

A Study on the Occupational Stress Among the Radiographers Working in Healthcare Centres in Shillong

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ABSTRACT

Background: Occupational stress can lead to negative impact on an individual which is associated with varying range of mental effects, resulting in Stress. Mainly due to increased workload, prolonged working hours and shifts duties, Healthcare workers (HCW) have been reported to have a great deal of stress. The aim of the study was to assess the occupational stress among the radiographers working in different healthcare settings in Shillong.

Methodology: This cross-sectional descriptive analytical study was performed on 25 Radiographers during pandemic in Shillong. Demographic information form and occupational Stress Questionnaire (HSE tool indicator) were used to collect data. The health and safety executive (HSE) questionnaire has 35 questions and 7 areas, which was developed in the 1990s by the UK Health and Safety Institute to measure occupational stress.

Results: The mean and SD score of job stress among Radiographers 134.5 ± 21.38 , the minimum and maximum score ranges from 89 to 163 respectively. The indicator analysis tool recommended 10 “psychosocial work conditions” that required improvement. On an aggregate level from the seven psychosocial working conditions ‘Control’ and ‘Managers support’ category warranted improvement.

Conclusions: The mean stress score among the participants of the present the study has shown the main source of stress being Managers support, followed by control, relationship conflicts among co-workers, excess demand, and lack of peer support. Hence, it is recommended to develop interventions needed to manage psychosocial stress that may result in an improved work efficiency.

Keywords: Occupational Stress, Radiographers, Medical Imaging Technologist, Healthcare workers, Stressors

INTRODUCTION

Occupational stress is considered of great concern for the employees worldwide. According to health and safety executive (HSE) occupational stress is defined as “adverse reaction people have, to excessive pressures or other demands placed upon employee within the working environment”.(1) Occupational Stress can be harmful to both physical and emotional response, resulting from being not able to

handle the perceive demand resulting in variety of mental and physical effects leading to psychosocial stress.(2,3) Physical effects may include fatigue, headaches, low back ache, and impaired immune functioning.(4) A person with chronic stress can develop unstable blood pressure, muscle tension, hypertension, substance abuse, increased cholesterol levels, and clinical depression too.(5,6) Mentally person with stress may experience mood swings and

anxiety resulting to socially withdraw themselves which results in poor performance and low productivity, weight loss, obesity and increased alcohol intake.(4) The more severe consequences sometime may be “burnout”. Burnout is defined as psychological syndrome of emotional exhaustion and depersonalization which occurs among individuals who work with other people, particularly critical situations.(7,8) Lately occupational stress has been affecting almost all countries in various professions and categories of workers and even the families and societies because of the globalization. Stress in workplaces may have different sources, affecting both the employer and the employees. Stressors is factors that cause stress.(3,9,10) There are six areas which are primary source of stress at workplaces according to HSE Management Standards. If these areas are not properly managed, it can result in poor health, wellbeing, and decreased productivity. These stressors are “Demand, control, support, role, relationships, and change”.(1) Among various healthcare workers, radiographers are exposed to stress at work places, where role ambiguity, role conflict and social support problems is considered highest predictors of stress.(3,4,9,11,12) When occupational stress is identified in any workplace environment, immediate action towards management is required, so that accurate, better work efficiency and productivity are achieved resulting to better patient care, which will improve the mental, physical health and wellbeing of the person improve.(3) Although studies have explored occupational stress in different countries, there are only a few studies in the country that investigates occupational stress among the radiographer’s community. To the best of our understanding, no published data are available to investigate occupational stress among radiographers in the region of Shillong. Our objective was to assess occupational stress among radiographers in different healthcare centres in Shillong.

MATERIALS & METHODS

The cross-sectional questioner-based survey was conducted for over a period of six months on qualified diagnostic radiographers working in different healthcare centres in Shillong. The study approval was obtained from the Institutional ethical committee MLCU, Shillong (VI/40(LETTERS)/AHS/1/2020-2021-179). The questioner was tested among 5 radiographers to understand if questions were understood. The data collection was done using pre-tested self-administered questionnaire which was published by health and safety executive UK.(1) There were 35 questions with 5 point Likert scale “never, sometimes, seldom, often, and always”. Each of the items was presented by individual score from 1-5 where 1 being least desirable and 5 being most desirable. There questionnaire was divided into 2 sections, the first part included individual’s profile like participants name, and gender, experience in year and the second section included questioner to measured psychosocial stress conditions at work. The minimum and maximum stress score for the questionnaire was 35 and 175 respectively.

Statistical Analysis

The data was analyzed using SPSS Software 22.00. To analyse data for stressor, the responses were tabulated into excel sheet analysis tool which was published by HSE. Individual and aggregate score were generated for each item and for all seven sets of ‘psychosocial working condition like “job demands, Manager Support, control, role change, peer support and relationships”. The tool also presented recommendation required for action to that of benchmark results by assigning colour coding. The 4 categories of recommendation included “red: urgent action needed”, “yellow: clear need for improvement”, “blue: good, but need for improvement” and “green: doing very well, need to maintain performance”. Descriptive analysis of data was performed to summarize mean levels of job stress at workplaces. Independent t-test was

performed to assess if any stress level differences among different age groups, gender, work experiences and marital status.

< 0.05 p value was considered significant when comparing between groups.

