

Clinical Practice Guideline for End-of-Life Care in Patients with Cancer: A Modified ADAPTE Process

Alireza Irajpour

Isfahan University of Medical Sciences

maryam hashemi (✉ maryame.hashemi@gmail.com)

Isfahan University of Medical Sciences and Health Services School of Nursing and Midwifery <https://orcid.org/0000-0003-2331-3600>

Fariba Taleghani

Isfahan University of Medical Sciences

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Abstract

Purpose

This study seeks to adapt a guideline for end-of-life care in patients with cancer to be used by healthcare teams.

Methods

This methodological study was conducted by modifying the ADAPTE process and adding to it a qualitative study and consensus ratings by a multidisciplinary panel of experts. A qualitative study was thus performed to identify the end-of-life needs of patients with cancer. Then, the source guidelines and the results of the qualitative study were used to draft the initial version of the guideline, with 85 adaptation recommendations. A multidisciplinary panel of healthcare experts performed the external review of the recommendations based on the four criteria of relatedness, comprehensibility, usefulness, and feasibility and scored them on a scale of 1-9. The mean score of each recommendation was calculated, and the recommendations were classified into three categories: Appropriate (mean score of 7-9), uncertain (mean score of 4-6.99), and inappropriate (mean score of 1-3.99).

Results

All the recommendations were approved, as they all had a mean score of 7 or higher, and were then categorized into 11 dimensions: Communication management; participatory and evidence-based decision-making management; pain management; dyspnea management; nausea and vomiting management; anorexia and cachexia management; constipation management; death rattle management; management of delirium, anxiety, and restlessness; hydration management; and pharmacological considerations.

Conclusion

The adaptation of the guideline for end-of-life care in patients with cancer in Iran was performed by modifying the ADAPTE process with the participation of multidisciplinary stakeholders and based on the local needs.

Introduction

Guidelines are statements developed systematically [1] based on the best available evidence to improve patient care and help healthcare teams and patients decide about the most appropriate health care [2]. Guidelines are powerful tools in evidence-based care and knowledge transfer [3] that have the potential to improve the care process and outcomes due to their availability, evidence-based development, and conversion of evidence into clinical recommendations [4].

It is essential to consider the available resources for choosing an appropriate method of developing a guideline. De novo guideline development requires considerable time investment, skills, expertise, and resources [5, 6]. Nonetheless, in developing countries, various reasons, such as the lack of high-quality research evidence on health issues, the lack of specialized manpower and facilities, and the conflicts of interest in research, have caused an evidence-to-practice gap and thereby difficulty in developing original guidelines [3, 7]. Under such circumstances, it seems more practical to adapt the existing high-quality guidelines, if any, based on the local conditions [8].

Adaptation involves the use of standard evidence-based tools and methods to develop guidelines based on the local facts and sources [9]. That is, a systematic and valid process is used to modify and approve high-quality guidelines developed in one environment and culture to be used in another environment [3, 6, 8]. The ADAPTE process is one of the adaptation techniques used in the development of many guidelines [3, 10–13]. While remaining evidence-based, the ADAPTE process offers an alternative to the de novo development of guidelines [14], which prevents rework, improves productivity, and increases the use of the existing guidelines [15]. This adaptation method consists of three main phases, nine modules, and 24 steps (Additional File 1) [16] and allows its users to modify the process based on the local conditions and facilities [3, 7, 9–12].

The present study was conducted in Iran for the adaptation of a guideline for end-of-life care in patients with cancer using the ADAPTE process.

Methods

The current guideline was the first end-of-life care guideline in Iran. This study was carried out to modify the ADAPTE process based on the local conditions and resources, given the importance of adaptation of guidelines based on the local needs and problems and the need to address the views and demands of the main stakeholders and the target population. This study was conducted through the following phases.

1. Set-up phase

First, three university professors with a strong background in palliative care and a PhD nursing student formed the organizing committee. Then, the title of the guideline was determined based on criteria such as the cancer mortality rate in Iran, patients' different end-of-life needs and problems, the significant impact of guidelines on standardizing and increasing the quality of care, the lack of end-of-life care guidelines in Iran, and legal support for the development of guidelines and healthcare standards in Iran. The next steps included a search in reputable databases such as the National Guidelines Clearinghouse (NGC) and the National Institute for Health and Clinical Excellence (NICE) to ensure the availability of guidelines related to the study subject, identifying the skills and resources required, identifying the potential endorsing bodies, and drafting the research proposal.

