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RESEARCH ARTICLE

Development of Standard Operating Procedures in Palliative Care: A Qualitative Approach

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Abstract

Introduction: Cancer remains a leading cause of death globally and in Indonesia. In advanced stages where curative treatment is limited, palliative care becomes essential for reducing suffering and improving quality of life. However, standardized protocols for palliative care delivery remain limited, particularly in resource-constrained settings like North Sumatra. Objective: This study addresses the critical gap in contextualized Standard Operating Procedures (SOPs) for palliative care in Indonesia. **Materials and Methods:** A qualitative approach employing the initial stages of the Borg & Gall Research and Development model was utilized. Data were collected through semi-structured in-depth interviews with eight purposively selected informants (four advanced cancer patients and four healthcare professionals) and direct observations in four referral hospitals in North Sumatra. Data saturation was achieved after six interviews, confirmed by two additional interviews. Thematic analysis followed Braun and Clarke's six-stage framework, with triangulation, member checking, and peer debriefing ensuring trustworthiness. **Results:** Six main themes emerged: (1) family and environmental support, (2) pain management, (3) improving quality of life, (4) role of healthcare professionals, (5) access to health services, and (6) hope in palliative care. Observations revealed significant limitations in trained personnel, medication availability, and service standardization, particularly in rural areas. Findings align with international frameworks (WHO, ASCO, ESMO) while highlighting unique cultural and systemic challenges in Indonesia. **Conclusion:** SOPs for palliative care must be contextually designed, incorporating local cultural values, healthcare infrastructure realities, and international best practices. Specific recommendations include standardized pain assessment protocols, structured family involvement frameworks, multidisciplinary care pathways, and strategies for resource-limited settings. Continuous training and policy support are essential for sustainable implementation.

Keywords: Palliative Care- Standard Operating Procedures- Cancer Patients- Quality of Life- Family Support

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Introduction

Cancer is one of the diseases that is a global health problem, including in Indonesia. The International Agency for Research on Cancer globally reported 20,021,646 new cancer cases with 9,973,672 deaths in 2023 [1]. Indonesia ranks 8th with the highest cancer cases in Southeast Asia with 420,277 new cases and 247,804 deaths in 2023 [1].

Cancer is a group of diseases characterized by the uncontrolled growth and spread of abnormal cells [2]. Cancer patients will eventually enter the terminal stage of the disease, where treatment to cure or prolong life becomes increasingly difficult. At this stage, they begin to feel close to death and often question the meaning of life and death [3].

The most appropriate care for patients with chronic diseases such as cancer is palliative care. Palliative care is an important component of cancer care worldwide and

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uses an interdisciplinary approach to alleviate suffering through the management of pain and symptoms caused by cancer and its treatment [4]. Palliative care aims to alleviate suffering from pain, and provide physical, psychosocial and spiritual support [5].

According to the World Health Organization (WHO), palliative care is defined as an approach that improves the quality of life of patients and their families facing problems associated with life-threatening illness, through the prevention and relief of suffering by means of early identification and treatment of pain and other problems, physical, psychosocial and spiritual [6]. The American Society of Clinical Oncology (ASCO) emphasizes early integration of palliative care alongside standard oncology care to optimize quality of life and symptom management [7].

Palliative care has been introduced in Indonesia since three decades ago, precisely since 1992. However, until now palliative care services in Indonesia have only been available in a few major cities, where most cancer treatment facilities are located. This may be due to the many components of palliative care that need to be considered, including the need for education, government policy support, and integration in palliative care [8].

The disparity in palliative care access is particularly pronounced in Indonesia, where geographic, economic, and cultural factors create significant barriers to service delivery. Studies from other Asian countries demonstrate similar challenges, highlighting the need for context-specific solutions [9,10]. The development of standardized protocols that can be adapted to local contexts has been identified as a critical strategy for improving palliative care quality and accessibility [11].

North Sumatra also still faces various challenges in terms of palliative care, such as limited facilities, lack of trained health workers, and no standardization of practice across all health services. Palliative care services are generally only available in large hospitals in major cities such as Medan, while districts and rural areas do not have adequate access.

