

IDENTIFYING AND ELIMINATING CASES OF
BURNOUT IN RADIATION THERAPISTS

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Abstract

Using a linear accelerator, radiation therapists are responsible for the accurate and precise administration of ionizing radiation as a treatment for cancer patients. Every patient's treatment is unique to their anatomy and extent of disease, with the ultimate goal being to ensure the destruction of cancer cells while sparing normal healthy tissue. It can be imagined that because the radiation oncologist must write a prescription for each patient, the dosage of radiation that the patient receives could be compared to a 'drug' and the radiation therapist akin to a pharmacist. Both a pharmacist and a radiation therapist have the final eye that the therapeutic plan has been entered correctly and is accurate to the individual patient. The stakes of such responsibility are high; as just like many drugs, once administered, radiation cannot be reversed.

The purpose of this paper is to identify a few of the most prevalent situations in which radiation therapists may experience burnout and to suggest possible solutions to anticipate and prevent the harm that burnout may cause. The results of medical journals, textbooks, peer-reviewed articles, and peer-reviewed research studies on the topic have been reviewed. Burnout of radiation therapists puts patients and other team members in harm's. Employers, employees, and patients will all greatly benefit from understanding burnout's relation to radiation therapy in order to prevent it.

Introduction

Burnout negatively effects radiation therapists, leaving patients, employees, and employers at risk. If gone unchecked burnout may lead not only to harm the therapist experiencing it but also to complacency of the therapist in the field. This combination is a recipe for errors in treatment. It is imperative that causes of burnout may be identified so

that programs or steps to prevent burnout and its subsequent negative effects may be put in place. It is equally important to be able to identify symptoms of burnout already present in a therapist so that the individual can be made aware and begin a process of recovery. A background of different studies identifying the frequency at which burnout occurs and the different stressors that may contribute to it is provided. After the causes and symptoms are identified, ways to anticipate, prevent and recover from burnout may then be discussed.

Review of Literature

Burnout.

Burnout is a syndrome or state of exhaustion in both the physical and emotional aspects and occurs after being chronically exposed to consistent high levels of stress,¹ where stress is defined according to a cross-sectional study of radiation therapists and oncology nurses by Poulson et al. (2014) as a person's own assessment that there is either or a combination of threat, harm and/ or challenge where the resources of the individual are not enough to compensate for what the situation demands and harm or loss is predicted.² Probst et al. (2012) gives us insight as to why burnout may be so frequent in radiation therapists; it is known to happen often with members in any profession that primary deals with caring for people and have "high levels of contact with members of the public."³

Because burnout and stress are subjective to the individual experiencing them, most of the data by studies described here are derived through questionnaires surveying the various groups being studied. Even so, in order to be able to scientifically compare any study relative to another, there must be a set standard in place. For burnout

specifically, that standard is the Maslach Burnout Inventory-Human Services Survey (MBI-HSS). It is a rating scale with 22 items split up into the three different categories of experiences that people going through burnout are subjected to. Those three categories, also referred to as the three dimensions of burnout¹ are: Emotional Exhaustion (9 items of the scale), Depersonalization (5 items of the scale), and Personal Accomplishment (8 items of the scale). Burnout is considered a progressive syndrome⁴ with the first experiences that an individual might face falling under the category of Emotional Exhaustion. When someone is emotionally exhausted this means that the demands of other people that they are responsible for cause them to be physically and emotionally overwhelmed,^{1,3,5} psychologically stretched beyond their limit.³ They are beyond the capacity to give any more of themselves into their work.⁴ If the stress causing the burnout continues, Depersonalization will affect the individual. This dimension of burnout is expressed by attitudes of cynicism, detachment, and dehumanization.^{1,4,5} Although an inappropriate one, cynicism is considered a protective measure against experiencing disappointment because the person is preventing themselves from investing emotionally in the people that they are supposed to be caring for.^{3,5,6} Someone who depersonalizes their role, numbs themselves to caring about treatment and care of their patients.¹ Even worse, the therapist or worker going through the depersonalization stage of burnout might not merely be apathetic but pessimistic towards those under their scope of responsibility, causing the therapist to be ineffective in their work.^{3,6} The final dimension of burnout is Personal Accomplishment, this is the only category of the MBI scale where a higher score is an indication of lower burnout incidence.¹ A decreased sense of personal accomplishment occurs when the individual negatively assesses their own achievements

or perceived usefulness; they may feel as if they are not adequate, and this sense of personal failure is strongly tied to their self-worth as a professional.^{1,5} This dimension of burnout has severe implications due to its tie to complacency, and a potential failure to see the work being done as having value or meaning.⁴

