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Occupational burnout among radiation therapists in Australia: Findings from a mixed methods study

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ABSTRACT

Introduction: Evidence demonstrates that health care professionals in the palliative care context are more burned out than other health professionals. The aims of this study were to examine: (1) occupational burnout levels among radiation therapists in Australia, (2) association between demographic factors on burnout and (3) radiation therapists' perceptions of burnout.

Methods: A cross-sectional online survey including the Maslach Burnout Inventory was administered to Radiation Therapists in Australia. Data were analysed using SPSS Ver 20 and open ended comments were analysed thematically using Nvivo 10.

Results: A total of 200 radiation therapists participated in the survey. RTs had a high mean (\pm SD) burnout score for emotional exhaustion (38.5 ± 8.2), depersonalisation (17.5 ± 4.7) and personal achievement (30.53 ± 4.3) compared to RTs and health workers in other studies. High levels of emotional exhaustion, depersonalisation and low levels of personal achievement were present in 93% (186/200), 87% (174/200) and 61% (122/200) of participants respectively. RTs identified high workload and staff shortages, interpersonal conflict and technology as key sources of stress in the RT work environment.

Conclusion: Australian RTs' level of burnout on all three stages of burnout exceed previously reported burnout levels for similar cohorts both locally and internationally. It is important that future interventions aimed at minimising or preventing stressors are identified and implemented in the radiation therapy work environment.

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Introduction

The World Health Organisation reports that the number of new cancer cases is predicted to increase by around 70% over the next two decades.¹ With the ageing population and the rising incidence of cancer both globally and in Australia, Radiation therapists (RTs) and other health professionals alike are increasingly being expected to manage high caseloads with fewer resources.^{1,2} Whilst RTs play a critical role in delivering targeted radiation therapy treatment to patients with cancer, they are also valued for providing these patients with important information, comfort, support and reassurance on a regular basis.³ However, regular interactions with cancer patients' grief and trauma can be emotionally taxing.⁴ Other

sources of stress for RTs include administration difficulties, staffing issues, rapid advancements in new technology and increasing treatment and planning times for the patient.^{2,8}

Occupational burnout poses a substantial economic and social burden as it is associated with absenteeism and occupational injury.⁴ According to Maslach and Jackson, burnout is characterised by increased levels of emotional exhaustion and depersonalisation and low levels of personal achievement. The three stages of burnout have been well described in the literature and in the context of radiation therapy can have negative implications for staff turnover and retention, the individual affected, the patient in their care and the health provider.³

Only a handful of studies have examined occupational burnout among RTs to date using the standardised and validated Maslach Burnout Inventory (MBI).⁵ The MBI measures burnout on three subscales: emotional exhaustion, depersonalisation and personal achievement.^{3–9} One study in the United States (US) found that RTs

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had significantly higher levels of emotional exhaustion and depersonalisation compared to MBI norms.⁵ Similar results were observed in a United Kingdom (UK) study among 87 RTs.⁸ In a study among 111 RTs in New Zealand, RTs had high burnout for all three stages of burnout; emotional exhaustion, depersonalisation and personal achievement⁷ while a study in Canada reported that the majority had high burnout with regard to personal accomplishment and depersonalisation.⁴ There is little data in the Australian setting.^{10–12} One study that surveyed 113 RTs working in a Melbourne cancer centre found that only 19% of RTs experienced burnout.³ In another Queensland study RTs were found to have higher mean MBI scores for stressors and coping compared to oncology nurses.¹¹ However, these studies only examined a small sample of RTs working at one to two clinical centres. Another qualitative study performed among 16 RTs at two hospitals in Brisbane found administration difficulties, patient issues, equipment and staffing issues were major work related stressors and non-work stressors included relationship issues, family health and financial problems.¹² Given the evidence to date, it is critical that more information is gained to reduce staff turnover and increase job satisfaction in the profession.^{13–17}

The aims of this study were to examine:

- 1) The prevalence of burnout among RTs across Australia
- 2) Australian RTs' perceptions of the causes of burnout in their workforce and;
- 3) Whether demographic variables (age, gender, number of years' experience in the profession, education, marital status, dependents) and work related factors such as number of hours worked overtime and work status (full time/part time) had any influence on the three stages of burnout, namely emotional exhaustion, depersonalisation and personal achievement.