Based on the above problems, the preparation of a Standard Operating Procedure (SOP) for palliative care is very important. Standard Operating Procedure (SOP) acts as a clear and structured guideline for health practitioners, including doctors, nurses, and other health workers, in carrying out palliative care effectively. Standard Operating Procedure (SOP) aims to organize standardized steps/workflows effectively and efficiently [12]. International evidence demonstrates that well-designed SOPs can improve care consistency, reduce symptom burden, and enhance patient and family satisfaction [13,14].

Before developing a palliative care SOP, an in-depth needs analysis is needed in the North Sumatra region. This is important because the geographical conditions, culture, human resources, health service infrastructure, and the level of public understanding of palliative care in North Sumatra have special characteristics that are different from other regions in Indonesia. By conducting a needs analysis, the SOP developed will be more contextual, applicable, and able to answer the real challenges faced in the field, so that its implementation can run more effectively and sustainably.

This study aims to identify key aspects necessary for developing contextually appropriate and sustainable SOPs for palliative care in North Sumatra Province. Specifically, this research seeks to: (1) explore patient and healthcare provider perspectives on palliative care needs, (2) identify existing gaps and challenges in current practice, and (3) generate evidence-based recommendations for SOP development that integrate international best practices with local realities.

Materials and Methods

The research method refers to the cyclical stages of the Borg & Gall Research and Development Model, which include information gathering and research, planning, development of initial product prototypes, and conducting operational field tests (Figure 1).

In this study, the main focus was on the initial stage, which was information gathering and research. This phase is critical in the R&D cycle as it provides the foundational understanding necessary for subsequent SOP development, pilot testing, and refinement phases [15]. Information gathering and initial research provided an in-depth understanding of current palliative care practices, as well as the challenges faced by medical personnel and patients.

Study Design and Participants

This qualitative study involved eight informants selected through purposive sampling: four advanced cancer patients and four healthcare professionals (doctors, case managers, oncology nurses). Sample size was determined based on information power principles in qualitative research [16].

Inclusion criteria for patients: adults (≥18 years) with advanced cancer (Stage III-IV), receiving palliative care ≥1 month, able to communicate, and cognitively competent to consent. Healthcare providers required minimum two years' cancer care experience and current involvement in palliative care delivery. Exclusion criteria included severe cognitive impairment, communication inability, and unwillingness for audio-recording.

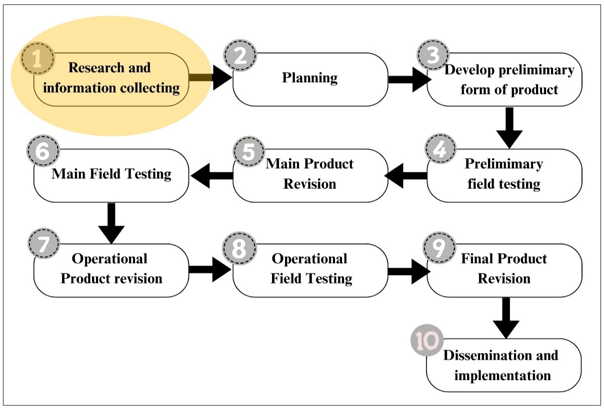

Figure 1. Research and Development Model Borg & Gall

Data Collection

Data were collected through semi-structured interviews and direct observations. Interview guides were developed based on WHO and ASCO palliative care frameworks [6,7]. Patient interviews explored symptom experiences, care received, family support, and service accessibility. Provider interviews focused on clinical practices, delivery challenges, and resource limitations.

Interviews lasted 45-90 minutes, were audio-recorded and transcribed verbatim. All interviews were conducted by trained qualitative researchers in private settings.

Direct observations were conducted at four major referral hospitals in North Sumatra: Haji Adam Malik Central General Hospital, Dr. Pirngadi Regional General Hospital, Haji Medan General Hospital, and Murni Teguh Memorial Hospital. Observations included patient-provider interactions, symptom management, family conferences, and team meetings, totaling approximately 40 hours across all sites (2-3 days per site).

Data Analysis and Trustworthiness

The data obtained were analyzed qualitatively using thematic analysis based on Braun and Clarke’s six-stage framework [17]: (1) data familiarization through repeated reading of transcripts, (2) systematic coding of meaningful data units by two researchers independently, (3) identification of themes by organizing related codes into potential patterns, (4) theme review to ensure coherence with the dataset, (5) defining and naming themes with clear conceptual explanations, and (6) writing the final narrative report with supporting quotations from informants.

