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Implementing PROMs in Low-Resource Oncology Settings: Barriers, Facilitators, and Best Practices

Afnan Saad Alqurashi[1], Mohammed Ghazi Alhazmi, Meshal Ghazi Alhazmi, Saud Jabor Almehmadi, Hamed Mordi Alqarni, Rayan Hisham Felmban, Shabab Shail Alotaibi, Muneef Homoud D Alotaibi, and Naif Ahmed Alduaiji
[1]Corresponding Author Email: Afnaansaad@outlook.sa

Abstract

This review aimed to answer the PICO question: In adult cancer patients in low-resource oncology settings, does the implementation of PROMs compared to standard care without PROMs improve patient-centred outcomes, symptom tracking, and clinical decision-making? Google Scholar and Google were searched to identify research papers on the topic. They were screened and selected repeatedly using certain inclusion and exclusion criteria, through the PRISMA flow process, to select 20 papers. These 20 papers were described, discussed with some quantitative trends and the findings were integrated. Overall, this question was answered in the affirmative. The review showed some effective ways of implementing PROMs, integrating patient data and other essential variables into the PROMs care systems, and the importance of communication between patients and providers and patient feedback to design effective PROMs. Some important points for future research also emerged from this review. The main areas were the use of more mixed approaches, multi-centre, longitudinal studies, patient data sharing for research and practice of PROMs, more patient-focused studies and development of frameworks to implement PROMs. Some limitations of this review and scope for future research have been presented.

Keywords: PROMs, Low-resource, Oncology, PICO, Barriers, Facilitators, Best practices.

Introduction

In recent years, Patient-Reported Outcome Measures (PROMs) have emerged as pivotal tools in oncology, offering nuanced insights into patients' symptoms, functional status, and quality of life that extend beyond clinical metrics. Their integration into cancer care pathways has demonstrated significant potential to enhance patient-centred decision-making, monitor treatment efficacy, and inform health system responsiveness. However, the implementation of PROMs in low-resource oncology settings, characterised by constrained infrastructure, workforce shortages, and fragmented care delivery, remains a complex and underexplored challenge.

This review critically examines the multifaceted barriers impeding PROM adoption in such contexts, including technological limitations, cultural and linguistic diversity, and institutional inertia. It also highlights key facilitators-such as community engagement, task-shifting strategies, and digital innovations-that can enable scalable and context-sensitive PROM integration. Drawing on global case studies and implementation science

frameworks, the review synthesises best practices to guide clinicians, policymakers, and researchers in designing equitable, sustainable PROM initiatives tailored to resource-constrained oncology environments.

The PICO research question for this review is as follows:

In adult cancer patients in low-resource oncology settings, does the implementation of PROMs compared to standard care without PROMs improve patient-centred outcomes, symptom tracking, and clinical decision-making?

PICO elements:

- P (Population): Adult cancer patients receiving care in low-resource oncology settings
- I (Intervention): Implementation of Patient-Reported Outcome Measures (PROMs)
- C (Comparison): Standard oncology care without PROM integration
- O (Outcome): Improved patient-centred care, symptom management, and clinical decision-making

This review is organised as follows: This Introduction section will be followed by the Methodology section. Each of the selected papers will be described in the Results section. These results were discussed with some numerical trends, and the findings will be integrated into the Discussion section. Then, the Limitations of this review, the Conclusions and the Scope for future research will be presented.

Methodology

Using search terms related to the review topic and the PICO question, Google Scholar was searched to identify the relevant papers. The identified papers were screened and selected repeatedly using the PRISMA flow process to finally obtain 20 papers. The screening and selection were done using the inclusion and exclusion criteria listed in Table 1.