Contributing Factors to Burnout

In a study by Diggins (2014) a vulnerability to burnout was identified specifically in the role of radiation therapists due to a major component of their workplace demands to include providing patients with “emotion focused” care. It was clear from the study that a successful accomplishment of providing this type of care to a patient was an essential contributor to the radiation therapist’s level of job satisfaction. If, however, the individual did not have the resources, whether personal or from their employer, to cope with the emotional demands of the job and they were unable to handle providing emotion focused care that cancer patients need, they would be left open to burnout.¹ Diggins’s (2014) Australian study included 113 anonymous questionnaires from radiation therapists. The goal was to examine sources leading to job stress and job satisfaction of those radiation therapists within their sample of 113 and compare the frequency of burnout with data from the large Ackroyd and Adams study on burnout in Radiation Therapists in 2000. Table 1 displays different reported sources of job stress outlined on the questionnaire.¹ Diggins’s second goal was to relate barriers that inhibit the delivery of emotional care that is so essential to being a radiation therapist to the factors resulting in burnout, job stress, and satisfaction levels.¹

The questionnaire measured the frequency of contact with patients who were likely to require emotional care. This included those who had notable anxiety, worry,

fear, frustration or anger, depression, withdrawal, distress, or were in tears.¹ The therapists who participated were asked to rate their confidence levels when talking with these types of patients about the emotional concerns that they had. They were given a list of factors that may contribute to either job stress or job satisfaction and asked to rate them.¹

Barriers to providing the essential type of emotional care would include lack of training or confidence in the area, restrictions of the radiation therapist's time, and necessity to focus on technical aspects, issues, and tasks. The distressed or anxious patient can understandably be found commonly when that person is going through cancer and cancer treatments; and it is part of the therapist's job to build a relationship with the patient that supports their emotional wellbeing. When the aforementioned barriers consistently get in the way of this part of the job, if the radiation therapist doesn't have the skills to handle or appropriately deal with patients in emotional pain, distress, or suffering; the therapist is left vulnerable to burnout.¹

A similarly oriented New Zealand study by Jasperse et al. was published in early 2014. Their study was broader than Dikken et al. in that its goal was to find levels of burnout, job stress and satisfaction in the various individuals of the radiation oncology staff including radiation oncologists, therapists, nurses, and physicists among 8 radiation oncology departments of New Zealand.⁵ Out of the 171 eligible returned responses 23 were oncologists, 111 therapists, 22 nurses, and 15 physicists. The survey results indicated that most all of those working in a radiation oncology department scored high burnout in all three dimensions of the MBI scale, and yet job satisfaction was still moderately high. The indicators of burnout that the questionnaire identified included

first a hefty workload on a short timeframe. The effects of these indicators towards burnout increased as frequency of patient contact increased.⁵ Personal stressors for the individual included at home life and relationships. Being single was particularly cited as a risk factor for burnout. Organizational stressors included the workload, lack of recognition or opportunities to develop, and a malfunctioning team. Patient oriented stressors included pediatric patients, treating palliative patients, or if the individual must treat and identify with patients the same age as themselves.⁵

A functional team is as essential to an individual radiation therapist's job satisfaction as it is to ensure a culture of quality care provided to the patient. In a literature review by Johnson and Trad (2014) the effects of bullying in the workplace on radiation therapists' personal health is described.⁷ Such an environment in which the employees cannot trust each other acts as a catalyst of stress which isolates radiation therapists from the rest of the team leaving them with the full burden of an emotionally taxing job with the additional pressures from peers. This environment fosters the development of personal health issues that leave the therapist open to burnout, forgetfulness, and errors.⁷ These are not limited to difficulty sleeping, fatigue, depression, anxiety and errors that are possibly correlated with the negative health effects that the radiation therapist is experiencing.⁷ In addition to all of this, a dysfunctional environment in which an employee doesn't feel safe enough to report issues can only facilitate the same mistakes to continue or repeat, harming the professional and the patient.^{7,8}