Ensuring Credibility and Trustworthiness

Multiple strategies were employed to ensure the trustworthiness of findings [18]. Data saturation was achieved after six interviews, with two additional interviews confirming no new themes emerged [19]. Triangulation employed multiple data sources (patient and provider interviews, observations) across four hospital sites [20]. Member checking involved returning transcripts to three participants for verification [21]. Peer debriefing through regular team meetings challenged interpretations and ensured rigor [22]. Dependability was maintained through detailed audit trails (recordings, transcripts, coding trees, memos) and independent coding by two researchers. Reflexivity was practiced through research journaling. Thick description of context enables transferability assessment.

Ethical Considerations

This research was conducted after the researchers passed the ethical test from the Health Research Ethics Commission of the Faculty of Nursing, Universitas Sumatera Utara with number 2963/VI/SP/2024.

All participants provided written informed consent after receiving detailed information about the study. For advanced cancer patients, consent capacity was assessed by the research team and treating physician. Participants could withdraw without consequences. Confidentiality was protected through pseudonyms, secure data storage, and restricted access. Special considerations included flexible interview scheduling and allowing family presence if desired.

Results

Participant Characteristics

Patient participants (n=4): age range 45-67 years; diagnoses included breast cancer (n=2), lung cancer (n=1), colon cancer (n=1). Healthcare professionals (n=4): oncologic surgery specialist doctor (15 years of experience), oncology ward case manager (8 years), oncology nurse (10 years).

The results of the analysis in this study consist of 6 themes, namely: 1) Family and Environmental Support, 2) Pain Management in Palliative Care, 3) Improving Quality of Life through Palliative Care, 4) Role of Medical Personnel in Palliative Care, 5) Access to Health Services, 6) Hope in Palliative Care. These themes emerged consistently across both patient and healthcare provider interviews and were corroborated by observational data.

Thematic Analysis

Six primary themes emerged representing critical SOP development components (Table 1):

Observational Findings

Direct observation provided valuable insights into the implementation of palliative care in the field. Observations showed that palliative care at the hospital has been implemented with various approaches. Health workers, including doctors, nurses, and dietitians, work together to provide comprehensive care that focuses on the patient’s needs (Table 2).

Discussion

Palliative care is a holistic approach that aims to improve the quality of life of patients suffering from terminal illnesses such as cancer. Palliative care focuses not only on managing physical symptoms, but also addresses psychological, social, and spiritual needs.

This study identified six interconnected themes essential for SOP development in palliative care: family support, pain management, quality of life improvement, healthcare professional roles, service access, and hope. These findings both align with and extend international palliative care frameworks, while highlighting unique contextual factors in the Indonesian setting (Figure 2).

The conceptual framework illustrates six key themes identified from qualitative analysis and their relationship to patient outcomes. All themes converge to improve patient outcomes and collectively inform the development of contextualized Standard Operating Procedures for palliative care in North Sumatra.

Contextualizing Findings within International Frameworks

This study demonstrates that while palliative care in Indonesia aligns with international principles, its

Table 1. Themes and Significant Statements from in-depth Interviews with Patients and Healthcare Workers