Methods

All RTs in Australia who were members of the Australian Society of Medical Imaging and Radiation Therapy (ASMIRT) (N = 903) were invited to participate anonymously in an online survey on occupational burnout. The survey was developed using Survey Monkey (<http://surveymonkey.com>). A description of the study and web-link to the survey were advertised on the ASMIRT website (<http://www.asmirt.org/>). Study consent was implied upon completion of the survey. No incentive was offered for survey participation.

Design and instrumentation

Burnout was measured using the MBI.¹⁸ The MBI is a 22 question instrument that measures three stages of burnout: 1) emotional exhaustion (nine questions); 2) depersonalisation (five questions) and; 3) personal accomplishment (eight questions). The MBI has been used extensively in burnout research and has high internal validity and reliability.^{3–9} For each question, participants were required to rate their experiences on a 7 point Likert scale ranging from 1 (never) to 7 (everyday). Scores for questions related to each stage of burnout were totalled to obtain a final MBI score. Occupational burnout using the MBI is characterised by high scores for emotional exhaustion and depersonalisation (≥ 27 and ≥ 13 respectively) and low personal accomplishment scores (≤ 31). MBI scores for burnout were compared to national norms in the US for doctors and nurses (n = 11,067).⁶

The latter part of the survey consisted of demographic questions. These variables included gender, number of years' (y) experience in the profession (0–5 y, 6–10 y, > 10 y), highest qualification achieved (Bachelor degree or Graduate Diploma and higher), marital status

(married/de-facto or single), dependents (no dependents or with dependents), work commitments (full time or part time/casual) and number of hours (h) overtime worked per week (p/w) (0–5 h, 6–10 h or >10 h). The survey concluded with an open-ended question to solicit general comments around occupational burnout.

Approval for this study was obtained from the Monash University Human Research Ethics Committee, Australia.

Data analysis

All data were analysed using SPSS Ver 20 (IBM, Chicago, IL, USA). Descriptive analyses were conducted to provide an overview of the participant characteristics and to compare participants' emotional exhaustion, depersonalisation and personal accomplishment scores to national MBI norms as evaluated for a cohort of doctors and nurses in the United States.⁶ Independent samples t-test and one way between-groups ANOVAs with Tukey's post hoc analysis were performed to examine the relationship between given demographic characteristics and the three dimensions of burnout (emotional exhaustion, depersonalisation and personal accomplishment). Significance was assumed at $p < 0.05$.

Responses to the open ended question were imported into NVivo (Version 10) and thematically analysed using inductive and deductive techniques.^{19,20} This involved reading the qualitative comments, generating initial codes, searching for themes and defining and naming the themes.²⁰ Two of the researchers independently analysed a sub-set of the open-ended responses and generated initial codes. These codes were then cross-checked by the same two researchers and any disparities were resolved by consensus. The remaining comments were then coded using the existing code frame and new codes were added as appropriate. After this process, codes were categorised according to various topics and thematically grouped. Themes were identified from the data as well as their relationship to the literature and therefore inductive and deductive methods were used.²¹

Results

Participant characteristics

At the time of the survey, 903 RTs were members of the ASMIRT. Of those, 200 RTs completed the questionnaire giving a response rate of 22%. The majority of RTs were female (169/200, 85%), had a bachelor's degree (140/195, 72%), worked full time (159/198, 80%), had greater than 10 y experience in the profession (111/200, 56%) and worked at least 0–5 h overtime p/w (174/197, 88%) (Table 1).

Of the 200 who completed the survey, 77 (40%) responded to the open ended question and provided in-depth perspectives on stress in the radiation therapy work environment (stress is a precursor to burnout).³

Prevalence of burnout

Ninety three percent of respondents (186/200) had high emotional exhaustion, 87% (174/200) had high depersonalisation, while 61% (122/200) had low personal accomplishment (Table 2). Respondents presented with higher mean burnout scores for all three stages of burnout (emotional exhaustion (MBI normed score ≥ 27), depersonalisation (MBI normed score ≥ 13) and personal accomplishment (MBI normed score ≤ 31)) compared to MBI norms (Table 2) and other studies (Table 3) that used MBI to examine RTs' occupational burnout. Results for our study demonstrates that Australian RTs experience higher occupational burnout than RTs in other countries. Burnout was higher across all three subscales (Table 3).

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