A comparative study of radiation therapists and radiation oncology nurses was conducted by Poulsen et al. (2014). Knowing that the oncology department is one that

fosters a particular job stress, Poulsen's study compared the prevalence and level of stress, including home and work stress, experienced by members of these two specific fields within the department.² They found that overall, radiation therapists experienced higher levels of stress than their nurse counterparts. Both nurses and radiation therapists alike cited a "heavy workload" as the stress factor which effected them most severely.² A questionnaire listed various others factors as well which contribute to burnout for the participants to choose from. Their questions were developed from the findings of a previous publication by Mazur et al. (2012),⁹ who grouped the typical stressors that one might find in an oncology department.

The six categories of stressors are as follows:

- "Technical stressors such as computer software or hardware malfunctions;
- Environmental stressors such as noise;
- Teamwork stressors caused by delays in information exchange such as waiting for someone to sign off on a plan;
- Time stressors from the need to meet deadlines;
- Patient stressors caused from meeting patient needs;
- Interruption stressors caused by physical interruption such as pages and phone calls."^{2,9}

Poulsen et al. attempted to find and yet made no statistical connection between burnout or any of the typical demographic factors of the participants, including age, work hours, and experience. The most frequent contributing factors to burnout cited by radiation therapists included the management of atypical patient treatments, picking up

the responsibilities of other team members, and staff conflicts over issues of seniority. Stress factors from home were not as prevalent an issue as reported in the survey results by the radiation therapist participants but included things like the difficulties of attempting to maintain an appropriate work life to home life balance. Contributing factors to burnout in which the radiation therapists differed from the oncology nurses was included an obligation to keep to a very strict patient schedule, and being responsible for delivering an exact treatment with zero tolerance for mistakes.²

A shortage of radiation therapists in the UK had become a prevalent issue and it appeared that the way managers of oncology departments were handling the problem, by extending hours that current radiation therapists worked and by tightening the schedule on each linear accelerator to expand its capacity for patients ended up adding to the growing pile of factors that contribute to burnout in radiation therapists.³ A study by Probst et al. (2012) examined outlooks of individuals employed in the UK radiation therapy vocation, and determine some sources and possible solutions to this rampant case of burnout that they were evidently having. Utilizing an anonymous survey method, the researchers used the Maslach Burnout Inventory (MBI) scale, with standardized measures including “job satisfaction, professional plateau, intentions to leave, job characteristic and demographic data” of their radiation therapist participants. A major finding of the Probst study was that a large amount of complaints reported by radiation therapists were regarding a lack of desired or helpful leadership qualities in management.³

Figures 1 and 2 display Probst’s survey results from each of the six different radiation therapy departments. The horizontal line splitting each figure indicates the MBI

scores typical in the UK, the number in each box represents how many respondents were from each department, and the range of responses for each department are shown by their height in the figure. In Figure 1, departments indicating Emotional Exhaustion are displayed above the MBI norm. These same radiation therapy departments also indicated higher than average scores in the dimension of Personal Accomplishment as shown in Figure 2. These visual representations together serve as an examples of how radiation therapists' career experiences can contribute to burnout as well as job satisfaction³ supposing that this issue may not necessarily be so straightforward.

