

## Original Article

# A pain survey to support role development for Radiation Therapists in Ghana

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## Abstract

A research study was conducted at the radiation oncology department of a large teaching hospital in Ghana, to determine whether the use of a pain questionnaire would facilitate a contribution by the radiation therapists (RTs) to the management of pain in the patients undergoing external beam radiotherapy. The rationale for the study was to test the pain questionnaire as a tool for routine use by RTs and to increase the knowledge and skill of the RTs with regard to pain assessment in order that they could have an effective role in the multidisciplinary approach to pain management.

The pain questionnaire for administration by RTs was adapted as a tool for assessing pain. The tool and the process were tested in a prospective study of 90 participants who willingly consented to participate. The data was analysed as a means of evaluating the questionnaire and learning about pain in this group of cancer patients. The results of this analysis were integrated with the findings from textual data published in a previous paper.

Findings revealed that RTs could administer a limited pain questionnaire and use this for clinical assessment of patients with pain, refer patients who need urgent medical attention to the doctors, monitor the patients receiving radiotherapy and adjuvant chemotherapy as well as provide meaningful suggestions to the multidisciplinary team on the management of pain.

Through this reflective process it is recommended that because RTs have daily contact with patients during external beam radiotherapy treatment and because the majority of cancer patients in the study population experience pain, the RTs should enhance their knowledge of pain and participate in routine pain assessment. Through engagement in this role development the quality of care to the patient population in Ghana will be improved.

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## Keywords

cancer pain; radiotherapy; pain assessment; pain management; role extension

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## INTRODUCTION

It is often assumed that the greatest problem that cancer patients must deal with is their diagnosis, but for many patients, the pain associated with their disease makes daily life difficult and it can be more debilitating than the primary disease itself.<sup>1,2</sup> Studies suggest that 55% of all cancer patients experience pain<sup>3</sup> and that this rises to between 64% and 90% in patients with advanced disease.<sup>4</sup> Furthermore, 30% to 50% of people experience pain while undergoing radiotherapy.<sup>4,5</sup> The high incidence of pain with advanced disease is relevant to this study population since the patient data at the study site shows that the majority of patients treated during the years 2005–2008, presented with advanced cancer.

The International Association for the Study of Pain (IASP) defines pain as ‘an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage’.<sup>1</sup> Pain can either be acute or chronic and the causes can be from the disease itself, as a result of treatment and sometimes the pain is unrelated to any known factor.<sup>6</sup> The consequences of this suffering are depression and anxiety, which in turn have a negative effect on the person’s response to treatment and their quality of life. This means that there is the need for routine pain assessment within a multidisciplinary approach to pain management in order to enhance the outcome for the patient.<sup>7</sup> Due to the changing expression of cancer pain, patients require repeated assessment, as new causes for pain can emerge rapidly.<sup>8</sup>

A research study was designed to determine whether through the use of a pain questionnaire the RTs could contribute to the management of pain in the patients undergoing external beam radiotherapy. The aims of the study were to test the pain questionnaire as a tool for routine use by RTs, to simultaneously increase the knowledge and skill of the RTs with regard to pain assessment and to determine whether this was an appropriate role development for RTs in Ghana. A case study that gath-

ered text data through interviews (individual and focus group), field notes and reflective writings from professionals directly involved in the radiotherapy department explored their perspectives on pain assessment as a role development for RTs. The findings of this component of the research were published in a previous paper<sup>9</sup>.

## METHODOLOGY

To explore the impact of RTs integrating pain assessment into their daily routine the use of a pain questionnaire was tested through a prospective survey of 90 eligible cancer patients, over the age of 18 years, who were undergoing radiotherapy and had pain. The pain assessment tool selected for this study was the Pain Questionnaire by Pain Management Centre; a modified version of the Short-Form McGill Pain Questionnaire (SF-MPQ-2) by Melzack<sup>10</sup> used to identify the location, the severity and the frequency of pain. SF-MPQ-2 is a widely accepted method for describing and quantifying pain.<sup>10</sup> It has also demonstrated reliability for assessing pain from a variety of diagnoses, including cancer.<sup>11</sup>

The questionnaire had four sections. Section ‘A’ and ‘B’ provided the general biographical information of the participants such as the patient’s identification number, age, sex, marital status and employment information. Section ‘C’ primarily concentrated on pain and consisted of eight questions covering the location of the pain, duration of the pain, factors that relieve or increase pain and how and when the pain started. The final section ‘D’ of the questionnaire focused on the coping mechanisms of the patient and the treatment they had received to help with their pain.