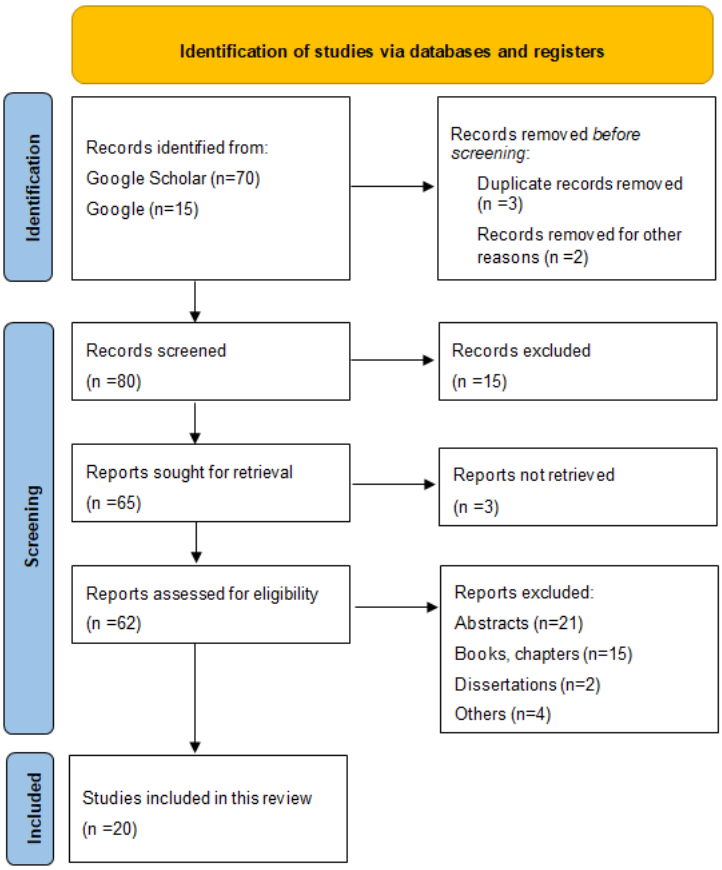
Table 1

Inclusion and exclusion criteria

Inclusion criteria	**Exclusion criteria**	**Remarks**
Full-text research papers and reports	Abstracts	Abstracts may not contain all the required information
Papers in English	Papers in other languages	Even the best translation can distort information from papers in other languages.
Published from 2022 to 2026	Published earlier	To reflect the latest trends.
	Books, chapters	Full-texts not available
	Dissertations	Guided research
	Editorials, comments, etc.	Not true research papers
	Inadequate citation details	Unable to cite in the paper.

Figure 1

PRISMA



The risks of bias were categorised into low, medium, and high based on the following criteria:

Low Risk of Bias

- Definition: The study or data source is well-designed and executed, with minimal threats to validity.
- Characteristics:
  - Clear methodology and transparent reporting.
  - Appropriate sampling and randomisation (if applicable).
  - Blinding, control for confounders, and validated instruments were used.
  - Missing data is minimal or appropriately handled.
- Implication: Findings are likely to be trustworthy and generalisable.

Medium (or Moderate) Risk of Bias

- Definition: Some methodological concerns exist, but they are unlikely to substantially alter the conclusions.
- Characteristics:
  - Minor flaws in design or reporting (e.g., unclear blinding, partial data).
  - Some risk of confounding or selection bias.
  - Measurement tools may be valid but inconsistently applied.

- Implication: Findings should be interpreted with caution; may still be useful with contextual understanding.

High Risk of Bias

- Definition: Significant methodological flaws that seriously threaten the validity of the findings.
- Characteristics:
    - Poor design (e.g., lack of control group, non-random sampling).
    - High attrition or missing data without explanation.
    - Inadequate handling of confounders or selective reporting.
    - Use of unvalidated or inappropriate measurement tools.
- Implication: Findings are unreliable and should not be used to inform policy or practice without corroboration.

The overall quality score was determined by assessing how well the other elements in the Excel sheet are presented in the paper. The aim and risk of bias are included in this quality assessment. Thus, the overall quality score can range from 0 to 7.

Results

In Tanzania, where approximately 1.7 million people live with HIV and 79% achieve viral suppression, Patient-Reported Outcome Measures (PROMs) are essential for capturing meaningful health outcomes and strengthening health system performance. To support their integration into HIV care, Northwestern University and MUHAS have led an NIH-funded initiative since 2019 to build Patient-Centred Outcomes Research (PCOR) capacity. This report summarises a three-day workshop designed to enhance skills in PROMs development, adaptation, and validation. Using the Kirkpatrick Framework, the workshop's impact was assessed across reaction, learning, and application levels. Among 27 participants (44.4% male), 92% reported the workshop met its goals, and 87.5% achieved personal objectives. Significant improvements were observed in knowledge and confidence ($p < .001$), with mean scores rising from 0.44 to 2.55. All participants planned to apply the skills in future research, and qualitative feedback reflected strong enthusiasm and readiness to implement PROMs in HIV care. The limitations include the possibility of self-report bias, the requirement of only post-graduates as the workshop participants, and the absence of a control group. The recommendations include facilitating the incorporation of PROMs training into established national frameworks for research capacity development and ongoing medical education, and strengthening health systems' ability to monitor not only clinical outcomes but also patient-reported experiences and quality of life-critical domains in chronic disease care (Ece, et al., 2025).

The NIH Pragmatic Trials Collaboratory facilitates the design and implementation of 27 embedded pragmatic clinical trials, many of which incorporate Patient-Reported Outcome Measures (PROMs) as either primary or secondary endpoints. The EHR Core engaged in ongoing discussions regarding challenges in collecting Patient-Reported Outcome (PRO) measures during a series of monthly calls. Core leaders synthesised these insights into a preliminary draft, which was subsequently shared with the Patient-

Centred Outcomes Core leadership, principal investigators, and study teams, who also served as co-authors. They were invited to contribute specific lessons learned and recommendations for improving the integration of PRO measures into embedded pragmatic clinical trials (ePCTs) and electronic health records (EHRs). Despite their value, study teams have faced several challenges in PROMs collection. These include competing priorities within healthcare systems, limited clinician engagement and buy-in, technological constraints in low-resource settings, and the absence of standardised approaches for selecting and integrating PROMs into electronic health records. The limitation is the absence of any thematic analysis of the working group discussions (Zigler, et al., 2024).

