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# Preferences in Learning Styles and Modes of Information Delivery in Patients Receiving First-Day Education for Radiation Therapy

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#### **ABSTRACT**

**Purpose:** The primary objective of this study was to determine levels of patient satisfaction with current first-day teaching practices at a large, academic Canadian Radiation Therapy Department. A secondary objective was to investigate patient preferences in learning styles and modes of information delivery.

**Methods:** A literature review was conducted on learning styles, modes of information delivery, and patient education in radiation therapy. Based on this review, a quantitative survey was designed to evaluate patient preferences. Inclusion and exclusion criteria were generated to select participants. The study population included 21 patients with prostate cancer and 24 patients with breast cancer. The surveys were distributed for a 2-week period. The Sign Test and Kruskal-Wallis Test were used to analyze the data.

**Results:** The results revealed that patients significantly disagreed with the use of group sessions and strongly agreed with sit-down, one-on-one sessions and the use of supporting print material. Patients agreed with the use of a combination of teaching methods. Male participants more frequently strongly agreed with the use of videos to support educational practices. Significant results were found on preference for visual and kinesthetic learning. Overall, participants agreed that teaching sessions reduced anxiety.

**Conclusions:** Radiation therapists are encouraged to continue with current teaching practices since patients reported high levels of satisfaction. The results of this study indicate that a combination of teaching methods including visual aids and videos for male patients may be of benefit. Therefore, to further strengthen teaching sessions, the use of a multimedia tool can be investigated in the future.

#### **RÉSUMÉ**

**Objet :** Cette étude avait pour principal objet de déterminer le niveau de satisfaction des patients face aux pratiques actuelles d'enseignement du premier jour, dans un service universitaire important de radiothérapie au Canada. Un objectif secondaire consistait à étudier les préférences des patients en matière de styles d'apprentissage et de modes de diffusion de l'information.

**Méthodologie :** Une revue de la littérature a été effectuée sur les styles d'apprentissage, les modes de diffusion de l'information et l'éducation des patients en radiothérapie. À la lumière de cette revue, un sondage quantitatif a été conçu pour évaluer les préférences des patients. Des critères d'inclusion et d'exclusion ont été générés pour choisir les participants. La population étudiée comprenait 21 patients atteints du cancer de la prostate et 24 patientes, du cancer du sein. Les sondages ont été distribués pendant une période de deux semaines. Le test des signes et le test de Kruskal-Wallis ont été utilisés pour analyser les données.

Résultats: Les résultats ont révélé que les patients étaient nettement en désaccord avec l'utilisation de séances de groupe et tout à fait d'accord avec des rencontres personnelles et l'utilisation de documents d'appui imprimés. Les patients ont accepté l'utilisation d'une combinaison de méthodes d'enseignement. Les hommes ont plus souvent accepté nettement l'utilisation de vidéos pour appuyer les pratiques éducatives. Des résultats importants ont été remarqués relativement à la préférence de l'apprentissage visuel et kinesthésique. En général, les participants ont convenu que les séances d'enseignement réduisaient l'anxiété.

**Conclusions :** Les radiothérapeutes sont encouragés à poursuivre les pratiques d'enseignement actuelles, étant donné que les patients ont

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exprimé des niveaux de satisfaction élevés. Les résultats de cette étude indiquent qu'une combinaison de méthodes d'enseignement, dont des aides visuelles et des vidéos pour les hommes, peuvent être

Keywords: Patient teaching; anxiety; breast cancer; prostate cancer; gender trends

bénéfiques. Par conséquent, afin de renforcer davantage les séances d'enseignement, l'utilisation d'un outil multimédia peut être examinée dans l'avenir.