Although specifically talking about the factors that lead to burnout and burnout consequences experienced by oncologists, a review by Shanafelt et al.⁴ is an excellent resource describing stress factors that are unique to oncology and cancer patient care. Many of the contributing factors are easily applied to the radiation therapy field. For instance, the administration of treatments that are toxic to the patient and must be delivered in a very specific manner to be beneficial⁴ is experienced by both groups. Treating patients for palliation with the knowledge that the therapy will not cure them of their disease is also a stressor, as is administering therapies with excessively disagreeable side effects.⁴

Consequences of Burnout

As repeatedly stated, burnout is due to unrelenting presence of stress, where the individual does not have the resources to keep up with or cope with the demands. The affected employee becomes cynical, exhausted, and overall less effective at their job.⁶

High levels of stress are often unavoidable in a radiation therapy department. An unsupportive working environment can determine whether a radiation therapist and the quality of care that they give their patients are negatively affected.^{3,7} If such is the case, burnout will harm the overall organization as well.⁵ Burnout is linked to psychological distress, low morale,^{3,5} job dissatisfaction resulting in turnover, or the intention to leave the position.⁵ The first dimension of the manifestation of burnout is emotional exhaustion, which according to Probst is positively related to the radiation therapist's dissatisfaction with their job and their subsequent development of an intention to leave.³

When the dissatisfied radiation therapist elects to stay with the organization, burnout may lead to the development of “compassion fatigue.” When it becomes too emotionally exhausting to continue to be empathetic, one may absorb the anxiety and stress of the people that the therapist cares for.¹⁰ According to Dempsey (2014), radiation therapists are an “at risk population” for compassion fatigue.¹⁰ It is not difficult to see how ‘compassion fatigue’ presents itself in the symptom of burnout known as cynicism, or an indifferent attitude toward work or others.⁶

Emotional reaction to burnout may include being depressed, paranoid, developing a negative sense of self-worth, feelings of helplessness or powerlessness, or becoming detached or distant from work. The documented behavior and signs include a potential dependency on drugs or alcohol, more frequent instances of absence from work without explanation, or altered patterns of becoming unreliable such as consistently being late or leaving early.³

Poulsen's study points out that anxiety and depression in radiation therapists positively correlate with instances of burnout.² A radiation therapist experiencing any

mental health issue cannot be considered reliable. Mental wellbeing is important to ensure patient safety and for employers to retain their staff.²

Burnout does not only effect personal consequences but professional ones as well. Shanafelt (2015) relates depersonalization in oncologists to the decline in their ability or desire to empathize with their patients⁵ and provide them with support of their emotional needs.¹ Even more dire is the burnout consequence of a documented strong correlation between physician burnout and medical errors performed.⁵ The radiation therapist position with its requirements for total precision and accuracy has the potential to endanger patients with errors in treatment administration due to a complacent burnt out employee.

Preventing or Recovering from Burnout

The goal of recovery from burnout for a radiation therapist is to return to being fully engaged in their work. Work engagement involves an employee's positive attitude and state of mind towards their work. It is characterized by energetic mental resilience and effort, concentration and immersion in work, and includes feelings of significance and pride in their work, all contributing to a higher sense of personal accomplishment.^{1,6}

Diggins's study (2015) on the association between emotion-focused care of radiation therapy and vulnerability of the therapists to experiencing burnout described a lack of confidence and training in assisting cancer patients with psychosocial issues as a major factor leading to feelings of inadequacy associated with low personal accomplishment. Emotion focused patient care is evidently very rewarding when radiation therapists feel confident in their patient communication ability. If not they feel

helpless making this a stressor instead of a reward. A logical step in preventing this aspect of burnout would be to incorporate employee training so as that they might gain competence and subsequent feelings of self-worth. Diggins's article, also described an optional workshop that was repeatedly offered to employees of the cancer center.¹ Radiation therapists who attended the workshop actually scored worse on the standardized MBI scale in the emotional exhaustion category, completely opposite of the expected results. Possibilities exist that the information and knowledge gained from attending and participating in the workshop increased pressure on staff to expend even more energy to be supportive and helpful, so emotionally exhausted employees may become even more emotionally exhausted. In contrast, radiation therapists not in the workshop may have built up emotional defenses against patient impact on their usually resilient attitude. A final suggestion on the apparent failure of this particular workshop might be to the potential rise to unrealistic expectations of changes that would come of the experience, and if those expected changes were not realized, seeing failed efforts may have caused therapists to become even more susceptible to exhaustion and burnout.¹