Theme 1	Significant Statement
Family and Environmental Support	My family, neighbors and relatives are all very supportive of me, they remind me to always be patient, sincere and not to forget God as the creator of humans and everything in them (Sur).
	The support of family and relatives, all very important to remain patient and grateful for this treatment, although the final results we do not know (NR)
	Support from family is very important in dealing with illness (HA)
	My children always encourage me (Her)
Theme 2	Significant Statement
Pain Management in Palliative Care	Not bad at all, if I don't get treatment I'm always in pain and can't do anything because I'm in pain and all my bones are weak from the pain (Sur).
	I really feel my left breast hurts a lot and the smell also disturbs the family who are near me (NR).
	Not bad at all, if I don't seek treatment I'm always in pain and can't do anything because I'm in pain and my whole body is weak from the pain (HA).
	This chest pain torments me the most (Her)
Theme 3	Significant Statement
Improving Quality of Life through Palliative Care	If I don't seek treatment, I'm always in pain and can't do anything (Sur)
	Alhamdulillah, the bleeding that I experienced began to decrease, even if it bleeds I am not so worried...(NR)
	I can do a little activity without being too weak (HA)
	After treatment, my shortness of breath is not as bad as it used to be (Her)
Theme 4	Significant Statement
The role of medical personnel in palliative care	I am grateful for everything the doctors and nurses did to help me, because this is what could help me (Sur)
	Yes, they pay attention to me and always respond to my complaints (NR)
	Attention from the care team is crucial (HA)
	The care team reports everything we experience and feel so that it can be handled quickly and not drag on (HA)
	The nurse is always ready to help when I am short of breath (Her)
Theme 5	Significant Statement
Access to Health Services	I use health insurance, so my family is not worried because we don't have money for treatment, that's why I haven't sought treatment so far (Sur).
	Before entering the hospital, I was actually desperate, I felt it was impossible and did not expect to be hospitalized in the hospital, because I did not have BPJS, we were mediocre, there was no money for treatment, because my neighbor contacted YKI, finally I was taken to the hospital for treatment (NR).
	So far there has been none, because I have been treated using BPJS, so my family is not worried because we do not have money for treatment, that is why I have not been treated (HA).
	Health insurance is very helpful for me who has no money for treatment (Her)
Theme 6	Significant Statement
Hope in Palliative Care	There may be hope for me to live after supplementing with blood (Sur)
	Of course I feel lucky and like I was given a chance to recover because when I was taken to the hospital, at that time I was lacking blood, my face was already white, until the hospital after being examined I added blood, then I had a little spirit, then I felt that maybe there was hope for me to live (NR).
	When I was taken to the hospital, at that time I lacked blood, my face was already white, until the hospital after being examined I added blood, then I had a little spirit, then I felt that maybe there was hope for me to live, even though my cancer was very severe (HA).
	The extra blood made me feel like there was hope for life (Her)
	If possible, there should be fewer patients in the treatment room (Sur)
	Hopefully more people can be helped (NR)
	If possible, the family should accompany you in the hospital room more often (HA)
	I hope the room is more comfortable and the family can accompany (Her)

implementation faces context-specific challenges. The World Health Organization (WHO) defines palliative care across four dimensions: physical, psychological, social, and spiritual, all of which are reflected in this study's thematic structure [6]. The findings also align with the National Consensus Project's eight domains of quality palliative care [23].

However, significant gaps exist between international standards and local implementation. For instance, ASCO guidelines recommend early palliative care integration concurrent with cancer treatment [7], yet the findings show that most patients access palliative services only in advanced disease stages due to limited awareness and service availability. Furthermore, ESMO clinical practice guidelines emphasize comprehensive pain management including immediate opioid access [24], but substantial barriers to opioid availability persist, particularly in rural settings.

The unique Indonesian context includes: (1) heavy reliance on family-based caregiving consistent with collectivist cultural values, (2) healthcare financing through the national health insurance scheme with variable coverage for palliative services, (3) significant urban-rural disparities in specialist availability, and (4) integration of diverse religious traditions into end-of-life care. These factors necessitate culturally-adapted SOPs that maintain fidelity to evidence-based principles while accommodating local realities [25].

Family and Environmental Support

Social and emotional support from family and the environment emerged as a critical foundation for patient well-being. This finding aligns with extensive international literature demonstrating that family involvement improves patient outcomes, reduces caregiver burden, and enhances satisfaction with care [26, 27]. In collectivist Indonesian culture, family plays an even more central role, often serving as primary caregivers and decision-makers [28].

The data revealed that support extends beyond the nuclear family to neighbors and religious communities, reflecting the communal nature of Indonesian society. Family members provide not only practical assistance but also spiritual guidance, reminding patients to maintain faith and patience. This spiritual dimension is consistent with WHO's recognition of spiritual care as an essential palliative care component [6].

Western palliative care models often emphasize individual patient autonomy, whereas the findings highlight family-centered decision-making. This cultural difference has important implications for SOP development, particularly regarding advance care planning and end-of-life discussions [29].

Research from other Asian countries demonstrates similar patterns. Studies from Malaysia found family support significantly predicted quality of life among palliative patients [30], while research from other Asian Pacific regions emphasized the importance of family presence in reducing patient anxiety.

SOPs must formalize family involvement through: (1) structured family conferences at key transition points, (2) culturally-sensitive communication protocols that respect family hierarchies, (3) caregiver education programs covering symptom management, medication administration, and self-care, (4) family assessment tools to identify support needs and risk factors for caregiver burnout, and (5) integration of religious and community support systems.

