al*., 2022; Tampubolon *et al*., 2021). This is where telenursing emerges as a potential alternative and complementary approach, as it can expand service reach, increase family participation, and strengthen continuity of care (Effendy *et al*., 2022; Pangarso *et al*., 2024).

Suandika *et al*. (2023) explain the benefits of telenursing for patients, nurses, and healthcare facilities. They believe that telenursing can be used by patients and families to improve self-management of chronic disease care online, allowing them to obtain various information quickly and accurately, reducing the distance traveled to healthcare facilities. Research by Effendy *et al*. (2022) in Indonesia shows that home-based palliative care support integrated with technology can improve family comfort and strengthen end-of-life decision-making.

Despite its benefits, telenursing also presents challenges, such as the digital divide, the technological competence of healthcare workers, and issues with patient data privacy. Therefore, it is important to systematically review the results of various studies conducted, both domestically and internationally, to understand the extent to which telenursing can play a role in supporting effective and sustainable palliative care for children with cancer. This literature review aims to identify and synthesize scientific findings related to the application of telenursing in palliative care for children with cancer, including its benefits, barriers, and potential for future development. The results of this study are expected to inform policymaking and the development of technology-based nursing practices that are more child- and family-friendly.

METHODS

This literature review uses a systematic literature review approach compiled based on the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 guidelines. Article searches were conducted systematically in the following electronic databases: PubMed, ScienceDirect, Scopus, Google Scholar, DOAJ, Garuda, and Neliti. The search was conducted in June–July 2025, with publications limited to the years 2015 to 2025. Keywords are in English.: ("telenursing" OR "telehealth" OR "telemedicine" OR "remote nursing") AND ("palliative care" OR "end-of-life care") AND ("children" OR "pediatric" OR "adolescent" OR "child") AND ("cancer" OR "oncology"). Key word in Bahasa Indonesia: "telenursing" AND "perawatan paliatif" AND "anak" AND "kanker"

The inclusion criteria for this literature review include: 1) articles discussing telenursing or telehealth in the context of palliative care for children with cancer; 2) children aged 0–18 years; 3) original research articles (quantitative, qualitative, or mixed); 4) written in Indonesian or English; 5) publication year: 2021–2025; 6) full text available. Furthermore, exclusion criteria include: 1) irrelevant to the focus of the study (e.g., only discussing telenursing for the elderly or adults); 2) only in the form of abstracts, editorials, opinions, or comments; 3) duplication from other sources.