2. Adaptation phase

Determining the health questions

The five items of the PIPOH, including Patient population, Intervention(s) of interest, Professionals, Outcomes, Healthcare setting, were taken into consideration for determining the health questions. Table 1 shows the PIPOH components defined in the present study. Accordingly, the health questions were:

Table 1
The PIPOH components defined in the present study

Row	PIPOH components	PIPOH components in the present study
1	Population	Adult cancer patients who were in their last two to four weeks of life as diagnosed by the oncologist
2	Intervention(s) of interest	End-of-life care for cancer patients
3	Professionals target groups	Members of the health team involved in the end-of-life care of adult cancer patients, including physicians specializing in hematology and oncology, palliative medicine, anesthesia, and pain fellowship; general practitioners; nurses; psychologists; social workers, and spiritual caregivers.
4	outcomes	Improving the quality of life of patients, improving the quality of care, reducing treatment costs, reducing diversity in practice, reducing unnecessary hospitalizations
5	health care setting	Hospital and nursing home environments

- What are the end-of-life needs of adult patients with cancer?
- What is the most appropriate way to relieve the symptoms of adult patients with cancer in their end-of-life stage?

Searching for guidelines and other relevant documents

The following guideline databases and websites were searched using the keywords "Guideline" OR "Consensus" OR "Recommendation" OR "Protocol" OR "Statement" and "End of life" OR "Palliative" OR "Hospice" with the aid of Boolean operators and the search yielded 1451 studies:

MEDLINE/PubMed, EMBASE (Excerpta Media Database), CINAHL (cumulative Index to Nursing and allied health literature), National guidelines clearing house (NGC), Guidelines International Network (G-I-N), National Institute for Health and Clinical Excellence (NICE), Scottish Intercollegiate Guidelines Network (SIGN), Institute for Clinical Systems Improvement (ICSI), New Zealand Guidelines Group (NZGG), Australia National Health and Medical Research Council, Registered Nurses Association of Ontario (RNAO), National Comprehensive Cancer Network, American Society of Clinical Oncology, Cancer care Ontario.

Screening the retrieved guidelines

Additional File 2 presents the process of selecting the guidelines. The inclusion criteria consisted of being written in English, including recommendations for end-of-life management, pertaining to adults with cancer (age 18 years or older), and being endorsed by national or international professional organizations. Furthermore, pathways, primary studies, systematic reviews, guidelines with the target group of children, guidelines for patients, and educational booklets were excluded. Then, the initial screening was performed by removing the duplicates and reviewing the titles and abstracts of the studies. The full text of 18 guidelines was provided to two experts in palliative care to be checked against the set criteria. Finally, eight guidelines [18–25] were selected for quality assessment.

Assessing the guideline quality

The Appraisal of Guidelines for Research & Evaluation II (AGREE II) was used to assess the methodological quality of the retrieved guidelines. AGREE II is a valid and standard tool for reviewing, appraising, and evaluating the quality of a guideline's methodology [2]. This tool has 23 items in the six domains of (1) Scope and purpose; (2) stakeholder involvement; (3) rigor of development; (4) clarity of presentation; (5) applicability; and (6) editorial independence. The guideline development methodology is assessed and scored on a 7-point Likert scale (from 1: 'strongly disagree' to 7: 'strongly agree'). AGREE II also has two overall assessment items that examine the overall quality and the clinical application of the guideline [17]. This tool is presented in Additional File 3.

Five appraisers assessed the guidelines using AGREE II. After assessment, the standard deviation of each domain was measured in SPSS software, and whenever the difference of opinion between the two appraisers exceeded 1.5 about any domain's SD, the appraisers re-assessed the domain. The inter-rater reliability of each domain of AGREE II was also calculated using an intra-class correlation coefficient (ICC) with a CI of 95% (Table 2). In the end, the scores of each AGREE II domain were calculated (Table 3).

Table 2
Inter-rater reliability for each domain of the AGREE II instrument

Domains	ICC (95% CI)
Scope and purpose	0.995 (0.973-1)
Stakeholder involvement	0.970 (0.819–0.999)
Rigor of development	0.977 (0.936–0.995)
Clarity of presentation	0.949 (0.688–0.999)
Applicability	0.981 (0.914–0.999)
Editorial independence	0.986 (0.834-1)

