

HIGH SYMPTOM BURDEN IN PATIENTS RECEIVING RADIOTHERAPY AND FACTORS ASSOCIATED WITH BEING OFFERED AN INTERVENTION



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Background

- Symptom management is an important part of a patient's cancer treatment (1).
- Patient reported outcome measure (PROMs) are used to characterize patient's symptom burden (2, 3).
- Symptoms vary in severity, with tools developed to characterize symptom burden, including the Edmonton Symptom Assessment System (ESAS) and Canadian Problems Checklist (CPC) (4).
- Better understanding of symptom management and intervention practices can improve the treatment experience for patients with high symptom burden.

Purpose

- Identify factors that influenced whether patients with high symptom complexity scores were offered an intervention for the main symptom.**

Methods

- A retrospective chart audit was performed of adult cancer patients (≥ 18 yrs) with at least one radiotherapy appointment at a tertiary cancer centre.
- Inclusion criteria were patients completing a PROM and deemed to have a high symptom complexity score.
- Symptom complexity scores were assigned based on self-reported ESAS and CPC symptoms at a single visit.
- High symptom complexity scores were defined as:
 - Any symptom scored 10 (most severe)
 - Pain scored 7-9
 - 3-5 symptoms cored between 7-9
 - ≥ 6 symptoms scored between 4-6
- The main symptom of interest was selected as either the ESAS symptom scored highest or identified by the patient as the highest priority symptom.
- A data form was created which included demographic data (age, gender) and cancer characteristics (cancer type, stage, treatment intent, treatment completion and appointment types).
- The data was summarized using descriptive statistics. Comparisons of management/interventions was analyzed across tumour groups and appointment types.
- A multivariable regression model was used for the primary outcome of whether an intervention was offered for the main symptom. A significance level of 0.05 was used. Covariates included: age, gender, tumour group, appointment type, symptoms, symptom severity score and treatment intent.

Results

- 200 patients were included in the study. The average age of the cohort was 61.7 years and 53.0% were female.
- Pain was the most frequently reported main symptom (43.0%), followed by tiredness (12.5%), and anxiety (11.0%).
- The top 3 symptoms varied across tumour sites (Table 1).
- 74.5% of all patients met multiple criteria for high symptom complexity scoring (Table 1).
- A total of 150 (75.0%) of the patients were offered an intervention for the main symptom.
- Multivariable regression model (Figure 1) showed the factors associated with being offered an intervention included:
 - Symptom score of 9 (OR=9.56, 95% CI 1.64-62.84), and symptom score of 10 (OR=7.90, 95% CI 1.69-38.18) when compared to symptom score of ≤ 6 .
 - Palliative intent radiation treatment compared to curative intent (OR=3.87, 96% CI 1.46-11.06).
 - First review appointment compared to consultation (OR=1.93, 95% CI 0.68-5.82).
 - Symptoms associated with being offered an intervention included: pain (OR=22.57, 95% CI 6.47-91.14), nausea (OR=15.69, 95% CI 1.51-412.4), shortness of breath (OR=7.97, 95% CI 1.20-63.74), and anxiety (OR=6.69, 95% CI 1.58-31.64) when compared to tiredness.
- The most common intervention offered for pain was medication (80.5%), shown in Figure 2.
- Most common type of referral overall was to psychosocial (41.0%), followed by palliative care (27.9%).