Effective communication between therapists and supervisors is essential to help diminish some of the stressors that lead to burnout. Eatmon (2012) targets poor communication as a common factor contributing to mistakes.⁸ A radiation therapy supervisor evaluating workload by how often one runs into the room may incorrectly conclude that less employees are required in a more modern therapy unit where a significant work is done from the console outside of the vault.⁸ Although not always practical when addressing concerns to management, the contributing factor of a lack of

time to effectively communicate with patients could be helped by spacing out and giving more time to each appointment for the explicit purpose of helping emotionally distraught cancer patient, and / or increasing staffing levels for the same reason.⁸

Strategies to improve radiation therapist support, skill level, and confidence may include an increase in mentorships, supportive management, and other approaches for skills training.¹ Since burnout is a result of consistent unrelenting stress, strategies to cope with or reduce the stress factors may lessen their effects and prevent burnout or aid in an employee's recovery from burnout.⁴ Coping strategies reported by the respondents of the questionnaire in the New Zealand study by Jasperse et al.(2015) included informal social support from other colleagues, friends, and family members, development of an exercise routine, continuing education, mentoring or being mentored, increased awareness of stress and burnout, techniques for relaxation, support groups, and counseling.⁶

Recovering from burnout must be a very intentional effort on the part of the employee experiencing it, recognizing factors and deliberately moving forward with changing those factors.⁴ It has been suggested that physicians should be asked to undergo burnout screenings, with initial focus being on self-assessment and access to confidential educational resources.⁴ There is no universal coping strategy or even one that has been proven to be more successful in a wide range of cases.² The studies call for more research.¹⁻⁵

Methods

The materials and equipment used includes online-sources: peer-reviewed articles and medical journals. Using the Texas State University library as a helpful search tool I was able to narrow down the parameters of the articles I wished to find. Each article that I referenced, reviewed, and used as support for my paper, is peer-reviewed and was published within the past 5 years.

Discussion

Many of the reasons that make radiation therapists susceptible to occurrences of burnout end up also being potential sources for the high value and high job satisfaction that is often associated with working in radiation therapy. Such is the case for the high level of emotional concerns that one faces when working with patients who are going through cancer and cancer treatments. The difference between this being a factor of burnout and a source of job value is due in part to the radiation therapists' emotional resilience and self-assessment of his or her own competency in being able to successfully maneuver patients' emotional concerns to get them the help that they need and are seeking.

Many of the more recent studies on this topic had small sample sizes, and the workshop type solutions are only beginning to be considered with few conclusive results. If, in fact, training workshops put more pressure on radiation therapists to deplete their emotional supply, different methods must be approached. Perhaps the training workshops could still be beneficial in combination with other strategies, or even alone if their subject matter is changed. A patient-focused workshop may benefit from employee-focused strategies to keep the participants' heads above water. More studies that include solutions dealing with radiation therapists feeling competent in managing

patient needs and demands are essential to developing real action plans for facilities to utilize.

Initially, it was assumed that burnout would lead to radiation therapist complacency, which is generally considered being content or satisfied with how things are. The studies documenting radiation therapy burnout actually show that while a person may become complacent through burnout and then exhibit attitudes such as apathy and detachment from their work, it is not because of contentment but dissatisfaction. Emotional exhaustion, depersonalization, and a low sense of personal accomplishment all do their damage explicitly because the radiation therapist is very discontent with the way things are, the issue instead is that they feel helpless as if they don't have the support, resources, or capability to change anything.

The most crucial step to developing a plan that works to allow radiation therapists to recover from burnout or prevent it entirely, is to develop that plan from the causes of the issue. Recognizing the symptoms of burnout are important to aid someone in which burnout is already in action and perhaps even the first step in back tracking to find the cause. If the roots of the issue are never identified, however, it will be impossible to stop these symptoms from developing again and another individual in the same situation might even slip through the cracks if they are never recognized by their team members or supervisors as having any issues. It should be noted that this can often represent a broad cause of burnout in itself, the radiation therapists being involved in a dysfunctional team or lacking support from the organization.