Pain Management in Palliative Care

Physical pain emerged as the primary complaint affecting patients' quality of life and functional capacity. This aligns with global data indicating 70-90% of advanced cancer patients experience significant pain [31]. Pain assessment and management represent core competencies in palliative care, yet remain inadequately addressed in many settings.

The findings revealed that effective pain management enabled patients to maintain some daily activities and reduced the debilitating effects of weakness. However, observational data documented inconsistent pain assessment practices and limited opioid availability, particularly in district-level facilities. This gap between need and service provision is well-documented in low- and middle-income countries [32].

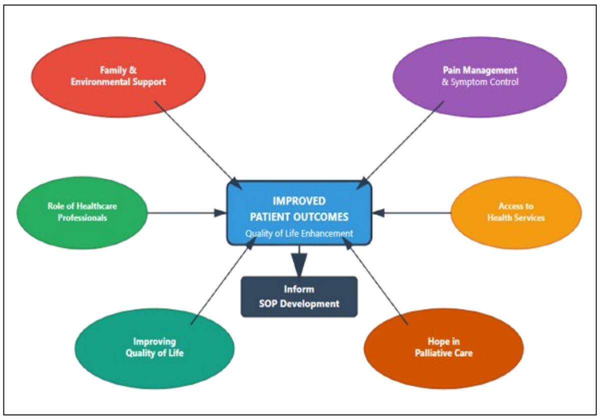

Figure 2. Main Factors Influencing Patient Outcomes in Palliative Care

Table 2. Summary of Direct Observation Findings in Four Referral Hospitals in North Sumatra

No.	Observation Results	SOP Implications
1	The medical team conducts regular evaluations of the patient's physical symptoms, such as pain, nausea and fatigue.	Standardized assessment schedules and tools needed
2	Interventions include analgesics, antiemetics and other supportive therapies.	Medication protocols and titration guidelines required
3	Counseling for patients and their families is done to help them cope with a cancer diagnosis.	Structured family conference procedures needed
4	The palliative care team consists of various disciplines, including oncology, nursing, psychology, and nutrition.	Role clarification and communication protocols essential
5	Some facilities experience shortages of medicines, medical devices, and human resources trained in palliative care.	Resource allocation strategies and alternative care models required
6	Many health workers do not have specialized training in palliative care.	Competency-based training programs necessary

The WHO analgesic ladder provides a framework for cancer pain management, recommending stepwise escalation from non-opioids to strong opioids based on pain severity [33]. ASCO guidelines emphasize regular pain assessment using validated tools and appropriate opioid prescribing for moderate-to-severe pain [7].

The study identified multiple barriers to evidence-based pain management: (1) regulatory barriers creating prescription challenges, (2) inconsistent morphine availability at district hospitals, (3) knowledge gaps among healthcare providers in pain assessment and opioid titration, (4) cultural misconceptions about opioid addiction, and (5) financial constraints despite Nasional Health Insurance coverage.

Evidence-based pain management SOPs should include standardized assessment using validated tools at every clinical encounter, implementation of WHO analgesic ladder with clear escalation criteria, breakthrough pain protocols, adjuvant medication guidelines, prophylactic management of opioid side effects, non-pharmacological interventions, and strategies to address access barriers including hospital pharmacy protocols and patient education on medication safety.

Improving Quality of Life through Palliative Care

Quality of life (QoL) improvement is the primary goal of palliative care. The WHO defines QoL as an individual's perception of their position in life in the context of the culture and value systems in which they live [34]. For cancer patients, disease and treatment-related symptoms profoundly impact physical, psychological, social, and spiritual well-being.

The findings demonstrated that palliative interventions, while not curative, meaningfully improved patients' functional status and symptom burden. This supports extensive evidence that early palliative care integration improves QoL, mood, and potentially survival in cancer patients [35].

Patients reported specific improvements including reduced bleeding, decreased shortness of breath, and ability to perform basic activities. These seemingly modest gains represent significant QoL improvements for individuals with advanced disease.

QoL-focused SOPs should include systematic QoL assessment using validated instruments, goal-concordant care planning aligned with patient priorities, symptom cluster management addressing multiple concurrent symptoms, rehabilitation services maintaining functional independence, psychosocial support addressing anxiety and depression, and regular reassessment with care plan adjustments.

