

ePROMs in the End of Life and in Making Ethical Decisions. An Integrative Review with Narrative Synthesis

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ABSTRACT

Background: Patient-reported outcome measures (PROMS) are essential tools in clinical practice and research to assess patients' needs from their unique perspectives. They allow the healthcare team to monitor patient status and concerns outside the clinical setting. However, the real innovation in this field is its digitization: electronic patient-reported outcome measures (ePROMs). **Aims:** This review aimed to get an overview of whether these new technologies are being used to aid palliative care teams in their daily struggle to provide comfort to their patients. **Methods:** We conducted a systematic review of articles retrieved from PubMed and Web of Science, up to November 2021. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines were followed. The search strategy yielded 242 records, of which 13 met the predefined inclusion and exclusion criteria. In addition, relevant information related to ePROMs was extracted from each study. **Results:** Outcomes were grouped into the quality of life assessment, symptom burden and simple assessments, and the decision to introduce Palliative Cures (PC). In 61.5% of cases, ePROMs positively impacted patients' quality of life. Furthermore, in 46.15% of cases, ePROMs led Primary Care (PC) teams to make an ethical decision; the same relative value as in the circumstances did not define the direction in ethical terms. **Conclusion:** Remind professionals and patients that these tools exist and can be applied in many situations. If used correctly, they can provide patients with a better quality of life and more complete information for professionals.

1. INTRODUCTION

In patient-centered care, patient-reported outcome measures (PROMs) are the gold standard for effi-

ciently assessing patients' feelings, thoughts and complaints about a clinical intervention or disease [1].

Manuscript is here to view linked references. In this review, the tool we will be dealing with is electronic patient-reported outcome measures (ePROMs). They are defined by consensus as assessing the quality and effectiveness of healthcare measured and reported directly by the patient. The actual definition was introduced in 2017 by Medical Subjects Headings updated (MeSH) by the US National Library of Medicine. Traditionally, patient-reported outcomes (PROs), such as health-related quality of life, have been used at the aggregate level. However, these data are being used as a measurement tool in clinical trials, observational studies, and other studies as a primary way to record patient feedback [2].

As some studies show [3-5], a closer relationship between technology and healthcare has begun to develop, as seen in electronic health records (EHRs). Its origin dates back to the 1970s in the USA, but it was limited to academic purposes, and forms were still handwritten and stored on paper. In the 1990s, consumer electronics emerged, and the first Windows-based medical records were launched. In the 2000s, the information included in these records expanded.

Patient-reported outcome measurement, electronic health records and comparative effectiveness research have converged into a more patient-centered, technology-driven space.

Seeing these technological advances raises some questions: Are our palliative care physicians keeping up with this type of technology? Are they missing out on essential tools to address patient needs? The answer to this question may not be a mystery after all, according to one of the articles, "the use of patient-reported outcomes (PROs) is the gold standard for the assessment and treatment of physical and psychological symptoms, but many existing tools are not designed for use in a complex clinical setting."

We use this statement to guide our study to find evidence that ePROMs are being used to their full extent in Palliative Care practice or end-of-life settings.

2. OBJECTIVES

The main objective was to establish and connect the three domains of this review, the first being their use at the end of life, the second the use of ePROMs and the third the ethical decisions involved in this type of patient.

Our Review Questions Were

Main:

1) How are ePROMs used in palliative care and in the care of life-threatening diseases?

Secondary questions:

1) Are ePROMs used to guide clinical decisions in end-of-life scenarios?

2) Do ePROMs have a positive impact on patients' well-being?

3) Do ePROMs guide medical teams toward ethical decisions?

3. METHODS

An integrative review with narrative synthesis was performed. An integrative review is a specific review method that summarizes the empirical or theoretical literature to fully understand a particular health phenomenon or problem. The integrative review contributes to the presentation of diverse perspectives on a phenomenon of interest [6].

The advantage of this type of review is that many studies can be used to gather information related to the question at hand. Because of this perceived ease in collecting studies, the articles selected were of 10 different designs, including questionnaires in the clinical setting, Randomized Clinical Trial (RCT), Controlled Clinical Trial (CCT), secondary analysis, integrated knowledge translation approach, exploratory research, feasibility study, prospective randomized study, web based survey, observational study [7, 8].

The research procedure consisted of three steps (Table 1).

The PICO model was used to define the criteria for assessing study eligibility.

Table 1. Inclusion and exclusion criteria.