The same emotional engagement that leaves the radiation therapists vulnerable to burnout should not be ceased because it also fuels the staple function of being able to

sufficiently care for the patients within their facility. Stresses of all kinds in the workplace, between team members, between staff and patients, and at home, are impossible to avoid. The solution is then, not to seek out and remedy each individual issue, but to provide a structure of support within the work environment. One that involves self-assessment but also encourages others to recognize and reach out to team members so that each employee might be able to seek out resources and learn strategies to remove themselves from the loop of helplessness that burnout causes.

Burnout has been thoroughly investigated by various studies related all kinds of careers especially in the medical community and there is therefore a strong amount of data behind what leads to burnout and the symptoms expressed by those who experience it. The discussion of burnout specifically related to radiation therapists however indicates that more research is still needed, as many of the specific studies had very small sample sizes. The greatest limitation of the data available included an analysis of different possible solutions to burnout in radiation therapy. A few methods have been attempted but only as part of more broad study of burnout prevalence and the results of these tried solutions are all inconclusive due to lack of an appropriately big enough sample size.

Conclusion

Any consistent decrease in the advent of burnout of radiation therapists will improve patient safety and quality of care, as well as employer/employee relations. The more educated employers and employees are about the causes of burnout, the more reasonable it can be to attempt to prevent these occurrences and the other harmful effects on the employee, organization, and patients that result from it. It is equally as important

to be able to recognize symptoms of burnout and its causes so as to provide aid to those effected that they might recover before burnout related harm occurs.