The Role of Healthcare Professionals in Palliative Care

The multidisciplinary healthcare team plays a crucial role in delivering comprehensive palliative care. International standards emphasize interdisciplinary collaboration as essential for addressing patients' complex physical, psychological, social, and spiritual needs [36].

The findings revealed patients' deep appreciation for attentive, responsive healthcare providers. The therapeutic relationship between patients and clinicians significantly influences patient satisfaction, treatment adherence, and clinical outcomes.

Effective palliative care requires clearly defined roles: physicians for medical assessment and complex symptom management, nurses for continuous monitoring and care coordination, social workers for psychosocial assessment and counseling, chaplains for spiritual care, pharmacists for medication optimization, nutritionists for managing cancer-related cachexia, and psychologists for mental health treatment.

Observational data revealed variable team coordination across sites. Best-functioning teams had regular interdisciplinary meetings, shared electronic health records, clear leadership structure, mutual respect for diverse expertise, and conflict resolution mechanisms.

The findings echo international concerns about palliative care education deficits. Most healthcare providers lacked formal palliative care training, communication skills training was absent, and continuing education opportunities were scarce.

Team-based SOPs should specify structural elements including team composition, meeting schedules, and communication protocols. Process elements should include patient intake procedures, care planning processes, family meeting protocols, and transition care procedures. Training requirements should include core competency curriculum, specialized training for physicians and nurses, regular case conferences, and mentorship programs. In resource-limited settings, adaptations should include task-shifting models, telemedicine consultations, and community health worker involvement.

Access to Health Services

Access to palliative care services emerged as a critical determinant of whether patients receive needed care. Healthcare access encompasses availability, accessibility, affordability, and acceptability [37].

The findings highlighted financial barriers as primary obstacles to care access. This reflects broader challenges in low- and middle-income countries where out-of-pocket healthcare expenses drive millions into poverty annually.

Indonesia implemented universal health coverage through BPJS in 2014. While BPJS covers many cancer treatments, palliative care coverage remains variable and poorly understood by both providers and patients. Home-based palliative care is particularly limited.

Multidimensional access barriers include financial barriers (incomplete BPJS coverage, transportation costs, caregiver opportunity costs), geographic barriers (concentration of services in urban areas, long travel distances), organizational barriers (complex referral systems, long wait times), and knowledge barriers (low awareness of palliative care, misconceptions equating it with "giving up").

SOPs should address access through service delivery models including tiered care systems, home-based care programs, mobile palliative care units, and telemedicine consultations. Financial support should include advocacy for expanded BPJS coverage, hospital charity care programs, and subsidized medication programs. Care coordination should involve designated case managers, simplified referral processes, and community resource directories. Education and awareness should include public education campaigns, provider training, and community health worker engagement.

Hope in Palliative Care

Hope emerged as a significant psychological dimension of patients' palliative care experience. Hope in life-threatening illness is complex and evolving, shifting from hope for cure to hope for symptom relief, meaningful relationships, and peaceful death.

Patients described how medical interventions like blood transfusions provided renewed energy and hope, even while acknowledging disease severity. This reflects the dual awareness characteristic of advanced illness: realistic acceptance of prognosis alongside hope for quality time and meaningful living.

Patients also expressed hopes for improved care conditions fewer patients per room, more family presence, enhanced comfort. These aspirations represent important patient priorities that should inform service development and quality improvement initiatives.

Indonesian cultural and religious values strongly influence hope. Islamic teachings emphasize patience and trust in God's will, Christian faith centers on eternal life promises, while Buddhist philosophy addresses impermanence and peaceful acceptance. SOPs should accommodate diverse spiritual frameworks supporting hope.

SOP implications include communication protocols that maintain hope while providing honest information, goal-setting processes that evolve with changing prognosis, life review and legacy activities, spiritual care addressing existential concerns, attention to environmental comfort and family presence, and celebration of meaningful moments.

From Themes to Action: Concrete SOP Development

The six identified themes provide the foundation for comprehensive SOP development. Based on the findings and international best practices, we propose the following SOP framework:

1. Assessment and Care Planning SOP: Initial comprehensive assessment within 24 hours, standardized assessment tools, interdisciplinary care planning within 48 hours, unified documentation, and reassessment schedules based on patient stability.