### Analysis

Data retrieved from the 90 distributed questionnaires was entered into a database and analysed statistically using SPSS version 16. Response frequencies for the survey questions were determined and are displayed in graphical format (Figures 1–4). The analysis and interpretation also included a process of coding for open

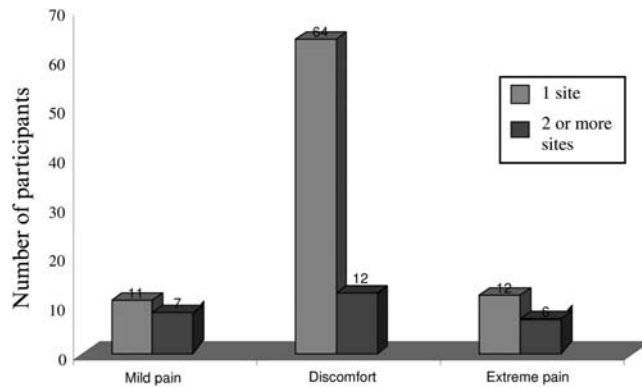


Figure 1. Intensity of pain on the number of sites.

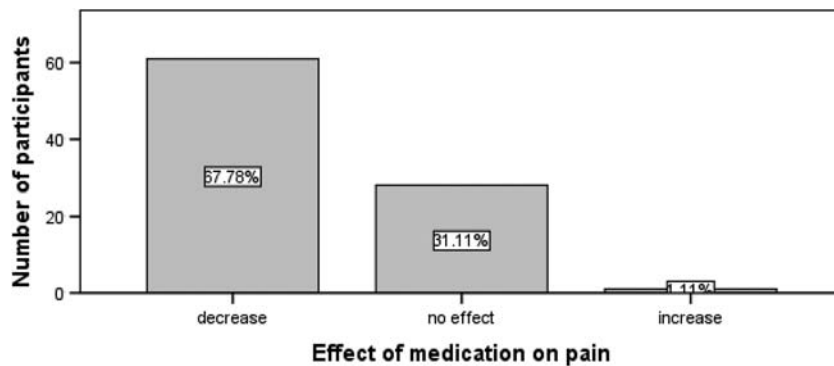


Figure 2. Effect of medication on pain.

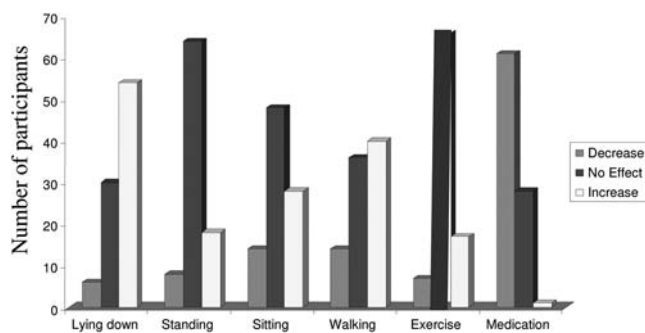


Figure 3. Effect of position.

ended questions through careful examination and categorisation of the textual data into identified or emerging themes.

### Ethical considerations

Approval for the study was obtained from the research ethics committee of a higher education

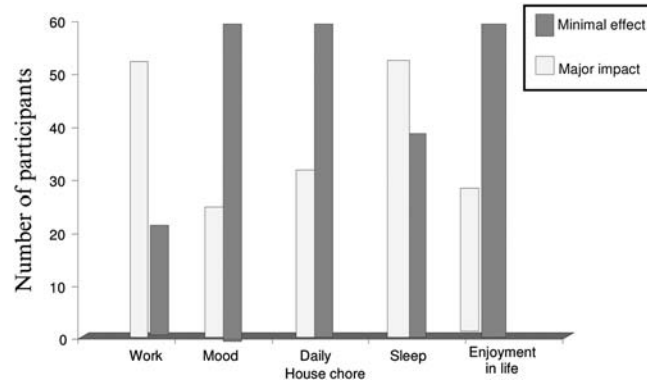


Figure 4. The impact of pain.

institution. The ethics approval was supported by written permission for the study to be conducted at the study site. All study participants gave informed consent as a participant in the study, prior to the commencement.