Table 3
Domain scores of guidelines according to the AGREE II

Guidelines	Scope and purpose	Stakeholder involvement	Rigor of development	Clarity of presentation	Applicability	Editorial independence	Overall assessment
Palliative care for adults	67.78%	74.44%	60%	88.89%	80%	90%	76.67%
Guidelines for Palliative and End of Life Care in Nursing Homes and Residential Care Homes	61.11%	62.22%	17.92%	84.44%	52.5%	1.67%	53.33%
Improving supportive and palliative care for adults with cancer	55.56%	91.11%	74.17%	91.11%	68.33%	45%	80%
End-of-life Care During the Last Days and Hours	93.33%	91.11%	90%	87.78%	77.5%	75%	86.67%
Care of dying adults in the last days of life	95.56%	88.89%	93.75%	93.33%	71.67%	73.33%	100%
Clinical practice guideline for quality palliative care	46–67%	44.44%	33.75%	55.56%	48.33%	5%	46.67%
Guidelines for End-of-Life Care In Long-Term Care Facilities	60%	57.78%	26.25%	70%	70%	33.33%	66.67%
Palliative care	60%	84.44%	74.17%	91.11%	56.67%	35%	86.67%

Assessing the guideline currency and content

To ensure that the guideline and its body of evidence were up to date, the guideline publication date, the date and procedure of updating, and the time frame that each guideline had specified for searching the evidence were examined.

It is recommended that one or two experienced experts in the study subject review and compare the content and level of evidence in the guideline [17]. In this study, two members of the research team reviewed the content.

Deciding about and selecting the guidelines

One of the following two decisions is usually adopted for selecting the source guideline(s) for adaptation: Taking the best available guideline as the source and using all or some of its recommendations, or taking more than one guideline as the source and using some of their recommendations [3].

In this study, based on the scores obtained from AGREE II, especially the scores of the rigor of development and currency of the guidelines, the “end-of-life care during the last days and hours” guideline [18] was selected as the source guideline. Also, three complementary guidelines were selected [19–21], so that the recommendations not covered in the source guideline could be extracted from them, if necessary. Details of the guideline appraisal process have been published in an article entitled “The quality of guidelines on the end-of-life care: A systematic quality appraisal using AGREE II instrument” [26].

Identifying the end-of-life needs of patients with cancer

Given the importance of the final product of this study as the first end-of-life care guideline in Iran, the step of *identifying the end-of-life needs of adult patients with cancer* was added to the ADAPTE process steps to comprehensively examine the views and demands of the main stakeholders and target population. The end-of-life needs of adult patients with cancer were identified using the Graneheim and Lundman inductive qualitative content analysis. Qualitative content analysis is a precise and robust process for describing a phenomenon in a concise, useful, and comprehensive manner. This process plays an important role in identifying and understanding the context-based nature of experiences, and yields initial meanings for the concept of interest and analyzes the concepts that describe the phenomenon [27, 28].

In this step, 30 participants were purposively selected with maximum diversity in terms of age, sex, and education. The participants were selected in an interdisciplinary manner from the patients, family caregivers, physicians, nurses, psychologists, social workers, and spiritual caregivers to make sure that the views of all the stakeholders were taken into account. Informed consent to participate in the study was obtained from all the participants. The inclusion

criterion for the healthcare team members was having at least one year of experience in the treatment and care of patients with cancer. The inclusion criteria for the patients were having physical, psychological, and mental ability to participate in the interview. The inclusion criteria for the family caregivers were active participation in patient care and knowledge of the patient's diagnosis.

Data were collected using semi-structured individual interviews. According to Streubert and Carpenter (2011), open interviews allow participants to express their experiences of the phenomenon in detail [29].

Preparing the draft adapted guideline

After identifying the end-of-life needs of patients, these needs were compared with the recommendations in the source and complementary guidelines. The recommendations of the guidelines were compared with one another. The level of evidence associated with each recommendation, the consistency between the bodies of evidence in each guideline, and the currency of each guideline were taken into consideration. Then, the draft guideline was prepared.

3. Finalization phase

External review

The RAND/UCLA Appropriateness Method (RAM) was used to validate the data by experts, gain expert consensus, and increase the acceptance of the guideline. In this method, a decision is made about the appropriateness of a treatment or care method by combining the best available scientific evidence and expert judgment [30]. Accordingly, a questionnaire was prepared based on the initial draft recommendations and distributed among the external reviewers. A multidisciplinary panel of experts was formed with purposive sampling from physicians, nurses, psychologists, social workers, and spiritual caregivers working in specialized cancer hospitals in Isfahan, Shiraz, Tehran, and Jahrom. All the external reviewers are potential users of the guideline. The external reviewers were asked to rate each of the recommendations in the guideline on a scale of 1 to 9 based on the RAM technique and using the four criteria of relatedness, comprehensibility, usefulness, and feasibility (Table 4). A blank line was inserted below each recommendation for the evaluators' suggestions, and the evaluators were asked to write their corrective comments if a recommendation was ambiguous. The evaluators were also asked to determine the person responsible for the implementation of each recommendation to clarify the matter and facilitate the clinical implementation of the recommendations. Physicians, nurses, psychologists, family caregivers, and spiritual caregivers were the professions suggested for each recommendation. The evaluators were allowed to select one or all of the listed individuals or, if necessary, to recommend another profession in the "others" section. Then, the total mean score for each recommendation were calculated in SPSS-16 software. The recommendations were thus categorized based on the expert panel consensus. Those recommendations with a mean score of 7–9 were classified as appropriate, 4-6.99 as uncertain, and 1-3.99 as inappropriate. The recommendations with a mean score of 7 or higher were finalized. Also, according to the expert panel, professions gaining a frequency of more than 50% were selected as the proposed professions for implementing the intended recommendation.