Integrating dietary screening tools into routine clinical practice remains a challenge globally, including in Nigeria. A pilot implementation study by Batubo, Auma, Moore, and Zulyniak (2024) assessed the utility of the Nigerian Dietary Screening Tool (NiDST) in enhancing patient–clinician communication and identified key barriers and facilitators to its adoption. Using a mixed-methods design, data were collected from 151 patients and 20 clinicians across outpatient clinics in Nigeria. Patients completed the validated 25-item NiDST before their consultations, while both patients and clinicians completed the Measurement Instrument for Determinants of Innovations (MIDI) post-consultation to evaluate implementation factors. Semi-structured interviews provided additional qualitative insights. Implementation fidelity was high, with dietary discussions documented in 92% of consultations. The NiDST was completed in under six minutes on average, contributing to a modest increase in consultation time (<10 minutes). Among clinicians, 25% cited time constraints and limited nutritional training as barriers. However, all clinicians identified the tool's clarity, comprehensiveness, and clinical relevance as key facilitators, alongside its positive impact on communication. Over 96% of patients found the tool quick to complete, and 90.7% reported increased self-awareness regarding their dietary habits. Findings underscore the NiDST's potential to strengthen dietary dialogue in Nigerian clinical settings and highlight actionable strategies for broader implementation. Limitations include not evaluating the role of organisations and socio-political determinants in this implementation phase, as it was a pilot study, specific to the Nigerian context and hence lacking generalisability, and the absence of long-term follow-up, preventing the assessment of sustained effectiveness of NiDST.

Thematic analysis of interviews with 24 participants (13 primary healthcare providers, six behavioural health providers and five administrators) by Smith, Prom, and Ng (2024) showed that variations in behavioural health symptoms and patient attributes influence how providers assess the suitability of Integrated Behavioural Health Care (IBHC), with notable inconsistency across clinicians. IBHC was being used for depression, acute stress, anxiety, adjustment disorder, bereavement, and substance use disorders. Despite being deemed unsuitable for IBHC based on certain characteristics, many patients were still receiving care within this model. Decisions regarding referral to IBHC versus speciality services were shaped by the dynamic interplay between a patient's capacity to participate in treatment and the provider's ability to address their

needs. To support clinical decision-making, a heuristic framework is proposed that incorporates both patient engagement potential and provider management capacity. The limited sample size, self-selection bias, unevenness of participant characteristics, qualitative nature of the study, the use of 'appropriate IBHC' and inappropriate IBHC' limit the generalisability of the findings. The implications are that due to inconsistent assessments of which conditions are suitable for Integrated Behavioural Health Care (IBHC), there is a clear need for greater standardisation in clinical decision-making. Rather than relying solely on diagnostic categories, a dimensional framework-centred on the interplay between patient engagement capacity and provider treatment capability-may better guide referral decisions, especially in low-resource, diverse care settings. A heuristic model incorporating both patient and provider factors could enhance consistency and support in determining appropriate IBHC referrals. Further research has been recommended on using mixed methods, collaborations with local IBHC providers, IBHC under diverse behavioural health conditions with varying levels of acuity and complexity, and training needs of IBHC providers and their effectiveness.

Mobile health technologies offer cardiac patients greater agency in managing their care and hold promise for enhancing clinical care pathways. To address barriers to adoption and support healthcare professionals in evaluating the evidence base for mHealth interventions, a Task Force convened by the ESC Regulatory Affairs Committee developed a set of general and condition-specific criteria. This consensus effort drew on input from clinicians, patient advocates, and experts with regulatory experience, while also integrating insights from existing evaluation frameworks and initiatives led by other medical associations. The recommended criteria for assessing clinical evidence for use of mobile health practices in clinical practice included rhythmic management, heart failure, and preventive cardiology. Each of these was described for diagnostic support, therapeutics, remote follow-up, and education (Caiani, et al., 2024). Limitations include inadequate coverage of all possible uses of mHealth.

A review of existing literature, an analysis of Indian government policies over 75 years, and 16 online semi-structured interviews with stakeholders (including policymakers, innovators, and clinical research scientists) by Joshi (2025) revealed that within the Inclusive Health Information (IHI) framework, the Sectoral Systems of Innovation (SSI) elements show a consistent emergence of AI- and ML-based innovations for low-resource healthcare settings in the MedTech sector, which has historically relied on imports. This capacity is driven by increased access to AI and ML, the rise of diverse actors, and the exchange of knowledge. The IHI framework highlights how the interplay of different actors and institutional diversity shapes the capacity to address unmet needs in early cancer detection in India. Together, these changes demonstrate a systemic transformation, leading to non-invasive, portable innovations for early detection. The Indian government has introduced policy initiatives to integrate these MedTech innovations into a decentralised diagnostic system, promoting affordable cancer detection across urban and rural areas.