Inclusion	Exclusion
Original peer-reviewed studies	Reviews, grey literature, commentaries, opinion articles or conferences
In English or Portuguese	Theses/dissertations
Study designs included	Not used in palliative care, end-of-life or life-threatening conditions

3.1. Information Sources and Search Strategy

A computerized search strategy was performed with the PRESS (Peer Review Electronic Search Strategies) protocol to have a lower margin of error and increase the possibility that the records obtained were eligible for data extraction. We used this protocol to conform the search, using three keywords, MeSH (Medical Subject Headings) and detailed entry terms. This initial search yielded 242 records (**Appendix**).

3.2. Characteristics of the Study

The results of this systematic review are based on 13 articles [9-21]. All data are compiled in Table, 3 divided into 8 categories: Authors; Journal; Year of publication; Participants involved.

Intervention studied; Context of use of ePROMs and study time; Results of the intervention and results needed for this specific review finally, the Design of the study.

3.3. Selection of Studies

Screening and selection were performed first on the title and abstract and secondly on the full text. Only full-text articles published in English and Portuguese were included. Additional information was collected on access to quality of life [22], randomized studies [23], and patient report articles in different specialties and mixed methods [23-26] (**Table 2**).

3.4. Data Collection

All data are compiled in **Table 3** divided into 8 categories: Authors; Journal; Year of publication. Participants involved; Intervention studied; Context of use of ePROMs and years; Results of the intervention and results needed for this specific review and finally, the Design of the study.

4. RESULTS

The literature search and study selection results are shown in **Figure 1**. In summary, 235 records were identified after eliminating duplicates. After screening titles and abstracts, 104 eligible studies remained, and the full-text versions were reviewed. After reading the full text, 13 articles that met the predefined inclusion and exclusion criteria were included in this systematic review.

Full-text articles were retrieved through the first authors' University accounts when a record was assessed as eligible.

From a total of 13 studies, data were extracted in several categories. The oldest article selected is from 2011, and the most recent report is from 2021, *i.e.*, ten years. The mode is from 2018.

The most relevant articles were published during these years, which tells us that it is a relatively recent topic.

The ePROMs tend to have a role more akin to academic research tools; only recently has there actual use in clinical practice has been developed. However, much progress is being made, as evidenced by a

Table 2. PICOD method for data extraction.

Participants P	Patients underwent palliative care or treatment for life-threatening illnesses with no age restrictions. Family members of patients may be included if they are sole participants.
Intervention I	Any direct or indirect use of ePROMs in the treatment or plan in CP or CFL, including (but not limited to) comfort measures, symptom/suffering relief, side effect atonement, symptom assessment, coping assessment, QOL assessment, QOC assessment, prognostic evolution, and CP introduction/intervention decision.
Context C	Palliative care, end of life, life-threatening illnesses.
Outcomes O	Any outcome including (but not limited to) outcomes directly or indirectly related to the use of ePROMs in quality of life modifiers, disease progression, PC intervention, symptom burden assessment/modifier.
Design D	Any peer-reviewed studies including (but are not limited to) questionnaires in the clinical setting, randomized clinical trials, controlled clinical trials, web-based surveys (following CHERRIES), secondary analyses, integrated knowledge translations, exploratory analyses, feasibility studies, prospective randomized studies.

study by Bausewein *et al.* “Patient reported outcome measures (PROMs) are used in clinical care (e.g., assessing the health status and needs of patients in a hospital at admission), audit (quality assurance of services) and research (e.g., studying the effectiveness of an intervention). The measurement of effects and outcomes on patients is also central to end-of-life (eol) care and the conduct of research in eol care”.

In terms of context, the most studied context is palliative care [8, 10, 11, 15, 16] with records involving its use in a PC setting (referring to the particular case of this review, since one of the research domains is end-of-life), followed by life-threatening conditions, with one record indicating that it was the main context of the study.

Regarding question number one of this review, the following frequency table illustrates the primary uses of ePROMs in clinical practice: As a response to the fourth question.

4.1. First Question

How are ePROMs used in palliative care and in the care of life-threatening diseases? (Table 4)

In this table, we report the number of items that refer to the specified items and which we consider the key ones. We have that the primary use of ePROMs, found in the 13 selected articles, is Quality of Life Assessment, followed by Symptom Burden and Simple Symptom Assessment. In third place, we see the decision to implement palliative care using ePROMs.