The following diagram 1. explains the article selection process

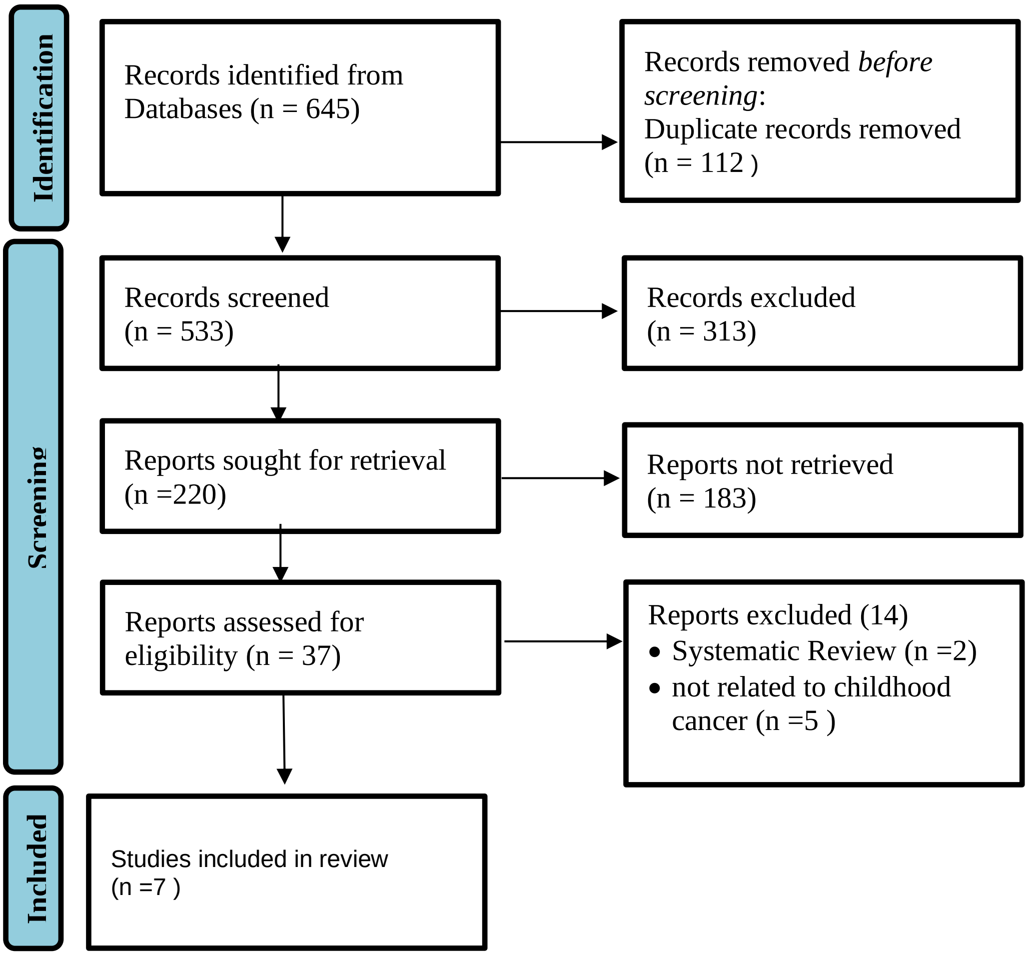

Figure 1. Diagram Identifcation studies via databases

RESULTS AND DISCUSSION

The seven selected studies span different countries including the United States, India, Iran, and Indonesia. Various study designs were employed: longitudinal pilots, mixed methods, Quasy experimental, prospective pilit, observational, and qualitative research.

Table 1. Extraction of the article Telenursing in Palliative Care for Children with Cancer

No.	Author(s) & Year	Design	Sample (≤18 years)	Instrument	Key Findings
1	(Weaver *et al*., 2021)	Longitudinal pilot	11 terminally ill children	Routine telehealth, self-report	All children received EOL care at home; telehealth improved early detection of emotional symptoms.
2	Schmitt *et al*., (2022)	Prospective pilot study	24 children & adolescents with cancer	TAM-2, CAHPS, AITCS-II	Telehealth intervention for hospice transition was well accepted; team collaboration improved.
3	Effendy *et al*., (2022)	Descriptive qualitative	Families of children with cancer	In-depth interviews	Technology-based homecare support provided emotional comfort and empowered decision-making.
4	Shahri *et al*., (2024)	Quasi-experimental	66 adolescents with cancer (12–18 years old)	GI symptom self-management questionnaire	Significant improvement in GI symptom management at 1 week and 1 month post-intervention (p<0.001)
5	Armini & Mulyono, (2023)	Observational	Children with cancer	Android app, user questionnaires	Mobile app was effective for daily symptom reporting and was user-friendly for patients and families.
6	DeGroote *et al*., (2024)	Prospective pilot	24 patients and healthcare professionals	CAHPS, AITCS-II	Improved team collaboration; service found feasible and acceptable by patients and providers
7	Ganguly *et al*., (2025)	Mixed-methods	465 families of pediatric cancer patients	Survey + interviews	85% supported service continuation; improved access and reduced cost

A thematic analysis of seven primary research articles reveals that telenursing in pediatric palliative care for children with cancer significantly enhances healthcare quality, accessibility, symptom management, and family satisfaction. The major themes synthesized from the data include: (1) improved access and efficiency, (2) enhanced symptom self-management, (3) family satisfaction and comfort, and (4) emotional and spiritual support.