The MyPal project developed a digital ePRO tool to enhance palliative cancer care by enabling structured symptom reporting and improving physician-patient

communication. Kyrou, et al. (2025) explored the views of adult and paediatric cancer patients, caregivers, and health care professionals (HCPs) on low-fidelity prototypes of the solution. Twelve pre-pilot focus groups were held across Greece, Italy, Germany, and the Czech Republic, involving 61 participants: 27 adults with chronic lymphocytic leukaemia or myelodysplastic syndromes, 19 children with haematological or solid tumours and their parents, and 15 oncology and palliative care HCPs. Using a semi-structured guide informed by vignettes and personas, discussions were recorded, transcribed, and thematically analysed. Three core themes emerged: Improved Care (Participants valued remote symptom reporting for reducing hospital visits and aiding clinical decisions. HCPs appreciated structured data for treatment planning), Digital Communication Framework (While digital tools were welcomed, concerns arose around data privacy, security, and unclear communication protocols), and Applicability in Health Care (Usability was key, especially for older adults and children. Participants flagged notification intrusiveness and HCPs noted workload pressures, advocating for prioritised alerts). Though MyPal shows promise in enhancing palliative care, successful adoption requires addressing privacy, usability, and integration challenges. Study limitations include exclusion of digitally unskilled individuals, potential researcher bias, limited participant diversity, and insufficient data depth. Incorporating patient feedback and a codesign approach may reduce miscommunication and improve system relevance.

Healthcare institutions are increasingly expected to deliver high-quality care while reducing environmental impact. Simion Ludușanu, Fertu, Tinică, and Gavrilescu (2025) assessed the effects of integrating ISO 9001 and ISO 14001 into a unified Integrated Management System (IMS) in three European hospitals. Using a multi-case qualitative analysis across four domains-environmental impact, care quality, process efficiency, and stakeholder engagement-data were drawn from six years of institutional records. IMS implementation led to 20–28% gains in resource efficiency, improved recycling, and better compliance and patient satisfaction, supported by leadership, cross-functional training, and digital tools. The study concludes that IMS strengthens performance and sustainability, aligning healthcare operations with broader policy goals. To enhance generalizability, upcoming research could utilise a mixed-methods approach for multisite, longitudinal studies that include a wider variety of healthcare institutions, such as small rural hospitals, speciality clinics, and healthcare systems operating in low-resource environments. Furthermore, gaining a deeper understanding of the IMS implementation process-especially regarding the effects of leadership, organisational culture, and stakeholder engagement-continues to be an essential area for investigation. Investigating these facilitators and how they interact with institutional readiness may yield valuable insights to inform future strategies for adopting IMS.

Granberg, Lundqvist, Duberg, and Matérne (2024) aimed to explore support persons' and health personnel's experience of contextual factors during involvement in an intervention for people with profound intellectual and multiple disabilities (PIMD). The authors conducted eight focus groups, consisting of seven focus groups with 34 support personnel and one focus group with healthcare personnel from four rehabilitation

centres in Central Sweden. Three key themes surfaced from the analysis of informants' views on contextual influences: (1) structured frameworks and adequate support improve the practicality of implementing interventions; (2) perceived benefits for individuals with profound intellectual and multiple disabilities (PIMD) enhance the intervention's acceptability; and (3) active participation fosters greater motivation among support persons and healthcare professionals. Three categories were identified for each theme. These findings suggest that successful implementation of interventions for people with PIMD requires a contextualised, recipient-centred approach, underpinned by a well-defined communication strategy. Additionally, tailored training should be offered to both those delivering and those receiving the intervention. The implementation process can be strengthened by fostering an environment where staff are empowered to contribute and actively participate, promoting a sense of ownership among all stakeholders. Adopting a codesign approach encourages collective problem-solving and shared accountability, while also informing the development and refinement of future interventions tailored to individuals with disabilities. The limitations are the likelihood of response bias, sending the questions in advance, limiting their openness to discussions, and the likelihood of the focus groups not covering the complete range of possible responses.

Kim, Jung, and Chun (2025) evaluated the reliability, validity, and feasibility of the interRAI Check-Up Self-Reported (CUSR) tool among 158 older adults in a low-income urban district of Seoul, South Korea. Administered by trained lay interviewers, the CUSR demonstrated strong psychometric properties, with high interrater and test–retest reliability, and strong criterion validity when compared to clinician-administered interRAI Check-Up (CU) assessments. Participants found the tool user-friendly and reflective of their health status. The CUSR proved to be a reliable and feasible instrument for assessing functional status in generally healthy, pre-frail older adults living independently in underserved communities. By enabling self-assessment with lay support, it offers a scalable alternative to clinician-led evaluations, potentially reducing healthcare burden and strengthening community-based care. The data generated can support both individual profiling and the use of patient-reported outcome measures (PROMs) to assess service effectiveness. Designed to shift from the clinician-driven interRAI CGA model to a self-report approach, the CUSR addresses barriers to PROM implementation such as frailty and low literacy. However, limitations include its focus on a single district, exclusion of frail individuals due to COVID-19, and potential challenges for participants with limited literacy.