Finally, in a triple tie for fourth place, we found the Evolution of the disease and the use of prognosis, the Descriptive role (being that in the particular case of that study), was the description of the last six months of the patient’s life and was used for the Acquisition and provision of patient information to guide and train palliative care professionals.

4.2. Second Question

Are ePROMs used to guide clinical decisions in end-of-life scenarios? (Table 5)

Table 3. Extraction of data from the systematic review.

Authors	Journal	Year	Participants	Intervention	Context/ time	Results	Design
Madden K, <i>et al.</i> [9]	Journal of Pal- liative Medicine	2019	Children on PC	ePROMs in the evaluation of symptoms.	PC One time only	1—Assessment of symptom burden 2—The PROM accurately captures the symptom of the participants. 3—Positive impact 4—Robust, standardized screening will help identify children in need of greater psychological support and less clinically evident symptoms.	1
Hoerger M, <i>et al.</i> [10]	Journal of Clinical Oncology	2018	Adults with newly diagnosed advanced LC or non-rectal CICG.	ePROMs in coping with a CFL. Quality of life assessment.	The first PCs and CFLs 18 months	1—Evaluation of LFC adaptive capacity 2—Targeting more frequent visits and subsequent quality of life assessment improves patient outcomes. 3—Positive impact on the quality of life 4—No ethical decision conclusion	4
Sawatzky R, <i>et al.</i> [11]	Journal of patient-reported outcomes	2018	Adults in home PC and hospital PC	Quality of life assessment using a new specific ePROM	PC One time only	1—Quality of life assessment 2—Use is feasible, but education and training are necessary. Healthcare personnel must be intentionally engaged. 3—Positive impact on quality of life (if used correctly) 4—No ethical decision conclusion	5
Smith S, <i>et al.</i> [12]	Nursing management	2012	Family members of patients with CP enrolled in the LCP pathway.	Evaluation of quality of life in the family prism.	PC between March 2011 and February 2012	1—Guidance for clinical decisions and PC pathways 2—Guide treatment of symptom burden and quality of life modifiers. 3—Patients sign up too late. Clinicians monopolize responses 4—Unethical steer.	4
Pokharel Y, <i>et al.</i> [13]	JAMA Cardiology	2017	Adults with IPF	ePROMs to assess disease progression and prognosis	CFL April 2003 - July 2008	1—LFC Forecast 2—No guidance for decision making 3—No impact on quality of life 4—No ethical decision conclusion	4
Clapham S, <i>et al.</i> [14]	International Journal for the Quality of Health Care	2021	Adults with CFL enrolled in PC on an inpatient or community basis.	Symptom management through ePROM (PCOC SAS) vs. proxy notification	CFL + PC 2020	1—Assessment of symptom burden 2—It can guide decisions even in the most urgent needs. 3—Positive impact on patients in better condition. Notification by delegation is preferred in the most fragile patients. 4—May lead to a “good death”.	10

Continued

Fassbender K. [15]	Journal of Palliative Medicine	2018	Patients diagnosed with solid tumors eligible for clinical trials.	Evaluation of quality of life in patients enrolled in cancer trials.	Clinical trials PC + Oncology Not reported	1—Quality of life assessment 2—See if the implantation of PC is appropriate for the patient. Orient the possible initiation of PC 3—Positive impact on the quality of life 4—No response	2
Lowe JR, <i>et al.</i> [16]	Journal of Palliative Medicine	2018	Patients with acute myeloid leukemia	Description of the patient's last six months prior to death.	PC February 2014 - March 2015	1—Use in the assessment of quality of life, symptom burden, distress, number and duration of hospitalizations (including ICU) or referral for PC 2—Does not serve to guide decisions 3—No impact 4—Sheds light on the unmet needs of AML patients, especially those of PC.	6
Bausewein C, <i>et al.</i> [17]	Health and quality of life outcomes	2011	PC Professionals	Reasons not to use ePROMs in the PC. Practical uses of ePROMs in PC clinical practice.	PC October and November 2009	1—Provision of information, guidance and training to patients. 2—Yes, it is. 3—Positive impact on healthcare 4—A good supply of information leads to better decisions, which in turn lead to ethical decisions in the PC.	9
Bakitas M, <i>et al.</i> [18]	BMC Palliative Care	2017	Patients with heart failure (AHA Stage C/D; NYHA Class III/IV)	Introduction of early PC in patients with HF and undergoing complex therapy.	The first PCs and CFLs July 2013-December 2015	1—Provide information on the acceptance of a specific protocol (ENABLE CHF-PC). 2—There is no guidance in decision making. 3—No impact on welfare 4—No decision direction	7
Kane P, <i>et al.</i> [19]	Palliative medicine	2018	Patients with advanced chronic heart failure	Inclusion of palliative-specific PROMs. Assessment of symptom burden and quality of life.	The first PCs and CFLs September 2014 until February 2015	1—Better identification of patients with ACF for referral to Palliative Care ethical decision 2—Use to guide a strategy for changing classifications in the ACHF 3—If it is directed as the conclusions of the study state, it has a positive impact, improving access to palliative care in these patients. 4—If access to palliative care is improved, we are making the most of	7