## RESULTS

The pain assessment tool was administered to 90 patients by RTs at the study site and all the questionnaires were returned to the researcher. Patients were recruited at three different stages of the cancer journey; those on simulation were 39/90; those already on treatment were 45/90, and 6/90 were attending for review after completion of treatment. However not all 90 participants answered all the questions. The total number of participants (n) therefore varies for some questions and is indicated accordingly. The results from the quantitative analysis of the data show that the patient sample comprised of 74.4% (67/90) female and 25.6% (23/90) male respondents. The mean age of the participants was 52 years and the ages ranging from 19 years to 75 years with a median age of 53 years.

It was found that 78.2% (68/87) of participants had pain in one site and 21.8% (19/87) had pain in more than one site while 9.2% (8/87) had mild pain, 74.7% (65/87) had discomforting pain and 16.1% (14/87) had extreme pain (Figure 1). Further, it was found that 81% (64/79) of participants experienced pain intermittently with symptoms of aching, burning or shooting

pain and 15.7% of participants indicated that they had pain all the time, whereas 42.2% had pain for less than 5 hours per day. While 70% (63/90) stated that their pain interfered with their daily work, 58% (52/90) had severe pain that interfered with their sleep, and 25.6% (23/90) of the participants were taking medication to manage their pain.

Lying down and sitting increased 60% (54/90) and 31% (28/90) of the participants' pain respectively and in this study, standing was indicated as having no effect for 71% (64/90) of respondents (Figure 3). Although 70% (63/90) stated that exercise had no effect on their pain, 44% stated that walking increased their pain, whereas 68% (61/90) of participants indicated that medication decreased their pain.

The questionnaire included some open questions to allow for patients to express unique information that would allow for individualised management. The analysis of this text data showed that factors that reduced pain included such activities as; drinking water, applying ointment, prayer, stretching of arms and bending. Pain was shown to be aggravated by; closing of eyes, lifting, hot environment, coughing, arm movement, menstruation, urination, eating spicy food and working (sweeping, washing).

An integrated analysis of the numeric and text data produced emerging themes such as; pain and daily activities, medication compliance, factors that affect pain, position and pain, pain

from treatment, severe pain/constant pain and a multidisciplinary approach to the management of pain.

## DISCUSSION

Pain is a symptom experienced by many cancer patients.<sup>12</sup> To ensure proper management of cancer pain, role development for the RTs is proposed. Further learning must provide the necessary knowledge and competencies to identify the area of pain, the cause and the required treatment through proper assessment of the pain.<sup>13</sup> RTs' role in pain assessment and management were grouped into three categories.<sup>9</sup>

1) Patients requiring immediate attention were identified as those with no response to prescribed pain medication, those whose daily activities such as sleep, work, and mood are affected by the pain, and those with constant pain. The role of the RTs in this category was to refer patients immediately to a doctor.

2) A second category called 'watchful waiting' was identified as patients who could wait till their scheduled review date to see the doctor, but with the inclusion of a note in their folder about their condition and pain assessment. The RTs 'watchful' role was monitoring patients and noting any changes, as well as giving reassurance to the patient. The 'waiting' aspect was patients' responsibility to wait till their review date was due.

3) The final category of patients were those RTs could manage unless any change in their pain occurred since they experienced mild and occasional pain.

The emerging themes from the analysis of the open questions in the questionnaire are discussed to highlight the possible impact of RT role development on pain management.

### Pain and daily activities

The results of the study revealed that pain interfered with the daily activities of participants which included; sleep, work, house chores,

enjoyment in life and mood of patients (Figure 4). Participants identified sleep, mood and work as being most affected by pain and these three will be discussed.

The sleep of 58% of the patients was affected by their pain (Figure 4). A study conducted by the American Academy of Sleep Medicine<sup>14</sup> suggests that sleep problems lead to increased pain and fatigue in cancer patients. Their results indicated that any treatment aimed at helping the patient to sleep could be expected to improve both pain and fatigue in this patient population. However, it has been revealed that pain has a major impact on daily lives and that it can cause sleeplessness and depression as well as interferes with normal physical and social functioning of individuals'.<sup>15</sup> Hence effective management of this pain will improve the situation for the patient and their care-giver.