In this meta-epidemiological study of 265 RCTs (65,115 women) comparing methods of labour induction, Patabendige, Rolnik, Li, Mol, and Li (2025) analysed nine individual participant data (IPD) meta-analyses to assess trial quality and trustworthiness. Trials were categorised into IPD-shared (n=64) and non-shared (n=201) groups and evaluated using the TRACT checklist, trial registration status, baseline data plausibility, and reproducibility of statistical results. IPD-sharing was strongly associated with higher trial quality. Adequate registration post-2010 was more common in shared trials (44.0% vs 14.1%, $p < 0.001$), and fewer shared trials raised trustworthiness concerns

(15.6% vs 50.9%, p < 0.001). Risk of bias was lower in shared trials (20.3% vs 28.4%, p = 0.20), and their baseline p-value distributions aligned with expected patterns (p = 0.50 vs 0.006). While inconsistently reported p-values were found in both groups, non-shared trials showed exaggerated effect estimates in three of nine comparisons (RORs 2.36 to 1.29). GRADE assessments revealed higher or equal certainty of evidence in shared trials, especially among those without trustworthiness concerns. These findings underscore the importance of IPD-sharing in enhancing reproducibility, transparency, and evidence quality. The TRACT checklist, though not yet validated, offers a structured approach to identifying problematic trials. Limitations include exclusion of frail participants due to COVID-19, inability to assess abstracts without IPD, and potential underpowering due to group size imbalance. Sensitivity analyses showed no significant trustworthiness differences by publication year. Promoting IPD-sharing and rigorous trustworthiness assessment is essential for improving evidence synthesis and clinical guideline development in labour induction research. Future work should focus on refining tools to detect and manage trial integrity issues.

Disabled children often face barriers to Family-Centred Care and social inclusion, while their families shoulder heavy caregiving demands. Although healthcare providers play a key role in paediatric rehabilitation, service access and quality remain uneven. To improve care delivery, Carrington, Hale, Freeman, and Perry (2025) explored stakeholder experiences through qualitative interviews with nine service advisors and focus groups with 16 therapists, analysed using a reflexive thematic approach. The central theme-*"relationships enhance knowingness"*-underscores the importance of mutual understanding between providers and families in delivering meaningful care. Subthemes included perceptions shaped by individual roles and family dynamics, with service users uniquely highlighting their therapy experiences. Family capacity emerged as a critical factor influencing engagement. A new model for Family-Centred responsive care is proposed to guide tailored service delivery. Limitations include the absence of nurses, paediatricians, and social workers, limited youth representation, and potential exclusion of marginalised voices. Future research should examine the Relate-Know-Respond Model's application across disciplines, including nursing and play-based therapy, and further explore how knowingness and capacity are understood in diverse clinical contexts.

Chopra, Hou, Nimako, and Roder-DeWan (2024) conducted interviews with 13 COVID-19 patients, a focus group with eight clinicians, and analysed care plan follow-up documents to address three research questions: (1) How do patients experience Collaborative Longitudinal Health (CLH), and how do they prefer to share these experiences with clinicians? (2) What is the clinical value of patient-reported data, and what insights emerge when linked with clinical records? (3) How can design enhance clinical workflows and provider engagement with rich patient data to support collaborative decision-making? Participants expressed preferences regarding data collection frequency, communication platforms, and data formats. Notably, patients favoured sharing subjective, day-to-day experiences to contextualise their CLH journey, while clinicians prioritised aggregated, objective indicators of health progress.

Compliance challenges among patients also surfaced, offering clinicians valuable input for tailoring personalised care plans. Design opportunities include developing visualisations and dashboards that present holistic patient profiles and integrate seamlessly with existing workflows. We urge the CSCW community to move beyond technology-centric solutions and harness both EHR data and external sources (e.g., activity/sleep trackers, survey check-ins) to foster deeper collaboration in clinical care. Study limitations include a participant sample skewed toward White/Caucasian, middle-aged females and a small clinician cohort.

This single-arm observational study by Khan, et al. (2025) evaluated the costs and outcomes of therapist-guided internet-based CBT (iCBT) for depression, social anxiety, and panic disorder across four Norwegian hospitals (2021–2024). They assessed symptom severity posttreatment (T2) and at 6-month follow-up (T3) using PHQ-9, SPIN, and PDSS, alongside measures of health-related quality of life (EQ-5D-5L), work and social functioning (WSAS), and sick leave days. Mixed-effects models estimated changes over time and across hospitals. Program costs were calculated from hospital and societal perspectives, factoring in infrastructure, therapist guidance, and sick leave. Among 565 participants, substantial improvements were observed across all outcomes. At T2, 35.1% responded positively and 23.7% achieved remission; WSAS scores showed 33.0% response and 23.0% remission. EQ-5D-5L scores increased by 0.11 at T2 and 0.12 at T3, while sick leave days declined by 3.2 and 7.7 days, respectively. Outcomes were consistent across hospitals and robust to sensitivity analyses. Mean program cost per patient was US $1030.12 (SD 451.6), varying by site (US $636.41–$2152.47), largely due to differences in patient volume. Findings suggest therapist-guided iCBT can effectively reduce symptom burden and enhance functioning when integrated into routine specialist care. Cost variation highlights the importance of patient volume for resource efficiency. Limitations include a lack of a control group, low adherence and data completion, uneven hospital sample sizes, and limited data on therapist expertise and implementation fidelity.