Table 4. The end of life interventions Questionnaire

Number	Relatedness (1–9)	Comprehensibility (1–9)	Usefulness (1–9)	Feasibility (1–9)	Recommendation executor					
					Physicians	Nurses	psychologists	Spiritual caregivers	Fa ca	
Recommendation										

The columns of this table were:

- The first column was related to the row number.
- The second column included the recommendations.
- The third column was related to assessing the Relatedness of the recommendation.

Relatedness means: To what extent is the proposed recommendation considered end-of-life care?

- The fourth column was related to evaluating the Comprehensibility of the recommendations.

Comprehensibility means: How understandable is the recommendation to the executor?

- The fifth column was related to evaluating the usefulness of the recommendation.

Usefulness means: To what extent does the stakeholder rate the proposed recommendation useful for achieving the goal?

- The sixth column was related to the evaluation of the feasibility of the recommendation.

Feasibility means: Considering the manpower, facilities and conditions, to what extent is the provision of this recommendation possible?

- The next column in the table was intended to determine the person responsible for implementing each recommendation.

Guideline finalization

In the final step, a meeting was held with the presence of the guideline development group. The scores given to the recommendations and the external reviewers' feedback were discussed. Then, the final guideline format was developed according to the AGREE II criteria.

Results

This study modified the ADAPTE process. In the preparation phase, although all the steps of the original ADAPTE process were performed, the order of some steps was changed, because the researchers believed that they first needed to determine the members of the organizing committee and the title of the guideline, examine the feasibility of adaptation, and then take the next steps.

Furthermore, only eight screened guidelines entered the adaptation phase, which could be easily appraised by the research team using the AGREE II tool; therefore, the step of "reduce a large number of retrieved guidelines" was omitted. Tool number 2 (search sources and strategies) was also modified. The purpose of this tool is to ensure access to sufficient valid guidelines for adaptation, which was accomplished in this study by searching valid and user-friendly databases related to the research objectives.

Also, the step of "identifying the end-of-life needs of patients with cancer" was added to the adaptation phase to develop a guideline based on the local needs. In this step, data were analyzed using qualitative content analysis, and the patients' end-of-life needs were classified into five categories: Physical needs relief, social support, psychological support, spiritual support, and counseling-educational support.

The guideline draft was prepared based on the end-of-life needs identified in this study and using the two guidelines entitled "Care of dying adults in the last days of life" [18], developed by the National Institute for Health and Care Excellence, and the "Palliative care" guideline [19], developed by the National Comprehensive Cancer Network. This draft contained 85 recommendations, all of which were finalized with a mean score above 7 after their external review by the multidisciplinary panel of experts.

These 85 recommendations were categorized into the dimensions of communication management (four recommendations), participatory and evidence-based decision-making management (seven recommendations), pain management (eight recommendations), dyspnea management (four recommendations), nausea and vomiting management (seven recommendations), anorexia and cachexia management (six recommendations), constipation management (nine recommendations), death rattle management (eight recommendations), management of delirium, anxiety, and restlessness (12 recommendations), hydration management (11 recommendations), and pharmacological considerations (nine recommendations). All the source guidelines and references used were cited. Also, based on the results of the qualitative phase of the study and the agreement of the guideline development group, the tools required by healthcare teams were identified and affixed to the guideline, which included the Palliative Performance Scale (PPS) Version 2, the Palliative Prognostic Index (PPI), the Palliative Prognostic Score (PaP), and pain assessment tools.

Given the limitations in the available facilities and the administrative and executive barriers, the implementation of the guideline is under consideration. The printed version of the guideline has been presented to the faculty members of Isfahan University of Medical Sciences and the healthcare team. NGOs have been identified for supporting the application of the guideline, and the guideline has been distributed among palliative care NGOs. The research team is seeking to prepare and publish an electronic version of the guideline.