Continued

Rogers J, <i>et al.</i> [20]	Journal of the American College of Cardiology	2017	Patients with AHF and PC intervention	Evaluate whether the CP intervention is beneficial in conjunction with an evidence-based element of care for HF.	CFL + PC August 2012 and June 2015	1—Assessment of quality of life and symptom burden in both lines of care. 2—There is no guidance in decision making. 3—Palliative care had a positive impact on well-being (not ePROMs directly). 4—Helped to identify the need for PC, therefore more ethical	3
Matsuda A, <i>et al.</i> [21]	Journal of Cancer Prevention in Asia and the Pacific	2019	Patients over 20 years of age who have been diagnosed with cancer and have discontinued curative treatment.	Assessment of quality of life in cancer patients without curative treatment intention.	PC + Oncology May 2015 to December 2018	1—Assessment of quality of life in cancer patients with no intention of curative treatment. 2—It is used to guide palliative strategies. 3—Positive effect on well-being 4—Not addressed	8

Table 4. Frequency analysis of ePROMs use in palliative care.

Evaluation of symptoms	3
Quality of life assessment	5
Evolution of the disease	1
Descriptive function	1
Provision of information to patients + Guidance + Training	1
Introduction of the PC	2

Table 5. Frequency analysis of ePROMs decision guidance.

Yes	8
No	5

These results in absolute values mean that in 61.5% of the included articles, the ePROMs added information and actively changed the course of thought of the professionals, practically modifying decision making. In 38.5% of the articles, ePROMs did not play an active role in decision making.

4.3. Third Question

Do ePROMs have a positive impact on patient's well-being? The following frequency table illustrates the impact on the quality of life of patients who used ePROMs during their care (Table 6).

As can be seen, 61.5% of the selected articles had a positive impact on the patients' quality of life. On the other hand, in 30.7% of the articles chosen, there was no impact on quality of life, and in 7.8%, there was a negative impact derived from the use of ePROMs tools.

4.4. Fourth Question

Do ePROMs guide medical teams toward ethical decisions?

Table 6. Frequency analysis of ePROMs impact on well-being.

