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1-1-2023

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Recommended Citation

Al-Hallaq H, Covington E, Thind K, and Movsas B. Can Physics Consults Improve Patient-Centered Care in Radiation Oncology? *Int J Radiat Oncol Biol Phys* 2023; 115(1):244-246.

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EDITORIAL

Can Physics Consults Improve Patient-Centered Care in Radiation Oncology?



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Received Jun 3, 2022; Accepted for publication Jun 28, 2022

“Only a life lived for others is a life worthwhile” — Albert Einstein, PhD

Does providing patients with personalized technical information about their care delivered by a technical expert decrease anxiety and increase satisfaction? The authors of this novel study sought to answer these questions via a Phase 3 trial to evaluate the effect of a Physicist Direct Patient Care (PDPC) initiative in which medical physicists performed technical consults for patients receiving radiation therapy (RT). Patients on the PDPC arm received 2 consults with personalized technical information about their RT treatment, including infographics, and the control arm received standard of care. Before performing technical consults, the participating physicist completed dedicated training in patient communication.¹ Questionnaires were used to assess patients' anxiety, technical satisfaction, and overall satisfaction at 4 time points. Patients on the PDPC arm had a statistically significant decrease in anxiety at the time of the first RT treatment and reported a higher level of technical satisfaction at 3 of the time points. Higher overall satisfaction in the PDPC arm was statistically significant at the time of the first treatment and after the last treatment.

Although this study showed the potential of improving the patient experience by expanding the role of the medical physicist to provide direct patient communication, there are a few notable limitations. By having the control arm receive standard of care, rather than receive the same personalized technical information from a physician or another member

of the radiation oncology team, the affect of having the information provided specifically by a physicist cannot be determined. The role of the medical physicist has been steadily growing to include many facets, such as quality and safety engineers, artificial intelligence, and machine learning experts, software development, and more. With limited bandwidth and the relatively high cost of using physicist effort, lack of formal education in patient communication, and the significant time and resources that were used in this study, it is relevant to raise the question whether physicists are best suited for this effort. Other staff, such as patient navigators, have been involved to reduce anxiety in patients and to reduce health disparities.²

Another limitation is that patient anxiety results were averaged at each time point rather than comparing each patient to his or her individual baseline value. There is also limited demographic information provided on the patient cohort, with no racial or other social determinants of health elements used for analysis. The study notes that non-English speaking patients were not eligible for the study, which may have excluded some patients who may experience health disparities.³ Including this information could help surmise if the benefits shown were unique to this study's patient population or could be generalizable to a diverse patient population.

As mentioned in this article, radiation is sometimes perceived by the lay public with some level of confusion or even distrust. When coupled with the technical complexity of its delivery, it is easy to understand how initiating a course of RT could elevate anxiety in patients. The authors

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DOI of original article: <http://dx.doi.org/10.1016/j.ijrobp.2022.05.014>.

Disclosures: none.

should be applauded for developing a creative way to make radiation more accessible and understandable to patients while also addressing one of the tenets of patient-centered care: “alleviation of fear and anxiety.”⁴ Incorporating physicist-patient consults as part of the routine clinical workflow has previously been attempted by another institution⁵ with positive results for both patients and physicists. However, the prior study lacked the training and formal analysis presented by Atwood et al.¹ For example, the present clinical trial used a validated anxiety instrument, which enabled prospective quantification of the intervention on anxiety. It also allowed patients to meet team members that are typically behind the scenes (i.e., physicists) and to learn how RT is being personalized to their clinical situation and anatomy.

The trial by Atwood et al also incorporated the development of a patient communication skills program for physicists, which included simulations and role-playing.¹ Although physicists could learn communication skills by shadowing clinicians or therapists or in an ad hoc fashion, formalized training has been shown to significantly increase competency while also increasing the physicists’ confidence in communicating with patients.¹ This is an important step in the right direction, as physicists currently interact with patients from time to time. This typically occurs during specialized procedures, such as stereotactic RT and brachytherapy, and ensuring that they are trained to communicate technical information to patients is vital. Patient communication training is now being evaluated for formal inclusion in medical physics graduate training programs.⁶ Furthermore, in progression toward this goal, American Society for Radiation Oncology (ASTRO) and American Association of Physicists in Medicine (AAPM) have both expanded a physicist’s role to include direct patient communication. ASTRO recently updated the seminal work, “Safety is No Accident,” and added patient and family education to a physicist’s role in Table 2.1.⁷ Additionally, AAPM explicitly includes communication and education of patients in their practice guidelines.⁸

Although some formal training for all members of the radiation oncology team to communicate with patients effectively and compassionately is necessary, understanding technical information about radiation plans is not the only step in the RT process that can alleviate anxiety. From the patient’s perspective, anxiety should be evaluated within an overall framework of patient reported outcomes (PROs).⁹ Indeed, a recent randomized study compared the integration of real-time PROs versus routine care of patients with metastatic cancer.¹⁰ This randomized study showed that not only did real-time PROs significantly improve quality of life, but this approach also significantly improved survival. Real-time PROs should now be incorporated into the cancer clinic workflow as a “vital sign”⁹ so that, ultimately, care can appropriately be tailored to each patient’s situation. If a patient is anxious because of socioeconomic barriers or financial toxicities, this would necessitate a different solution than a technical consult. Stark and House noted that communication can be difficult with patients experiencing anxiety, although information and education are important components of

alleviating anxiety and should be tailored to the needs of the patient.¹¹ Studies have also shown that physician consults can reduce anxiety, but it often returns, indicating the need for alternate interventions.¹¹

As more interactive tools are incorporated into health care, support could be provided to patients throughout their RT journey using multiple formats. For example, patients could be given access to user-friendly materials such as a graphic narrative¹² or a video before RT simulation or treatment. Reminders regarding skin care could be sent to their mobile devices and they could be asked to report treatment-related symptoms in real-time.¹³ These tools could be used to collect data about anxiety and satisfaction, such that targeted interventions by the medical team could be tied to this self-reported information.

All too often, patients, families, and even the broader medical community may perceive radiation as a black box or procedural intervention due to its highly technical nature. This challenge has only been heightened by the use of more abbreviated RT regimens, which are cost-effective and convenient but shorten the time available for interactions with patients. However, the radiation oncology team are cancer providers, first and foremost, who provide expert and compassionate care that improves both the quantity and quality of life for cancer patients. The radiation oncology team exemplifies a group of remarkable individuals who meaningfully dedicate each and every day to live a “life . . . for others,” a “life worthwhile” indeed. Novel strategies, such as the proposed approach in this study and beyond, are important to ensure that our field remains patient-centered and to help make radiation oncology more understandable and valued by cancer patients, the lay public, and the medical community.

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