The findings showed that in 22% of the patients their mood was affected by the severity of their pain (Figure 4). These patients with pain interfering with their mood had extreme pain and needed urgent attention. Through the study, RTs were informed that pain could affect patient's mood and even their behaviour toward the health care practitioners irrespective of how nice staffs are to them.

Another important finding about pain interfering with work was that 9% (7/78) of the patients stated that, they were unemployed because of pain. As a result they were under pressure since their whole family depended on them and their work was the only source of the household income. For most patients the thought of losing their job, because of the pain they experienced, was a burden to them. Many were prepared to work irrespective of their pain and even tolerated severe and constant pain but kept working. For these patients, referral by the RTs to the radiation oncologist was very helpful.

### Position and pain

The importance of pain and position that was highlighted through this study was the set-up positions during simulation and treatment and

position while waiting to be called. Lying down was seen to increase the pain in 60% (54/90) of patients. It is noted that, 31% (28/90) and 20% (18/90) of respondents stated that sitting and standing respectively increased their pain (Figure 3). Most of the patients (61%) presented with advanced disease and this is likely the reason that a high percentage of participants had difficulty with lying down and the reason for many patients preferring to walk around the department rather than sit and wait.

One of the major concerns of the RT is that the patient remains in the same position throughout the treatment in order to achieve accuracy in dose delivery to the target area. There is the likelihood that patients may move if they do not feel comfortable, thereby reducing the precision of treatment. A comfortable position is therefore essential when selecting a treatment set-up for a patient especially, a patient in pain as this will promote patient stability and contribute to the best possible patient experience.<sup>16</sup> This study was very beneficial to patients undergoing simulation at the time study (39/90) as it allowed the RTs to consider the patient's pain when determining the treatment position. A routine pain assessment conducted by RTs at the study site before simulation would be beneficial to all.

The study centre is an outpatient department and has no admission beds for patients except in an emergency. Hence it is the case that though a patient has pain during walking, most had no other option but to walk. One may be tempted to think that pain must increase with walking for all patients, but as was seen in this study; 44% (40/90) of the patients had no change in their pain with walking, whilst almost 16% (14/90) found that walking in fact reduced their pain.

### **Severe pain/constant pain**

In this study 13% of the patients had extreme pain located in one site, and of the 25 patients who had pain in more than one site, 6 had extreme pain (Figure 1). Acute pain is pain that is short lived but can be described as severe.<sup>17</sup> Such patients may require immediate

intervention in order to prevent the pain from becoming aggressive and persistent.<sup>18</sup>

Patients with chronic pain which never goes away find that their pain dominates their life rather than the disease. Such chronic pain can be classified into either persistent pain or breakthrough pain.<sup>12</sup> Persistent pain can range from mild to severe and it is patients in the latter category that are considered by RTs to require urgent attention because they might either have been suffering pain without treatment or the treatment for their pain has failed.

### **Pain from treatment**

It is worth noting that patients may suffer from pain from the side-effects of the radiation treatment,<sup>2</sup> although the radiotherapy itself is not painful,<sup>15</sup> and contributes to pain reduction for many cancer patients. Patients undergoing radiotherapy do not always report pain associated with treatment.<sup>2</sup> However, when they have acute pain as a result of treatment, it tends to be worse toward the end of the treatment regime and resolves within a few weeks after treatment, whereas pain arising as a late effect occurs sometimes months or even years after treatment.<sup>18</sup> During the pain assessment, comments generated from participants recruited while undergoing treatment (45/90) revealed that some patients do confuse the side effect of the treatment with pain from the disease. When this was found the RTs were able to explain further to patients and help them to understand whether their pain was from the disease or the treatment. The latter was evident when patients suffered pain from treatment side effects such as, wet desquamation, diarrhoea, and mucositis. Such patients' complaints were channelled by RTs during their weekly review.

### **Medication compliance**

Medication was seen to reduce pain in 68% of the participants (Figure 2). The WHO<sup>19</sup> guidelines for the management of pain define medication as a major tool in reducing pain. However in this study, 31% of the patient had no effect on their pain from their medication. This needs further investigation to isolate the



**Table 1.** Treatment received by participants (*n* = 90)

Treatment	Frequency	Percent
Radiotherapy	39	43.3
Drugs	23	25.6
Others	4	4.4
No treatment	24	26.7
Total	90	100.0

reason for this non-response in 1 out of 3 patients. One factor to explore is compliance as there was some indication that about a third of participants did not comply with medication schedules, but the reasons are not known from this study. RTs do not prescribe pain medication at the study site. This differs from the role extension introduced in UK in 2001<sup>20</sup> that allows radiographers to prescribe, supply and administer some medicines. Role development has received much attention in the UK where research and publications continue to demonstrate the developing nature of the radiographer's role.<sup>21</sup> The development of a role that permits RTs in Ghana to conduct pain assessment and prescribe specified medication would contribute substantially to the multidisciplinary team's approach to pain management.