Positive impact	8
Negative impact	1
No impact	4

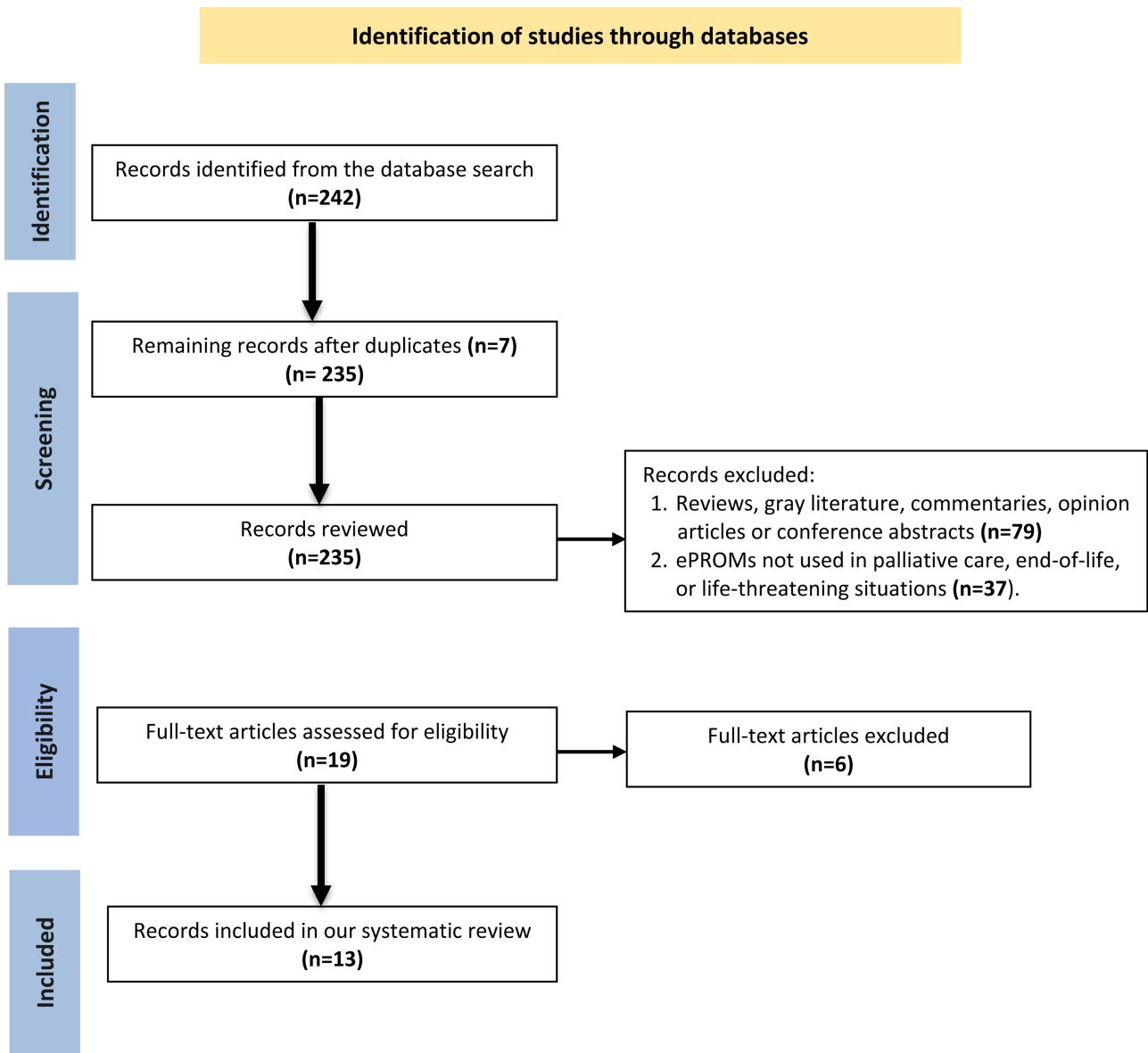


Figure 1. The flowchart of the item selection process. This flowchart was based on the preferred reporting items for systematic reviews and meta-analyses.

The table illustrates whether there was a direction that produced ethical decisions provided by ePROMs (Table 7).

We found an equal distribution between studies referring to an ethical direction provided by ePROMs and studies that demonstrated no order in terms of the ethical qualities of those decisions: only one showed that it negatively affected ethical decision making by leading clinicians down the wrong decision

Table 7. Frequency analysis of ePROMs in ethical decision management.

Ethical management	6
Unethical management	1
No address	6

path. In relative terms, 46.15% of the articles referred to an ethical direction, 46.15% referred to no order, and 7.7% referred to an unethical approach.

5. DISCUSSION

From these results, we can draw some conclusions. For example, suppose we divide this discussion by review questions and apply a cut-off of at least 50% in the frequency analysis to consider an effect to be significant. In that case, we will be able to go deeper into the extracted results.

Considering the years of literature analysis, we can reiterate that these technologies are relatively new when applied to the PC setting. The ePROMs are a simple tool, a standardized questionnaire in digital format that does nothing more than be extraordinary in assessing patient metrics in a simplified and non-interpretative manner.

In the first review question, we concluded that ePROMs in the PC setting were most frequently used in quality of life and symptom assessments; this could be due to the nature of ePROMs to probe the patients to gain an in-depth understanding of their condition from their perspective.

No other tool collects as many raw data from patients as vital signs monitoring. Since vital signs monitoring is a non-holistic way of collecting QoL-related information, ePROMs pave the way as the best method to improve patient comfort in CP and end-of-life scenarios. Therefore, QoL and symptom assessment are of utmost importance in PC, as better QoL is synonymous with better quality of care. Therefore, these assessments are, and rightly so, the most described uses for ePROMs in palliative clinical practice.

In fact, new work is already appearing on the modification of PROMs for FACE-Q head and neck module scales [21].

We can look to the registries for approval of these claims, as one of the selected studies [13] indicated that formalized assessment of PROMs may increase clinicians' attention to patient concerns that are often overlooked.