Discussion

The adaptation of high-quality guidelines for local use is an effective tool for promoting evidence-based healthcare [4]. ADAPTE is a comprehensive framework for the adaptation of guidelines that has been developed to address challenges such as the time-consuming process of de novo guideline development and the increased application of guidelines. In applying ADAPTE, it is recommended that users adjust it based on their resources, context, and expertise [6]. Accordingly, in many studies, researchers have modified the ADAPTE process and added steps such as qualitative studies and Delphi studies to the process [3, 9–11, 31–33].

In the present study, some of the steps and tools of the ADAPTE process were adapted within its main framework. In other words, adaptations were made in the ADAPTE process based on the study objectives and the local conditions, which included switching the steps in the preparation phase, omitting the "reduce a large number of retrieved guidelines" step, adding a qualitative step, and modifying tool number 2 (search sources and strategies).

Amer et al. also conducted a study to improve the efficiency of the ADAPTE process. They customized the ADAPTE methodology in accordance with their healthcare system in an effort to increase its clarity and applicability, prevent duplication, and reduce the time and cost required while maintaining the main framework of the methodology. They considered the implementation of the eight steps of the original ADAPTE process essential, which included establishing an organizing committee, selecting a guideline topic, searching guidelines and other relevant documents, screening retrieved guidelines, determining the health questions, assessing the guideline quality, external review, and producing the final guidance document. They also suggested modifying three tools and adding three new tools to the process [3].

Attending to the opinions and views of the target population in various ways, such as interviewing stakeholders, is another important criterion in developing a guideline [17]. To this end, we added a qualitative study to the ADAPTE process to gain the experiences, views, and needs of the audience and target population. In this step, the participants were selected heterogeneously, so as to provide a more comprehensive view of the local needs and problems. Therefore, not only the views, experiences, and needs of the patients, but also those of the family caregivers and various members of the healthcare team, such as physicians, nurses, psychologists, and spiritual caregivers, were identified. These findings were used in the development of the guideline. Salarvand et al. also used the ADAPTE process to develop a comprehensive guideline for the nursing management of cancer therapy-induced mucositis. They modified the

ADAPTE process and conducted a qualitative content analysis study to identify the needs of the patients, and then compared and integrated the findings of the qualitative study with the source guideline [13].

In order to increase the acceptability of the guideline and gain the stakeholders' consensus, the degree of agreement with each of the adapted recommendations was examined among the panelists in the four dimensions of relatedness, comprehensibility, usefulness, and feasibility. Other studies have also examined experts' degree of agreement [10, 11, 31–33]. This examination leads to the development of guidelines as consensus development based on evidence, which increases the acceptability of the guideline.

In this study, a multidisciplinary panel of experts was selected from different healthcare professions. The multidisciplinary selection of experts thus allowed the research team to gather a wide range of views and opinions about the guideline and its recommendations, which helps increase both the acceptance of the guideline by stakeholders and its clinical application.

Strengths

Benefiting from the NICE & NCCN guidelines in the adaptation process was one of the strengths of this study. The multidisciplinary participation of a healthcare team in all the stages of the study was another strength of the study. Another prominent point in this study was the qualitative study phase, which identified the end-of-life needs of patients in Iran and the findings of which were considered in the adaptation of the guideline.

Conclusion

The final product of this study was an *interprofessional guideline for end-of-life palliative care in patients with cancer*. The guideline was adapted using the main framework of the ADAPTE process, a qualitative study, and consensus ratings by a multidisciplinary panel of experts.

Declarations

Funding

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Conflict of Interest

The authors declare no conflict of interest.

Availability of data and material: N/A

Code availability: N/A

Authors' contributions

Study conception and design: Alireza Irajpour, Fariba Taleghani

Acquisition of data: Maryam Hashemi

Analysis and interpretation of data: Maryam Hashemi, Alireza Irajpour

Drafting of manuscript: Maryam Hashemi

Critical revision of manuscript: Alireza Irajpour, Fariba Taleghani

Read and approval of the final manuscript: Alireza Irajpour, Fariba Taleghani, Maryam Hashemi

Ethical Considerations

This study was approved by the Vice-Chancellor in Research Affairs and Ethics Committee (code: 394536), Isfahan university of medical sciences, Iran.

This study was carried out in accordance with the principles of the Declaration of Helsinki. The participants were briefed on the goals and methods used in the research and signed informed written consent forms. All the information provided by the participants remained confidential. All the references used in the study were cited.

Consent to participate: Informed consent was obtained from all individual participants included in the study.

Consent for publication: Informed consent was obtained from the participants and all authors approved the final version of the manuscript.

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