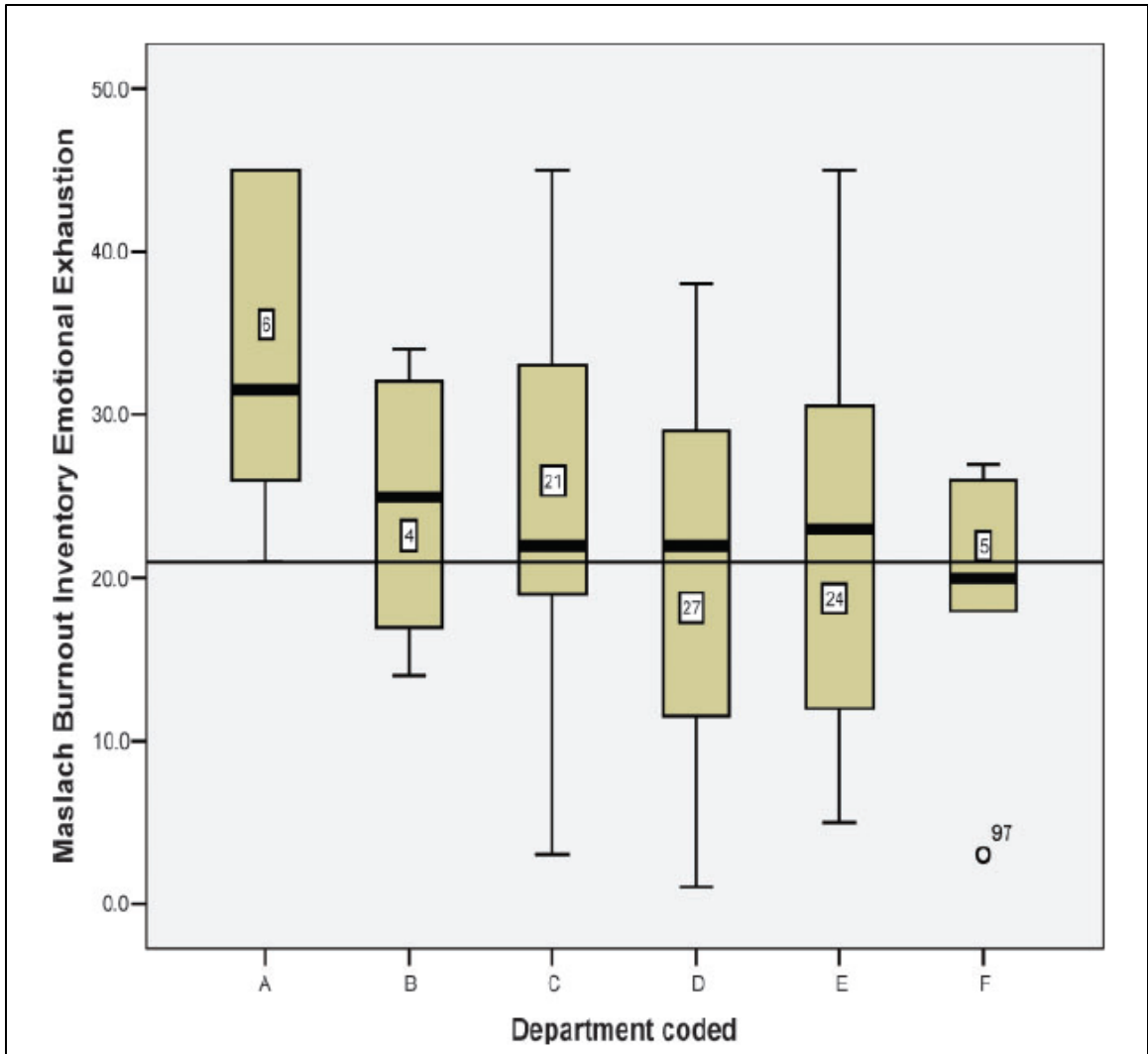
Figures

Table 1 Sources of job stress

Sources of job stress	Quite stressful and very stressful [n (%)]
Having a high workload	61 (54.0%)
Working with teams that are ineffective or inefficient	47 (41.6%)
Machine breakdowns	46 (40.7%)
Working within difficult time constraints	46 (40.7%)
Having problematic working relationships with team members/colleagues	41 (36.3%)
Having little reward or recognition for work done	41 (36.3%)
Having to deal with patients who are angry	40 (35.4%)
Working with confusing or difficult departmental policies and procedures	38 (33.6%)
Working with patients you identify with (e.g., same age/situation as you)	37 (32.7%)
Having to deal with patients who are dying	34 (30.1%)
Feeling unable to help patients who are upset or emotional	33 (29.2%)
Having stressors in your personal life outside of work	32 (28.3%)
Missing treatment sheets	31 (27.4%)
Having to deal with patients who are upset or emotional	31 (27.4%)
Having limited time to talk to patients	28 (24.8%)
Feeling inadequately trained in certain aspects of work	28 (24.8%)
Feeling poorly supported in the workplace	26 (23.0%)
Having unreasonable demands placed on you by other staff	25 (22.1%)
Having to deal with patients who are in pain	24 (21.2%)
Having burdensome administrative responsibilities	21 (18.6%)
Having little control or autonomy within the workplace	20 (17.7%)
Having a lack of opportunity to pursue career progression in the workplace	20 (17.7%)
Lacking confidence in your skills	18 (15.9%)
Working in unpleasant physical workspace conditions	18 (15.9%)
Having a lack of opportunity to pursue professional development workshops and training in the workplace	18 (15.9%)
Having unreasonable demands placed on you by patients	17 (15.0%)
Not knowing what is expected of you	14 (12.4%)
Having problematic working relationships with patients	12 (10.6%)
Feeling incompetent	12 (10.6%)
Accommodating the additional needs of students in the workplace	11 (9.7%)
Administering treatment which has toxic side-effects for patients	8 (7.1%)

Source: Diggins J, Chesson T. Do factors of emotion-focussed patient care and communication impact job stress, satisfaction and burnout in radiation therapists? *Journal Of Radiotherapy In Practice* [serial online]. March 2014;13(1):4-17. Available from: CINAHL Complete, Ipswich, MA. Accessed July 14, 2015.