This means that these data, uninterpreted by clinicians, play a central role in determining patients' most critical needs and help guide the course of treatment according to their needs and wishes.

Regarding the second question and considering the 50% threshold to be considered significant, we can deduce that ePROMs have a considerable impact on guiding clinical decisions, as 61.5% of the included reports described these tools as a driver of clinical findings in PC or end-of-life scenarios. This metric is paramount in deciding whether ePROMs are a valuable tool to consider in the future of palliative care. As the year's pass and ePROMs become a more prevalent trend, we expect these results to increase as uninterpreted and unbiased information becomes a challenge and becomes a pressing need due to improvements in diagnostic capabilities and technologies that require the vision of skilled and trained professionals for interpretation. The fact that 61.5% of registries cite that ePROMs are guiding clinical decisions and that the selected studies are relatively new only reiterates the veracity of these claims.

The results of the third review question indicate that 61.5% of registries reported a positive impact on patients' quality of life. The ePROMs improve quality of life, considering the 50% cutoff.

Our results are another argument favoring unbiased data being a good starting point for decision making.

As we have said before, improvements in QoL are synonymous with improvements in the quality of care in PC. The only study that was detrimental to QoL was when clinicians had a role in interpreting patients needed and inserted the data into the questionnaires, which completely defeats the purpose of

ePROMs. This also means that there is a positive trend in which PA professionals are more committed to acquiring and applying specific ePROMs to address the views and needs of their patients. Although the results are positive, there is room for improvement as practitioners need to be more engaged to learn and correctly apply ePROMs to increase this outcome.

We measured the ethical direction of decisions when using ePROMs to question number four.

We did this by assessing in the core text of the selected studies whether they mentioned that decisions were made considering patients' beliefs, concerns and general condition, the information provided directly by the ePROMs. Using the cut-off point of 50%, we deduce that EPROMs do not have a significant impact as far as ethical direction is concerned.

Ethical guidance was reported by 46.15% of the registries, just below the 50% cut-off. This means that although ePROMs technology is a valuable tool for clinicians and its practical use, it still has many hurdles to overcome to become an essential tool in ethical services. The exact number of records that reported no guidance.

6. CONCLUSION

This review concludes that it is necessary to remind professionals and patients that these tools exist and can be applied in many situations. If used correctly, they can provide a better quality of life and care for primary care patients and a better supply of information to professionals. In addition, healthcare administrators and managers are increasingly advocating the routine use of PROMs and PREMs because of their potential to improve person-centered care by ensuring that the perspectives and experiences of patients and informal caregivers are revealed and integrated into decision making and management.

7. LIMITATIONS

One of the main obstacles to this study is the low number of eligible reports used to conduct the systematic review. There are few registries, including ePROMs used practically and clinically in palliative and/or end-of-life care settings. In any case, more registries are needed to confirm and reiterate our results.

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CONFLICTS OF INTEREST

The authors declare no conflicts of interest regarding the publication of this paper.

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ABBREVIATIONS

ePROMs—Electronic Measures of Patient-Reported Outcomes

eol—End-of-Life

RCT—Randomized Clinical Trial

CCT—Controlled Clinical Trial

LC—Lung Cancer

GIC—Gastrointestinal Cancer

PC—Palliative Care

LFC—Life-Threatening Condition

QoL—Quality of Life

HFpEF—Heart Failure with Preserved Ejection Fraction

PCOC SAS—Palliative Care Outcomes Collaboration Symptom Assessment Scale

APPENDIX

SETS	MeSH terms	Entry terms
1 – End-of-life	Palliative care D010166	<ul style="list-style-type: none"> • Care, Palliative
	Palliative Medicine D065126	<ul style="list-style-type: none"> • Palliative Treatment
	Hospice and Palliative Care Nursing D064946	<ul style="list-style-type: none"> • Palliative Treatments • Treatment, Palliative • Treatments, Palliative
	Pain D010146	<ul style="list-style-type: none"> • Therapy, Palliative • Palliative Therapy • Palliative Supportive Care
	Death D003643	<ul style="list-style-type: none"> • Supportive Care, Palliative • Palliative Surgery
	Hospitalization D006760	<ul style="list-style-type: none"> • Surgery, Palliative • Palliative Care Medicine
	Prognosis D011379	<ul style="list-style-type: none"> • Medicine, Palliative Care • Medicine, Palliative
	Visual Analog Scale D064232	<ul style="list-style-type: none"> • Palliative Nursing • Palliative Care Nursing • Hospice Nursing • Nursing, Hospice • Pain, Burning • Burning Pain • Burning Pains • Pains, Burning • Suffering, Physical • Physical Suffering • Physical Sufferings • Sufferings, Physical • Pain, Migratory • Migratory Pain • Migratory Pains • Pains, Migratory • Pain, Radiating • Pains, Radiating • Radiating Pain • Radiating Pains • Pain, Splitting • Pains, Splitting • Splitting Pain • Splitting Pains • Ache