### Factors that affect pain

Factors listed by the participants that either made their pain better or worse included aspects covered in the normal daily advice that RTs as part of their duties recommend and suggest to patients undergoing radiotherapy. RTs could therefore quite easily take on an extended responsibility and deal with this more comprehensively with each patient.

For instance, patients with cancer in the head and neck region are always encouraged by the RTs to drink more water to avoid a dry mouth during the treatment. Those receiving radiotherapy to their lower and upper abdomen and with a huge tumour mass in the area of the disease are encouraged to use a cushion when lying down or sitting. Those receiving treatment to the thoracic region are advised to wear loose clothing in order to reduce skin

irritation in the area being treated and allow free-flow of air. Others who have spiritual beliefs about their disease and pain are constantly encouraged to pray with faith for their healing and have confidence in the treatment they are receiving. They are also advised not to stop treatment, but are counselled to complete their treatment. This could be done more systematically and in a focused way for each patient if pain assessment was a routine RT role.

### A multidisciplinary approach pain management

The study revealed that the management of pain requires contributions from the multidisciplinary team (Table 1). Various treatments are used to achieve optimum quality of care needed for the patient experiencing pain. For example radiotherapy was seen to improve pain response according to some participants receiving treatment at the time of study. Approximately 26% reported that the medication given to them by the radiation oncologist as a combined treatment during radiotherapy was very beneficial. Other pain strategies indicated were traditional medicine, psychosocial and pastoral care.

To defend the need for a multidisciplinary approach to pain management this study showed that participants were assisted to cope with pain by various treatments such as radiotherapy administered by RTs, medication prescribed by radiation oncologists and other medical staff and monitored by RTs/nurses, and other interventions by psychologists, surgeons and other medical staff. The importance of extending the team approach to pain management beyond the formal health service was noted since participants indicated a role for pastors and traditional medicine.

Studies conducted at the study site by Kyei et al.<sup>22</sup> indicated that 63% were satisfied with the overall care provided, however, few of the clients were not satisfied; others were not certain and hence were seen as an expression of dissatisfaction. These results were not only in agreement with previous research on patient satisfaction, but also, goes further to give more

meaningful information to the patient as well as the care giver with regards to quality of care patients are receiving. A role in pain assessment by RTs would affect future satisfaction.

## CONCLUSION

The research confirmed that the majority of cancer patients (88%, 79/90) at the study site experience pain from the disease itself and also as a result of the treatment. This study was carried out by RTs in Ghana using a pain questionnaire. Through the assessment of pain, RTs were able to recognise and classify patients into various categories. Those that needed urgent attention were identified and immediately referred to the doctors. Others who had pain but could wait till their treatment review date were monitored and reassured by the RTs. Patients who had mild pain could be managed by the RTs and were given the necessary assistance.<sup>9</sup>

This assistance from the RTs to the management of patients with pain included recommending appropriate positions for patients to use at home, providing appropriate positions during simulation and treatment, educating and advising family members and carers on the provision of care and support to the patients, promoting treatment planning as a routine practise for all cancer patients in order to reduce treatment side effects and giving meaningful in-patient to assist the doctors to care for the patients appropriately.

Overall, the results highlight the need to improve the quality of treatment given to cancer patients undergoing radiotherapy by effectively managing their pain. It is suggested that it is time RTs embark on role extension in the interest of improved patient care. With the increase in referrals of patients for radiotherapy, but with the same numerical strength of radiation oncologists, doctors and RTs, we all need to find ways to work more efficiently so that we manage the workload while constantly striving to improve the care and quality of life of our cancer patients. The RT has daily contact with the patient during external beam

radiotherapy treatment and is therefore in a good position to conduct routine pain assessment as part of their role. In Ghana, RTs have taken a step and have positioned themselves to take on the extended role of pain assessment when given the mandate<sup>9</sup>.

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