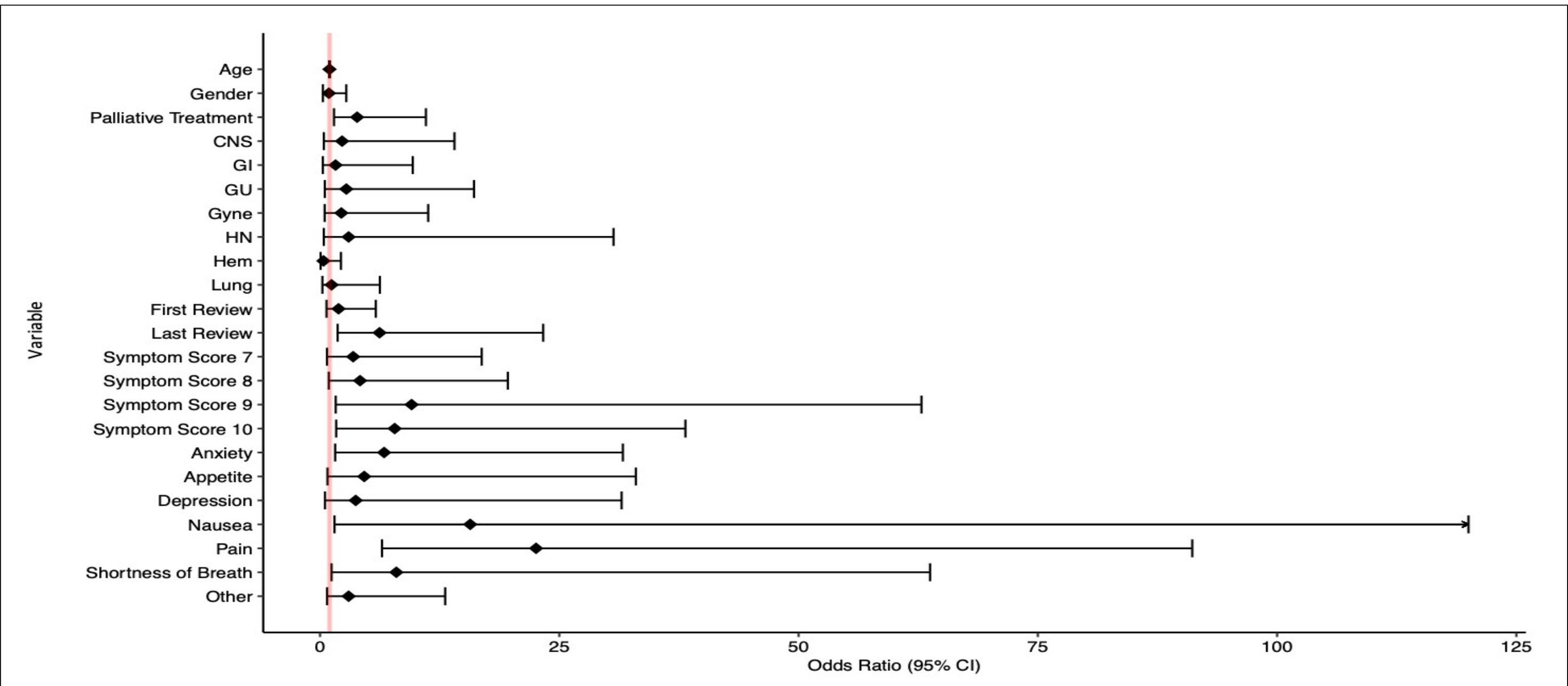


Figure 1. Forest plot of OR and CI (95%) of the multivariable regression model for those who are more likely to be offered an intervention.

Table 1. Proportion of patients who met multiple criteria for high symptom complexity and the average number of high intensity symptoms per tumour group and overall. The top 3 symptoms with proportions per tumour group. HSC = high symptom complexity.

Tumour Group	Number of Patients Who Met Multiple Criteria for HSC (Group 5)	Average Number of High Intensity Symptoms	Top 3 Symptoms
Breast (n=30)	22 (73.3%)	2.9	Pain (36.7%) Tiredness (16.7%) Depression (16.7%)
CNS (n=14)	9 (64.3%)	2.9	Anxiety (28.6%) Tiredness (28.6%) Pain (21.4%)
GI (n=30)	19 (63.3%)	3.3	Pain (53.3%) Lack of Appetite (20.0%) Other (10.0%) Tiredness (10.0%)
GU (n=30)	21 (70.0%)	2.5	Pain (63.3%) Tiredness (10.0%) Depression (6.7%) Other (6.7%)
Gyne (n=24)	20 (83.3%)	3.1	Pain (33.3%) Anxiety (25.0%) Nausea (12.5%)
Hem (n=14)	10 (71.4%)	3.7	Pain (35.7%) Tiredness (28.6%) Nausea (21.4%)
HN (n=28)	23 (82.1%)	3.7	Pain (42.9%) Lack of Appetite (32.1%) Other (10.7%)
Lung (n=30)	25 (83.3%)	3.9	Pain (40.0%) Shortness of Breath (23.3%) Anxiety (13.3%)
Overall (n=200)	149 (74.5%)	3.3	Pain (43.0%) Tiredness (12.5%) Anxiety (11.0%)

