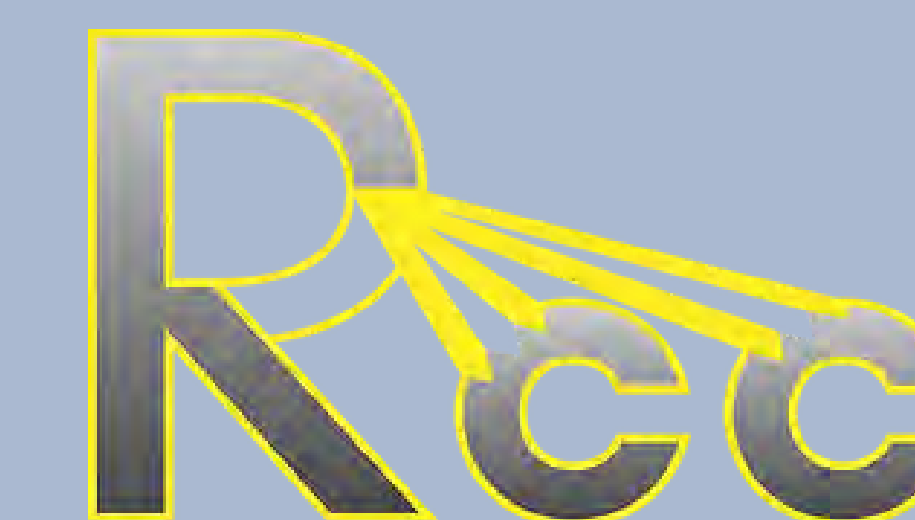


Evaluating Global Patient Education Models for Radiation Therapy in LMICs: A Survey-based Public Health Initiative



Background

Radiation therapy (RT) is a common and effective treatment for cancer that uses high-energy radiation to target and destroy cancer cells. It is often delivered over multiple daily-sessions, sometimes up to 7-8 weeks, requiring careful planning and precision to maximize the effectiveness while minimizing harm to surrounding healthy tissue. Nearly 60% of cancer patients will undergo RT at some point in their lives. Patient education is critical for RT to ensure that patients understand their complex treatment, which can improve **compliance, reduce anxiety, and enhance treatment outcomes.**

There are regional challenges across the globe on access to high-quality cancer care, including the lived experiences for patients undergoing cancer-directed therapy. In low- and middle-income countries (LMICs) healthcare systems may be **under-resourced, overburdened,** with patients that have **low baseline health literacy.** These challenges necessitate **culturally sensitive, accessible patient education.**

Despite its importance, patient education in radiation oncology (RO) is often inconsistent or inaccessible across diverse regions. Little is known about the current models of patient education in LMICs, as most research and standards are derived from high-income countries. This knowledge gap creates an opportunity to evaluate and enhance education practices in settings where resources are limited, and where patient education may face additional barriers, such as language differences, cultural beliefs, and varying levels of literacy.

Systematic Review

Our initial review assessed patient education practices in radiation therapy across LMICs by conducting a systematic review as per PRISMA guidelines. Systematically searching on PubMed, Cochrane Library, and Embase for studies published up to March 2024, using terms “radiation oncology” or “radiation therapy” or “radiotherapy” and “patient education”, querying only research from LMICs based on the World Bank’s classification, we wanted to evaluate availability of data on the efficacy, design, and implementation of patient education strategies in these settings. This search yielded 16,872 articles, of which 4,955 full-text articles met pre-screening for relevance. 97% were not focused on LMICs, and the 3% focused on LMICs did not address RT and were unrelated to patient education.

Survey Design & Implementation



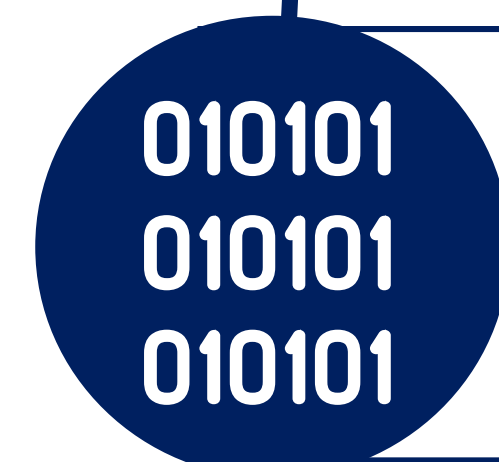
Design Target Audience and Goals

Key stakeholders in RO to ensure a comprehensive understanding of patient education practices globally. Focused on gathering data from LMICs to address educational challenges



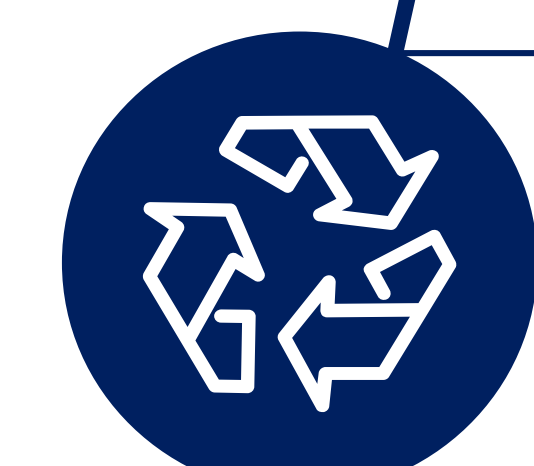
Adapt for Cross-Cultural Relevance

Tailored survey language and content for globally accessibility, accounting for language barriers and varying literacy levels. Ensured questions were culturally appropriate for non-native English speakers



Design Survey Structure and Content

Developed a balanced survey with quantitative and qualitative questions covering timing, methods, and challenges in patient education. Included items to capture insights on both regional practices and barriers.



Implement Ethical and Logistical Considerations

Navigated the IRB Exempt process to ensure compliance with ethical standards for international research. Phased distributed plan to manage survey fatigue and ensure even regional representation



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Lessons Learned

- **Survey Design and Adaptation:** creation of survey questions, with an emphasis on clarity, relevance, and inclusivity is key. Adjustments were made to accommodate global diversity, including simplified language and universally understood terminology. **Spanish-language survey in progress with IRB.**
- **Data Collection & Analysis:** appropriate distribution to allow for statistical power across 5 diverse regions are needed (LATAM, Asia, Europe, Africa, and Middle-East). Anticipated N=400, evenly distributed across 5 regions, to ensure 80% power to find statistical significance across regions. Qualitative and quantitative methods utilized
- **Complexities of Global Survey Distribution:** Managing international survey distribution posed logistical challenges, time zone differences, variable internet access, and avoiding survey fatigue among participants. RCC’s operational insights on distribution were invaluable in addressing these challenges.

Conclusions

This project highlights a critical gap in patient education within RO, especially in LMICs. Effective patient education can improve treatment adherence, reduce anxiety, and empower patients to make informed decisions about their care, which is particularly important in resource-limited settings. By systematically assessing current patient education practices across diverse regions, this study provides foundational data that can inform the development of culturally and contextually appropriate education models. These insights contribute to global cancer care equity, as they aim to understand the disparities in culturally-relevant, accessible, and equitable patient education models across regions, regardless of their geographical location or healthcare resources.

Next steps include:

- 1) **Data analysis and reporting**
- 2) **Develop regional recommendations**
- 3) **Pilot a free-educational hub for patient education resources through RCC**
- 4) **Collaborate with local stakeholders**

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