2. Symptom Management SOPs: Specific protocols for pain, dyspnea, nausea, constipation, delirium, and anxiety; medication algorithms with escalation pathways; non-pharmacological interventions; emergency protocols; and quality metrics.

3. Family Support and Communication SOPs: Family needs assessment, scheduled family conferences, communication scripts for difficult conversations, caregiver education curriculum, and bereavement support protocols.

4. Multidisciplinary Team Functioning SOPs: Team member roles matrix, weekly team meetings, consultation procedures, conflict resolution processes, and quality assurance reviews.

5. Care Transition SOPs: Hospital-to-home transition checklist, hospice enrollment procedures, emergency department protocols, last hours of life pathways, and post-death procedures.

6. Resource-Limited Setting Adaptations: Task-shifting protocols, essential medication lists with generic alternatives, low-cost comfort measures, community resource mobilization, and telemedicine integration.

Cultural and Systemic Barriers to SOP Implementation

Cultural factors include religious influences on end-of-life care preferences, family-centered decision-making prioritized over individual autonomy, stigma and taboo surrounding cancer and death creating barriers to care, and traditional medicine integration alongside biomedical care.

Systemic barriers include healthcare financing challenges despite BPJS universal coverage, regulatory constraints creating opioid prescription barriers, workforce shortages of specialists and trained nurses, and infrastructure limitations in rural hospitals.

Strategies for Successful SOP Implementation

SOP development is only the first step; successful implementation requires: (1) stakeholder engagement including hospital leadership commitment and patient advisory councils, (2) training and capacity building through tiered training programs and mentorship, (3) implementation support with phased rollout and electronic health record integration, (4) monitoring and evaluation using quality indicators and patient surveys, and (5) continuous quality improvement through Plan-Do-Study-Act cycles and learning collaboratives.

Study Limitations

This study has some limitations that should be acknowledged. The sample size was small (n=8), though purposive sampling ensured information-rich cases and data saturation was achieved. Observations were conducted in four tertiary referral hospitals; future research could explore practices in smaller facilities. As this study represents the initial information-gathering phase of the Borg & Gall model, subsequent phases including SOP development, pilot testing, and implementation evaluation will build upon these foundational findings.

In conclusion, this study demonstrates that developing Standard Operating Procedures for palliative care in North Sumatra requires integrating international evidence-based practices with local contextual realities. Six key themes emerged: family support, pain management, quality of life improvement, healthcare professional roles, service access, and hope. These align with international frameworks (WHO, ASCO, ESMO) while revealing unique Indonesian cultural and systemic challenges.

Effective SOPs must be evidence-based yet contextually adapted, holistic, multidisciplinary, accessible, and culturally sensitive. Specific recommendations include standardized pain assessment protocols, structured family conferences, competency-based training, and task-shifting models for resource-limited settings. Successful implementation requires multilevel support: policy reform expanding national health insurance coverage, organizational commitment, provider capacity building, and community engagement.

Well-designed SOPs have the potential to transform palliative care delivery, ensuring all cancer patients receive compassionate, evidence-based care that honors their dignity and supports quality of life.

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Declarations

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Clinical trial registration

Not applicable

Conflicts of interest/Competing interests

The authors declare that they have no conflicts of interest.

Availability of data and material

The data sets used and analyzed during the current study are available from the corresponding author upon reasonable request.

Code availability

Not applicable

Authors' contributions

SZN contributed to the conception, design, supervision, and final drafting of the manuscript. IAH contributed to data collection, analysis, and manuscript drafting. EK contributed to data collection and analysis. L contributed to data collection. MRHA contributed to the primary drafting of the manuscript. All authors read and approved the final version for submission.

Ethics approval

This study was approved by the Health Research Ethics Commission of the Faculty of Nursing, Universitas Sumatera Utara with approval number 2963/VI/SP/2024.

Consent to participate

Written informed consent was obtained from all participants.

Consent for publication

Written informed consent was obtained from all participants for publication of anonymized data in accordance with ethical guidelines.

Declaration on generative AI

The authors used AI-assisted language tools (Grammarly) solely for grammar checking and language polishing. All research design, data collection, analysis, interpretation, and intellectual content were independently developed by the authors without AI involvement.

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