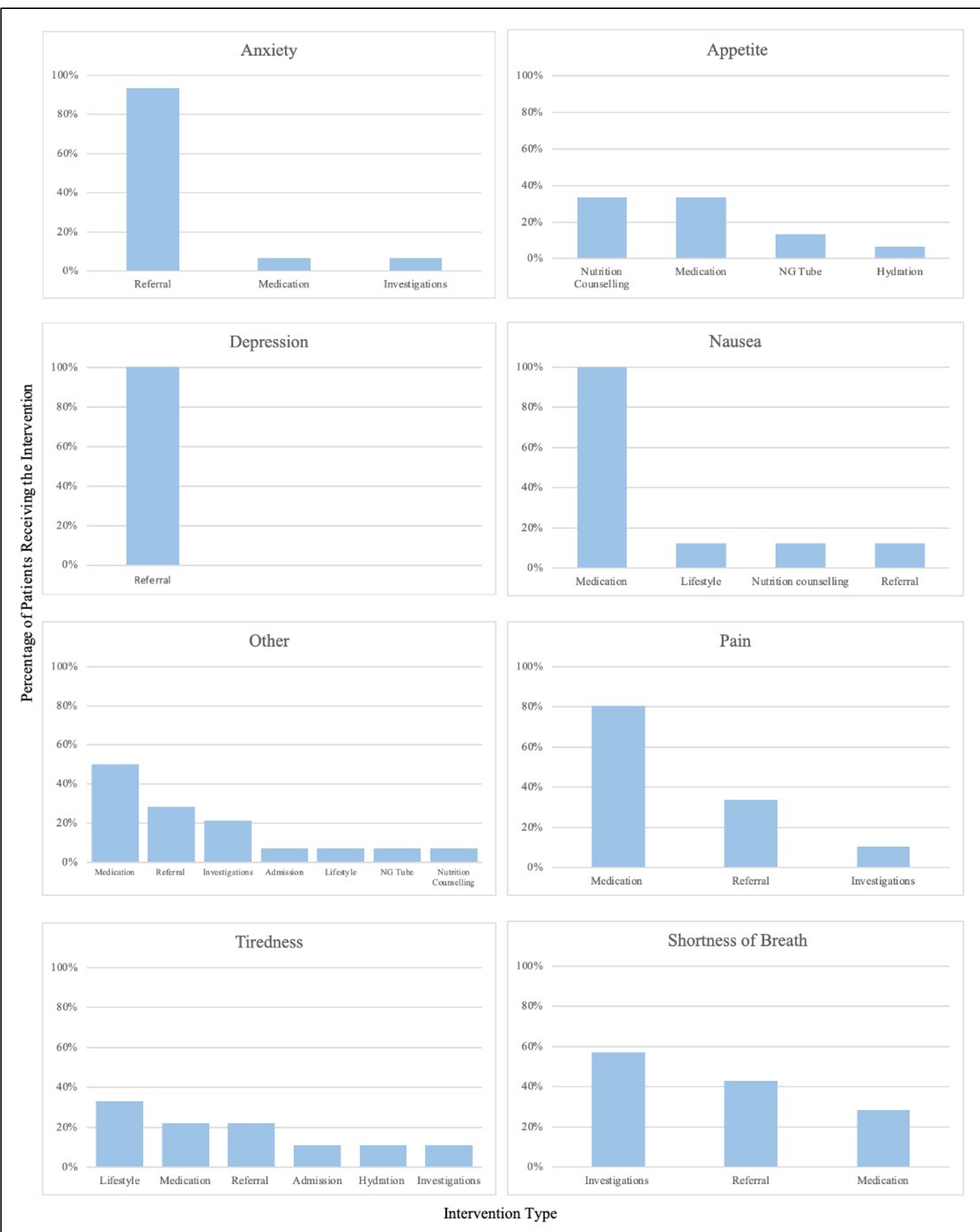


Figure 2. Types of interventions offered by symptom.

Conclusions

- Patients undergoing radiotherapy for cancer are more likely to be offered an intervention if they are experiencing symptoms of pain, nausea, shortness of breath or anxiety.
- Patients reported pain most frequently as the most important high intensity symptom.
- This knowledge will better guide clinical care and quality improvement (QI) in practices within the oncology department.

References

- Wolf J a, Niederhauser V, Marshburn D, Lavela SL. Defining patient experience. *Patient Exp J*. 2014;1(1):7-19. doi:10.35680/2372-0247.1004.
- Chen J, Ou L, Hollis SJ. A systematic review of the impact of routine collection of patient reported outcome measures on patients, providers and health organisations in an oncologic setting. *BMC Health Serv Res*. 2013 Jun 11;13:211. doi: 10.1186/1472-6963-13-211.
- Watson L, Qi S, Delure A, Photitai E, Chmielewski L, Smith L (2020) Validating a Patient-Reported Outcomes–Derived Algorithm for Classifying Symptom Complexity Levels Among Patients With Cancer. *J Natl Compr Cancer Netw* 18:1518–1525. doi: 10.6004/jncn.2020.7586.
- Velikova G, Booth L, Smith AB, Brown PM, Lynch P, Brown JM, Selby PJ. Measuring quality of life in routine oncology practice improves communication and patient well-being: a randomized controlled trial. *J Clin Oncol*. 2004 Feb 15;22(4):714–24. doi: 10.1200/JCO.2004.06.078.