Continued

		<ul style="list-style-type: none"> • Aches • Pain, Crushing • Crushing Pain • Crushing Pains • Pains, Crushing • End Of Life • End-Of-Life • Determination of Death • Near-Death Experience • Cardiac Death • Death, Cardiac • Hospitalization • Prognoses • Prognostic Factors • Factor, Prognostic • Factors, Prognostic • Prognostic Factor • Analog Scale, Visual • Analog Scales, Visual • Scale, Visual Analog • Scales, Visual Analog • Visual Analog Scales
2 – ePROM's	Electronics D004581	<ul style="list-style-type: none"> • Electronics
	Patient Reported Outcome Measures D000071066	<ul style="list-style-type: none"> • Patient Reported Outcome Measure • Patient Reported Outcomes • Outcome, Patient Reported • Patient Reported Outcome
	Data Accuracy D000068598	<ul style="list-style-type: none"> • Patient-Reported Outcome
	Internet D020407	<ul style="list-style-type: none"> • Outcome, Patient-Reported • Patient-Reported Outcomes
	Surveys and Questionnaires D011795	<ul style="list-style-type: none"> • Accuracies, Data • Accuracy, Data
	Self-report D057566	<ul style="list-style-type: none"> • Data Accuracies • Data Quality
	Outcome Assessment, Health Care D017063	<ul style="list-style-type: none"> • Data Qualities • Qualities, Data • Quality, Data
	Mobile Applications D063731	<ul style="list-style-type: none"> • World Wide Web • Web, World Wide
	Symptom Assessment D063189	<ul style="list-style-type: none"> • Wide Web, World • Cyberspace

Continued

Feedback D005246	<ul style="list-style-type: none">• Cyber Space
Smartphone D000068997	<ul style="list-style-type: none">• Questionnaires and Surveys• Survey Methods
Electronic Health records D057286	<ul style="list-style-type: none">• Methods, Survey• Survey Method• Methodology, Survey• Survey Methodology• Community Surveys• Community Survey• Survey, Community• Surveys, Community• Repeated Rounds of Survey• Surveys• Survey• Questionnaire Design• Design, Questionnaire• Designs, Questionnaire• Questionnaire Designs• Baseline Survey• Baseline Surveys• Survey, Baseline• Surveys, Baseline• Respondents• Respondent• Randomized Response Technique• Randomized Response Techniques• Response Technique, Randomized• Response Techniques, Randomized• Techniques, Randomized Response• Questionnaires• Questionnaire• Nonrespondents• Nonrespondent• Report, Self• Reports, Self• Self-Reports• Outcomes Assessment• Outcome Assessment (Health Care)• Assessment, Outcome (Health Care)• Assessments, Outcome (Health Care)• Outcome Assessments (Health Care)