One of the most prominent findings is that telenursing effectively addresses geographic barriers, reducing travel costs and logistical burdens for families. Studies by Ganguly *et al.* (2025) and Schmitt *et al.* (2022) show that the majority of families found remote services to be more practical and less time-consuming. Based on this, the author assumes that telenursing offers a strategic solution to reduce disparities in access to palliative care, especially in low-resource and rural areas. This assumption is supported by Ma *et al.* (2025) who demonstrated that home-based telepalliative care improves communication between nurses and families in remote regions, fostering trust and readiness for end-of-life decisions

Telenursing also plays a pivotal role in strengthening patients’ ability to manage symptoms. Shahri *et al.* (2024) found that a web-based telenursing intervention significantly improved adolescents' self-management of gastrointestinal symptoms during chemotherapy. The author assumes that digital educational approaches enhance patients' and families’ self-efficacy in dealing with treatment side effects. This aligns with Muñoz-Villaverde *et al.* (2024) who found that telenursing interventions improved health literacy and decision-making skills among adult cancer patients.

From the family perspective, Schmitt *et al.* (2021) reported that 92% of families were satisfied with telepalliative services, with 96% considering them equal or even superior to in-person visits. This high satisfaction rate suggests a strong social and emotional acceptance of telenursing services. The author posits that telenursing not only functions as a communication tool but also fosters a sense of connection, safety, and ongoing support. This is consistent with findings from Esterilita *et al.* (2024)

which showed that well-structured and user-friendly telehealth programs are well-received by patients and caregivers across various age groups.

Emotional and spiritual dimensions also emerged as essential components of pediatric palliative care that can be addressed through telenursing. Effendy *et al.* (2022) highlighted the emotional burden and spiritual needs of Indonesian families caring for children with cancer at home. The author assumes that culturally sensitive and personalized telenursing services can effectively serve as psychosocial support. This is corroborated by Pyke-Grimm *et al.* (2021) who stressed that pediatric palliative telehealth programs must consider cultural and spiritual values to enhance family-centered care

Nonetheless, challenges to telenursing implementation remain. Studies noted that digital literacy gaps, infrastructure limitations, and lack of regulatory policies hinder widespread adoption. The author assumes that long-term success will require strong policy support, digital literacy training, and institutional readiness. This is in accordance with the explanation by Sari (2023) who emphasize that the success of telehealth programs depends on organizational infrastructure, human resource preparedness, and regulatory integration. Telenursing has demonstrated its potential not only to overcome logistical and geographical barriers but also to deliver holistic, cost-effective, and emotionally resonant palliative care for children with cancer and their families (Andriastuti *et al.*, 2022; Dasat & Anggraini, 2023).

CONCLUSION

Telenursing has emerged as a promising approach to support pediatric palliative care for children with cancer, offering solutions to overcome barriers of distance, limited access, and resource constraints. The thematic synthesis of current research indicates that telenursing interventions can improve symptom self-management, enhance family satisfaction, and provide crucial emotional and spiritual support. These benefits are especially significant for families in remote or underserved areas, where traditional palliative services may be unavailable or fragmented. Despite its potential, successful implementation of telenursing requires attention to several key factors, including digital literacy, infrastructure, cultural sensitivity, and regulatory support.

In light of these findings, it is recommended that healthcare systems and nursing educators invest in developing telenursing competencies, especially for pediatric oncology nurses. Additionally, policies that standardize and fund telepalliative services should be established to ensure equitable and sustainable care for all children with cancer, regardless of their geographic location.

ACKNOWLEDGEMENT

The author would like to express sincere gratitude to Universitas Bhakti Husada Indonesia for the academic support and guidance provided throughout the completion of this literature review.

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