To identify effective strategies for integrating patient-reported outcomes (PROs) into cancer care, a global survey of 362 clinicians, primarily nurses (46.7%), physicians (38.7%), and allied health professionals (14.6%), across 41 countries by Cheung, et al. (2022) revealed key insights. About 25% were frequent PRO users, applying them in over 80% of cases. PROs were mainly used to enhance communication (60.2%) and track treatment responses (52.6%). The barriers were categorised into practitioner-related, patient-related and institution-related. Major barriers included insufficient technological infrastructure (70.4%) and lack of streamlined clinical workflows (61.5%). Practitioners in low- and middle-income countries more often lacked access to PRO experts and faced challenges in selecting relevant domains, non-adherence of patients to PRO norms and low literacy levels. Physicians, more than other professionals, reported workflow disruptions during PRO collection as a significant obstacle. The limitations included difficulty in recruiting participants from developing countries, language barriers, selection bias in participant recruitment, heterogeneity of the sample, and possibly not representative of all oncological aspects. The findings can

inform strategies to embed patient-reported outcomes (PROs) into routine cancer care through targeted capacity building. Strengthening global partnerships-especially between high- and low-resource settings-will enhance the exchange of best practices. Identifying local champions can help advocate for PRO integration and build momentum. Future efforts should involve clinical leaders and managers and explore how PRO data can support population-level analyses to assess healthcare quality and system performance.

The practice of quality measurement is empirically lacking from surgical outreach trips to LMICs, which may limit the safety and quality of care provided. Using convergent mixed-methods, Welch, Kamal, Chatterjee, and Shapiro (2022) aimed to: (1) identify and evaluate barriers and facilitators to outcome measure collection; and (2) report the sample rate of such collection on hand surgery outreach trips to LMICs. A survey of 33 (30 surgeons and three administrators) and interviews with 22 surgeons (19 surgeons and three administrators) and administrators involved in hand surgery in 49 countries, revealed that the rates of collection were the most common for total case number (83%) and patient mortality (65%). Longitudinal outcomes (e.g., patient follow-up or time away from work) were less frequently recorded (9% and 4%, respectively). Content analysis revealed barriers related to each domain of the Pettigrew framework. The Pettigrew framework consists of six elements of process, four elements of content, three elements of external context and four elements of internal context. This analysis demonstrates low levels of outcome collection on outreach trips and identifies priority areas for improvement. The barriers were limited resources, a lack of a database, and cultural differences. One facilitator was collaborative relationships with local staff. Developing context-specific solutions aimed at addressing barriers (e.g., resource/database availability) and promoting facilitators (e.g., collaborative relationships) may encourage higher rates of collection, which can improve patient safety, quality of care, and accountability when conducting outreach trips to LMICs. Among the limitations, the study's sampling approach precluded calculation of a response rate, and while qualitative saturation was achieved, the insights from 33 participants reflect only a subset of outreach stakeholders. Data were limited to surgeons and administrators from visiting teams, whose perspectives may not represent the broader provider network or local staff, introducing potential sample and recall bias. Despite efforts to reduce leading questions, interviewer bias may have influenced responses. Additionally, some participants drew on experiences from both hand and non-hand outreach trips, which may have blurred the specificity of their accounts.

Despite limited research on integrating Patient-Reported Outcome Measures (PROMs) across hospital-wide settings and diverse medical conditions, Huberts, et al. (2024) aimed to identify key facilitators and barriers to inform implementation strategies. Using a mixed-methods approach-interviews, focus groups, and questionnaires- the study engaged PROM responders and non-responders, healthcare professionals (HCPs), and medical and nursing students. Data included 33 interviews (15 patients, 14 HCPs, 4 students), two student focus groups, and questionnaire responses from 370 responders

(37.0%), 173 non-responders (12.5%), 44 HCPs (22.7%), and 40 students. Thematic analysis of interviews informed questionnaire development, which was used to validate findings across stakeholder groups. Final themes and recommendations were prioritised by the Value-Based Healthcare expert group at Erasmus Medical Centre. Four overarching themes emerged: embedding PROMs training throughout HCP education, reducing burden and enhancing motivation for HCPs, concurrent use of generic and disease-specific PROMs, and supporting and activating patients while minimising their burden. While digital tools, institutional support, and a unified vision are helpful, sustained engagement and training are essential for successful PROMs adoption. Limitations: the generalizability of findings beyond academic hospitals and the potential for condition-specific challenges were overlooked. Nonetheless, the study offers a foundational framework for broader PROMs implementation, with relevance to other healthcare settings, supported by ongoing best practice exchange within the Dutch University Hospital Federation.

While PROMs hold promise for improving cancer care, their routine use remains inconsistent. Lehmann, et al. (2025) surveyed 784 members of the European Organisation for Research and Treatment of Cancer (EORTC) to examine PROM adoption across regions, cancer types, and user groups. Of respondents, 43% did not use PROMs, 27% were occasional users, and 30% used them regularly, usage being notably higher in Western Europe. PROMs were mainly employed to monitor health status and facilitate communication, with the highest uptake in bone, soft tissue, genitourinary, and gynaecological cancers, and lowest in lung cancer. Key barriers included limited time (70%) and inadequate guidance (73%). PROM users more often cited patient-level challenges, such as accessibility, than non-users. The study's limitations include a predominance of academic respondents, potential regional bias due to EORTC's European focus, and overrepresentation of physicians and EORTC-specific PROMs. Importantly, facilitators were not assessed. Findings underscore the heterogeneous use of PROMs and the need for tailored implementation strategies that address context-specific barriers, especially in underutilised regions and clinical areas.