- Assessment, Outcomes
 - Assessments, Outcomes
 - Outcomes Assessments
 - Outcomes Research
 - Research, Outcomes
 - Outcome Studies
 - Outcome Study
 - Studies, Outcome
 - Study, Outcome
 - Outcome Measures
 - Measure, Outcome
 - Measures, Outcome
 - Outcome Measure
 - Application, Mobile
 - Applications, Mobile
 - Mobile Application
 - Mobile Apps
 - App, Mobile
 - Apps, Mobile
 - Mobile App
 - Portable Electronic Apps
 - App, Portable Electronic
 - Apps, Portable Electronic
 - Electronic App, Portable
 - Electronic Apps, Portable
 - Portable Electronic App
 - Portable Electronic Applications
 - Application, Portable Electronic
 - Applications, Portable Electronic
 - Electronic Application, Portable
 - Electronic Applications, Portable
 - Portable Electronic Application
 - Portable Software Apps
 - App, Portable Software
 - Apps, Portable Software
 - Portable Software App
 - Software App, Portable
 - Software Apps, Portable
 - Portable Software Applications
 - Application, Portable Software
 - Applications, Portable Software
 - Portable Software Application
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		<ul style="list-style-type: none"> • Software Application, Portable • Software Applications, Portable • Assessment, Symptom • Assessments, Symptom • Symptom Assessments • Symptom Evaluation • Evaluation, Symptom • Evaluations, Symptom • Symptom Evaluations • Feedback • Smartphones • Smart Phones • Smart Phone • Phones, Smart • Electronic Medical Records • Electronic Medical Record • Medical Record, Electronic • Medical Records, Electronic • Electronic Health Record • Health Record, Electronic • Health Records, Electronic • Medical Records, Computerized • Medical Record, Computerized • Computerized Medical Record • Computerized Medical Records
3—Ethical Decisions	Patient preference D057240	<ul style="list-style-type: none"> • Patient Preferences
	Decision making D003657	<ul style="list-style-type: none"> • Preference, Patient
	Clinical decision-making D000066491	<ul style="list-style-type: none"> • Preferences, Patient
	Quality of life D011788	<ul style="list-style-type: none"> • Clinical Decision Making
	Delivery of health care D003695	<ul style="list-style-type: none"> • Decision-Making, Clinical
	Reference standards D012015	<ul style="list-style-type: none"> • Medical Decision-Making
	Decision Support Systems, Clinical D020000	<ul style="list-style-type: none"> • Decision-Making, Medical
	Patient care team D010348	<ul style="list-style-type: none"> • Medical Decision Making

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Treatment Outcome D016896	<ul style="list-style-type: none"> • Delivery, Healthcare • Health Care Delivery
Quality improvement D058996	<ul style="list-style-type: none"> • Delivery, Health Care • Contraceptive Distribution • Contraceptive Distributions • Distribution, Contraceptive • Distributions, Contraceptive • Delivery of Dental Care • Dental Care Delivery • Delivery, Dental Care • Health Care • Care, Health • Healthcare • Health Care Systems • Health Care System • System, Health Care • Systems, Health Care • Healthcare Systems • Healthcare System • System, Healthcare • Systems, Healthcare • Nonclinical Distribution • Distributions, Nonclinical • Nonclinical Distributions • Distribution, Nonclinical • Distribution, Non-Clinical • Distribution, Non Clinical • Distributions, Non-Clinical • Non-Clinical Distributions • Non-Clinical Distribution • Non Clinical Distribution • Community-Based Distribution • Community Based Distribution • Community-Based Distributions • Distribution, Community-Based • Distributions, Community-Based • Distributional Activities • Activities, Distributional • Activity, Distributional • Distributional Activity • Standards, Reference • Reference Standard

- Standard, Reference
 - Standards
 - Standard Preparations
 - Preparations, Standard
 - Preparation, Standard
 - Standard Preparation
 - Standardization
 - Clinical Decision Support Systems
 - Clinical Decision Support System
 - Clinical Decision Support
 - Clinical Decision Supports
 - Decision Supports, Clinical
 - Support, Clinical Decision
 - Supports, Clinical Decision
 - Decision Support, Clinical
 - Care Team, Patient
 - Care Teams, Patient
 - Patient Care Teams
 - Team, Patient Care
 - Teams, Patient Care
 - Medical Care Team
 - Care Team, Medical
 - Care Teams, Medical
 - Medical Care Teams
 - Team, Medical Care
 - Teams, Medical Care
 - Interdisciplinary Health Team
 - Health Team, Interdisciplinary
 - Health Teams, Interdisciplinary
 - Interdisciplinary Health Teams
 - Team, Interdisciplinary Health
 - Teams, Interdisciplinary Health
 - Healthcare Team
 - Healthcare Teams
 - Team, Healthcare
 - Teams, Healthcare
 - Health Care Team
 - Care Team, Health
 - Care Teams, Health
 - Health Care Teams
 - Team, Health Care
-

- Teams, Health Care
 - Outcome, Treatment
 - Patient-Relevant Outcome
 - Outcome, Patient-Relevant
 - Outcomes, Patient-Relevant
 - Patient Relevant Outcome
 - Patient-Relevant Outcomes
 - Clinical Effectiveness
 - Effectiveness, Clinical
 - Treatment Effectiveness
 - Effectiveness, Treatment
 - Rehabilitation Outcome
 - Outcome, Rehabilitation
 - Treatment Efficacy
 - Efficacy, Treatment
 - Clinical Efficacy
 - Efficacy, Clinical
 - Improvement, Quality
 - Improvements, Quality
 - Quality Improvements
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