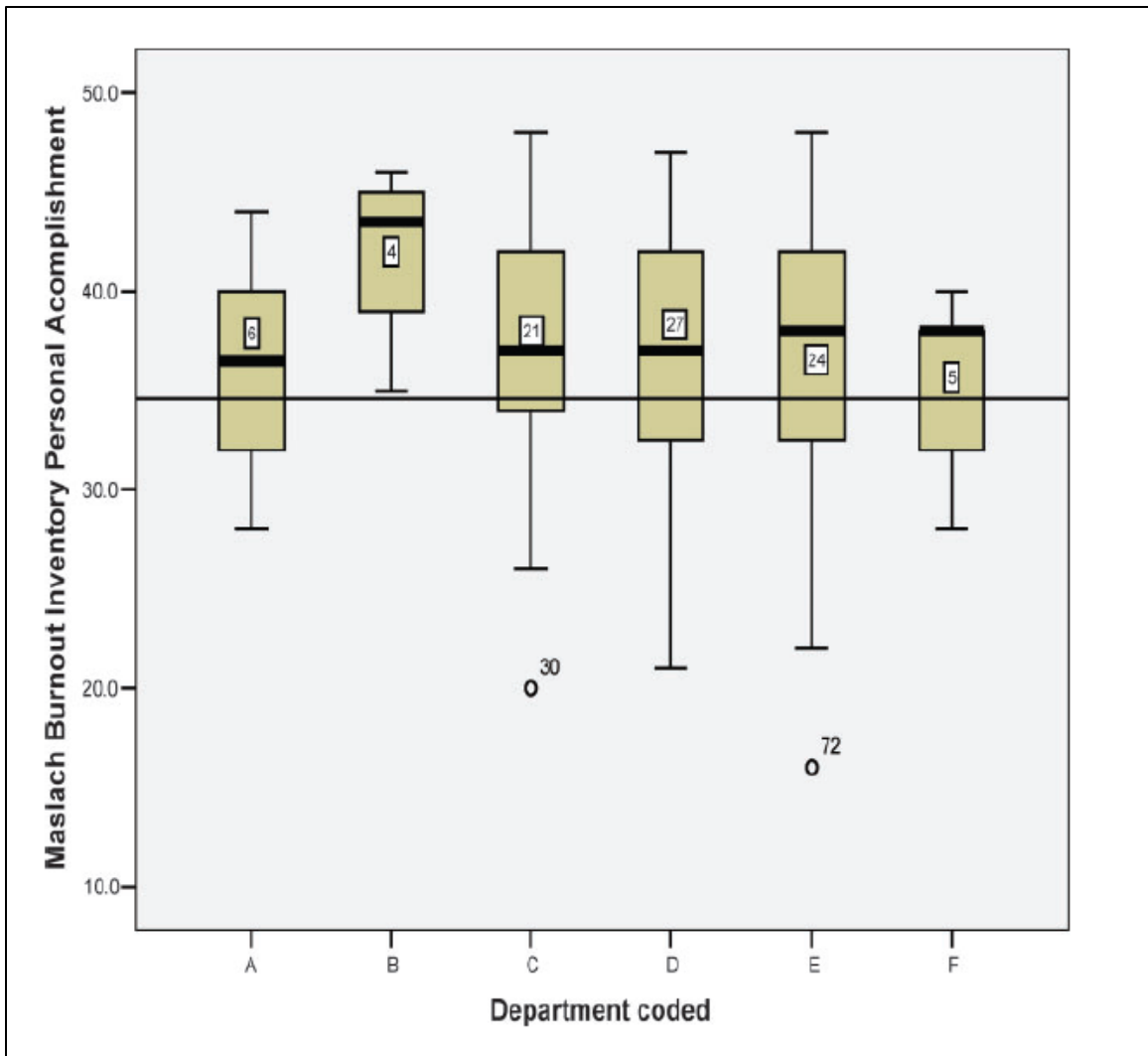
Figure 1 Average Emotional Exhaustion Scores



Source: Probst H, Griffiths S, Adams R, Hill C. Burnout in therapy radiographers in the UK. *The British Journal Of Radiology* [serial online]. September 2012;85(1017):e760-e765. Available from: MEDLINE Complete, Ipswich, MA. Accessed July 12, 2015.

Figure 2

Average Personal Accomplishment Scores



Source: Probst H, Griffiths S, Adams R, Hill C. Burnout in therapy radiographers in the UK. *The British Journal Of Radiology* [serial online]. September 2012;85(1017):e760-e765. Available from: MEDLINE Complete, Ipswich, MA. Accessed July 12, 2015.

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