#### Introduction

Educating patients is one of the vitally important roles that radiation therapists perform in the clinical setting [1]. To achieve the highest quality of care, continuous patient feedback must be established to understand their information needs and teaching preferences [1, 2]. This involves an evaluation of both the mechanism of information delivery and the manner in which it is received and then processed by the learner. In terms of delivery, there are a variety of different methods or modes in which information can be presented. These include, but are not limited to: paper-based information pamphlets, educational videos and audiotapes, one-on-one teaching sessions, group teaching sessions, poster displays, and interactive websites [1, 2]. These options should be taken into consideration when obtaining feedback from patients to determine their preferences.

According to recent literature, the most popular method of education delivery among cancer patients is one-on-one communication with health care professionals [2, 3]. In addition, patients find print material helpful to reinforce the information presented in these sessions [2, 3]. This combination approach including both verbal and written information is deemed good clinical practice [2]. The content of the written material provided should be evidence-based, up-to-date, and specific to the patient's treatment [1, 4]. An alternative to sitdown, one-on-one sessions with therapists are group sessions with other patients. Group sessions have been shown to be a useful tool in delivering information to patients undergoing radiation therapy. It is also an economical use of health care resources, and patients will have the opportunity to support each other [2]. These positive effects were demonstrated in a study conducted by Lepore et al [5] whereby men with prostate cancer who participated in group education sessions reported higher measures of quality of life compared to the control group without group education. However, other studies have demonstrated that group sessions are not ranked as highly by cancer patients compared to one-on-one sessions [2, 3].

Research has shown that patients value audiovisual modes of information delivery [1, 6]. Videos can be especially helpful for explaining the complex processes involved in radiation therapy [1, 7]. In particular, research conducted on head and neck cancer patients receiving radiation therapy demonstrated higher levels of satisfaction with patients who had seen a specially designed video compared to those that had not [7]. The Internet is also a commonly used education tool as validated by Basch et al [8], who found that 44% of patients used the Internet to look up cancer-related information. Telephone resources were used less often, with 22% of patients reporting use of resources

such as the National Cancer Institute hotline and the American Cancer Society hotline [8]. Nevertheless, with improving technology and increased use of cellular devices, there may be more opportunities for the use of this type of patient education in the future [8]. In addition to the format of the information, the timing and frequency of information delivery should be taken into consideration. A study conducted by Sutherland et al examining the timing of breast cancer patient education found that most of the study participants preferred to have patient teaching on the day of their computed tomography simulation appointment [9].

The manner in which information is received and processed depends on the individual's learning style. Matching teaching strategies to individual learning styles can increase learner engagement, improve information recall, and allow for a more effective patient education session [10, 11]. There are a number of theories that exist surrounding the type of learners and how people learn. However, there is no single widely accepted method for evaluating learning styles [12]. This study focused mainly on Kanar's model of learning styles, which pertain to human senses including auditory, kinesthetic, and visual learning [13]. Auditory learners tend to enjoy verbal communication and do not work well with written instructions. These individuals learn best through hearing an explanation [13, 14]. It is common for them to solve problems by "talking them out," and they can repeat information back to their educators with ease [13]. Visual learners learn through seeing images and tend to have difficulty with verbal instructions. The best learning outcomes for this type of learner are achieved by reading and watching, as they must see to understand [13, 14]. Typically, kinesthetic learners prefer using the tactile sense. Hands-on activities are the best way to cater to kinesthetic learners [13]. For instance, the following strategies can be used: encourage note taking; take breaks that allow physical movement; provide demonstrations; and/or use models to explain ideas [13, 14]. This differs from reflective learners who prefer to imagine processes rather than actively participate in hands-on activities [11].

The chosen mode of information delivery at the study centre is one-on-one teaching sessions, with supporting print material given just before the delivery of the first treatment. In an effort to improve the patient experience, an evaluation of this process was set in motion. As the literature demonstrates, in order for a productive learning session to take place, both the teaching method and the preference of the learner should be taken into account. Therefore, the present study focused on fulfilling two main objectives: (1) to evaluate patient satisfaction with current first-day patient education policies and procedures at

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