A PRISMA review of 25 research papers and five reviews by Lyu, et al. (2024) showed that the quality of the qualitative studies was good and that of the quantitative studies was fair. The authors identified 52 facilitators and 50 barriers to the implementation of patient-reported outcomes in clinical oncological practices. These facilitators and barriers covered the domains used in the comprehensive framework for implementation research (CFIR) framework and 39 constructs, mainly related to evidence-based innovation, innovation complexity, innovation design, structural characteristics, compatibility, incentive systems, access to knowledge and information, innovation deliverers, innovation recipients, and planning.

A PRISMA review of 27 studies conducted by Patel, et al. (2022) indicated that most pathways were developed in tertiary hospitals located in lower-middle-income countries and concentrated on elective surgical procedures. Only six of these studies were rated as high quality. The majority of the pathways were modifications of international guidelines and were implemented in individual hospitals. The primary

obstacles to implementation included the cost of interventions and a shortage of available resources. Research from a variety of low and lower-middle-income nations shows a growing application of perioperative pathways tailored to resource-limited environments, although there is a lack of published work from low-income nations, first-level hospitals, and emergency surgical care. Similar to high-income countries, tackling the beliefs of patients and clinicians poses a significant challenge in enhancing care. Research that is relevant to the context and focused on patients, particularly qualitative and implementation studies, could significantly enhance the current body of knowledge. The limitations include the exclusion of non-English articles, grey literature, and studies from UMICs, which may have omitted relevant insights from resource-limited settings, and some articles may have been missed due to inconsistent terminology for care pathways. Notably, half the included articles originated from India, spanning varied public and private institutions across different hospital tiers, offering diverse perspectives on pathway implementation.

Discussion

This review aimed to answer the PICO question: In adult cancer patients in low-resource oncology settings, does the implementation of PROMs compared to standard care without PROMs improve patient-centred outcomes, symptom tracking, and clinical decision-making?

The answer is a firm Yes. The reviewed papers dealt with many oncological contexts, both in developing and developed countries. All findings showed that implementing PROMS improves patient-centred outcomes, symptom tracking and clinical decision-making.

Before integrating the findings, some quantitative trends are discussed below.

Year of publication

The frequencies of the reviewed papers according to their years of publication are presented in Table 2.

Table 2

Year of publication

Year	**No.**
2022	3
2023	0
2024	8
2025	9

No paper published in 2023 or 2026 was seen during the selection process. Out of 20, 17 were published during 2024-2025. Three papers were published in 2022, all of which were reviews.

Country of study

The distribution of papers according to their countries of study is presented in Table 3.

Table 3

Country of study

Country	**No.**

Tanzania	1
USA	3
Nigeria	1
International	6
India	1
Europe	2
Sweden	1
South Korea	1
New Zealand	1
Norway	1
China	1
Netherlands	1

There were single papers from nine countries. A maximum of six papers were international studies covering many countries. There were three papers from the USA, and two were European studies.

Method of study

The distribution of papers according to the methods used in them is presented in Table 4.

Table 4

Method of study

Method	**No.**
Mixed	4
Discussions	1
Interviews	3
Consensus statement	1
Focus groups	2
Case studies	1
Survey	5
Meta-analysis of RCTs	1
Review	2

Surveys (5), interviews (3), and mixed approaches (4) together accounted for 12 out of 20 papers. Two each used focus groups and reviews. Discussions, consensus statement and meta-analysis of RCTs were used in one paper each.

Mention of Limitations

Acknowledging the limitations of the study is a kind of ethical behaviour. It cautions the reader on what to accept and what not to accept from the studies. The distribution of papers according to mentioning limitations or not is presented in Table 5.

Table 5

Mention of limitations

Limitations	**No.**

Yes	18
No	2

There was no serious problem here. Out of 20, 18 papers mentioned limitations, and only two did not.

Implications

Implications of the study are important to guide the reader on what is next. Although implications are not always specifically mentioned, they were derived from the discussions and conclusions of some papers. The frequencies mentioning or not mentioning implications are presented in Table 6.

Table 6

Mention of implications

Implications	**No.**
Yes	18
No	2

Similar to the limitations, there was no serious problem in this case, either. Out of 20, 18 papers mentioned implications, and two did not.

Recommendations

Most papers hesitated in giving recommendations. This may be due to these studies being exploratory, and many questions were still to be answered by further research. The distribution of papers according to mentioning or not mentioning recommendations is given in Table 7.

Table 7

Recommendations

Recommendations	**No.**
Yes	7
No	13

A majority of 13 papers hesitated to give recommendations, while seven gave recommendations.

Risks of bias

Various types of biases, deliberate, causal or unintended, can occur in a study. They include biases like methodological, sampling, responses, and interpretations. In this review, the overall bias was assessed as low, medium and high, as has been explained in the Methodology section. The results are presented in Table 8.

Table 8

Risks of bias

RoB	**No.**
Low	6
Medium	9
High	5

Six papers had low levels of bias. There may not be any serious problem in accepting them and generalising the findings. Nine papers had medium levels of bias. Their findings need to be accepted with caution, limited to contextual knowledge. Five papers

had high levels of bias. Their findings may be highly unreliable and should not be used to implement or inform policy without confirmation through further research.

Quality of papers

As has been explained in the methodology section, the overall quality of papers reflects the assessment of other elements of the study. They include aim, method, findings, limitations, implications, recommendations and risks of bias. If everything is excellent, the paper will get the maximum possible score of 7. Depending on inadequacies in one or more of these elements, the score will be less than 7. If an element is absent, the score for that element will be zero. The overall quality scores were categorised into ranges of values to reflect low, medium or high quality, as given in Table 9.

Table 9

Quality of papers

Quality	**No.**
4.5 to 5.0	5
5.25 to 5.75	5
>5.75	10

Although the mid-value of 7 is 3.5, the minimum score obtained by the reviewed papers was 4.5. That means all papers were above average. Thus, the ranges given in Table 9 represent medium, good and excellent qualities. Interpreted in this manner, half of the reviewed papers were of the highest quality, excellent. The paper by Patabendige et al. (2025) scored the highest value of 6.75. There were five papers of good quality and five papers of medium quality. The lowest score of 4.5 was obtained by the paper of Joshi (2025) and Simion Ludușanu et al. (2025).

Integration of findings

An effective way to implement PROMs, especially in low-resource countries, is to conduct workshops (Ece et al., 2025). However, some challenges may need to be addressed for PROMs data collection (Zigler et al., 2024). To promote dialogue and communication between patients and caregivers, screening tools may be useful (Batubo et al., 2024). The checkup self-reported tool is effective for older patients in underserved communities (Kim et al., 2025). Mutual understanding between providers and patients/families is required for effective implementation of PROMs.

Incorporating patient feedback and a codesign approach can facilitate communication (Kyrou et al., 2025). Interventions for patients with PIMD can only be effective if they are contextualised, patient-centred approaches (Granberg et al., 2024). If iCBT is guided by therapists, symptoms can be reduced and functioning can be enhanced by integrating with routine specialist care (Khan et al., 2025). Patient-reported outcomes can be successfully implemented if all stakeholders are consulted, and inner and outer settings are considered (Lyu et al., 2024). Targeted capacity building, strengthening global partnerships between low- and high-resource countries, can inform strategies for routine cancer care (Cheung et al., 2022). Higher rates of patient data collection are facilitated by addressing resource and database availability barriers (Welch et al., 2022).

For integrated behavioural healthcare, a standardised approach is better in low-resource, diverse care settings (Smith et al., 2024). When consensus statements are published by competent expert groups, governments need to take policy initiatives for their practice (Caiani et al., 2024). Policy initiatives to implement MedTech solutions into decentralised diagnostic systems can increase the efficiency of cancer detection (Joshi, 2025). Clinical workflows can be made more efficient by using visualisations and dashboards to present holistic patient profiles and integrate with the current workflows (Chopra et al., 2024).

In research on PROMs, it is better to use mixed approaches in multisite longitudinal studies to increase the generalizability of their findings (Simion Luduşanu et al., 2025). Internal patient data sharing can enhance evidence quality, transparency and reproducibility of results (Patabendige et al., 2025). More qualitative, context-based, patient-focused implementation studies will be helpful to improve cancer care (Patel et al., 2022). Developing a foundation framework for PROMs implementation in the relevant healthcare settings is an important research area (Huberts et al., 2024). PROMs are used heterogeneously, and there is a need to develop implementation strategies tailored to address context-specific barriers in underutilised regions and clinical areas (Lehmann et al., 2025).

Limitations of this review

Using only Google Scholar to identify papers can exclude several papers available in databases. Setting the period from 2022 to 2026 can exclude many earlier papers. Possibly, using different search terms could have yielded more papers. Excluding papers in other languages can miss many important papers. Despite best efforts, using both Google Scholar and Google, it was found very difficult to reach even 20 papers.

Conclusions

This review aimed to answer the PICO question: In adult cancer patients in low-resource oncology settings, does the implementation of PROMs compared to standard care without PROMs improve patient-centred outcomes, symptom tracking, and clinical decision-making? Overall, this question was answered in the affirmative.

The review showed some effective ways of implementing PROMs, integrating patient data and other essential variables into the PROMs care systems, and the importance of communication between patients and providers and patient feedback to design effective PROMs.

Some important points for future research also emerged from this review. The main areas were the use of more mixed approaches, multi-centre, longitudinal studies, patient data sharing for research and practice of PROMs, more patient-focused studies and development of frameworks to implement PROMs.

Scope for future research

As already indicated in the previous paragraph, more use of mixed approaches, multi-centre longitudinal studies, and patient data sharing for PROMs research and practice and framework development are some areas with high scope for research.

In the quantitative trends, the 20 papers were from only nine countries. Therefore, multi-centre studies should be conducted in different countries. Many papers had a medium level of risk of bias. This needs to be rectified in future research. Many papers did not provide clear implications or recommendations. Future research papers should address this issue effectively.

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