RESULT

Table 1: Demographic profile of respondents

Measures	Items	Frequency	Percentage
Gender	Male	13	52%
	Female	12	48%
Age	Below 30	11	44%
	Above 30	14	56%
Place of work	Hospitals	20	80%
	Clinics	5	20%
Occupation	Radiographer	17	68%
	X-ray technician	4	16%
	Darkroom assistant	2	8%
	Radiology technologist	1	4%
	X-ray/CT assistant	1	4%
Rank	Junior	14	56%
	Senior	11	44%
Number of working hours	≤5hours	20	80%
	≥6hours	5	40%

Twenty-five radiographers' respondent from two tertiary care hospitals and three different X-ray diagnostic clinics, 56% of radiographers were above 30 years. Majority were Males (52%), and (48%) were females, 56% of the participants were junior radiographers of X-ray technologist

whereas 44% were Senior Radiographers. (Table 1) The mean and standard deviation score for job stress among 25 radiographer was 134.5 ± 21.38 ranging from 89 to 163 minimum and maximum respectively. (Table 2)

Table 2: Range, Mean & SD score of job stress among Radiographers.

	Number of Radiographer	Minimum	Maximum	Mean	SD
Job Stress	25	89	163	134.5	21.38

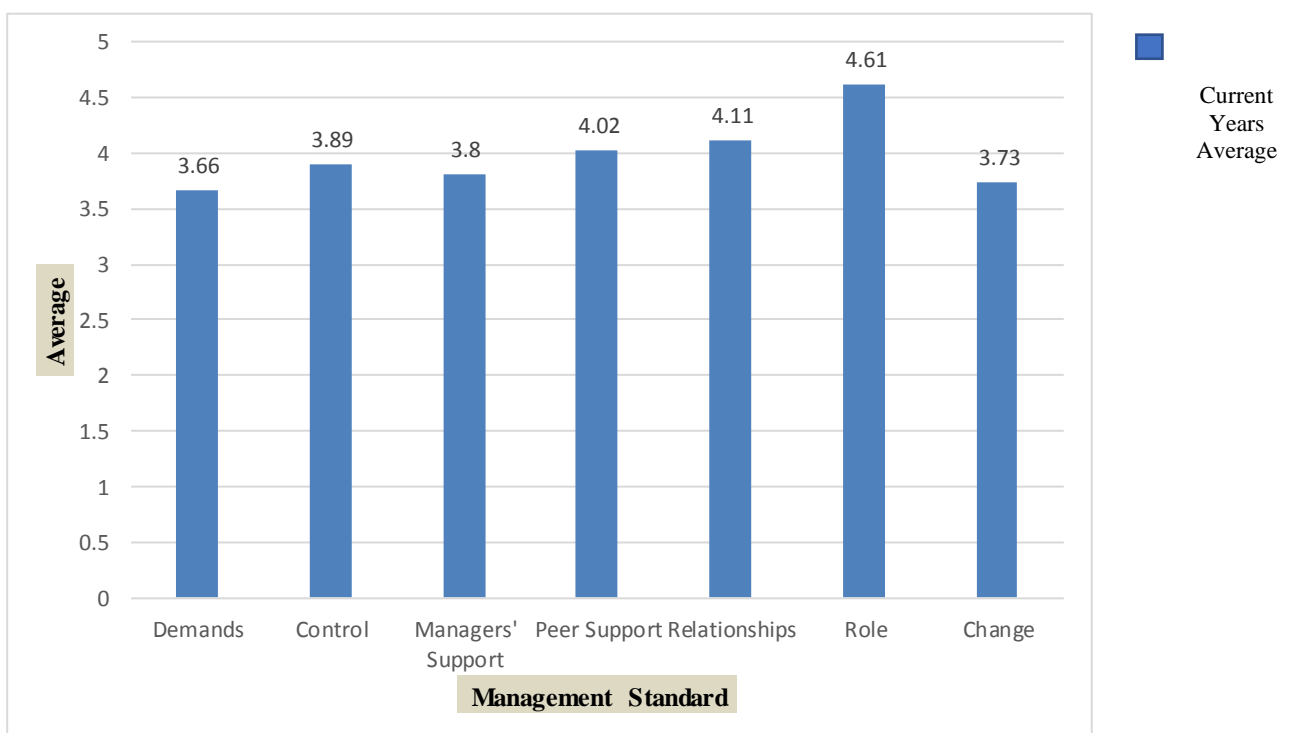


Figure 3: Average score of indicator items of seven individual categories.

The items mean score which were below 20th percentile in comparison to benchmark data gathered from 136 organizations by HSE was “red lighted” ‘by analysis tool which indicate “urgent action required”. None of the seven management standards was found to be below 20th percentile at aggregate level, scores of three individual items were observed dispersed across two stressor categories were below 20th percentile indicating ‘urgent need of action’, in control and manager’s support category. On the other hand, the Scores on two items were yellow lighted, because they were between 24th and 49th percentile which indicates “clear need for improvement”, these items were dispersed across two of the analysis categories, one in manager’s support and one in relationship. On the other hand, 3 individual items score were seen scattered across 2 stressor categories were below 20th percentile, which is a clear indication urgent need of action. These items were observed to dispersed across two of the analysis categories, two items from manager’s support and one in control. Scores on five items were blue lighted as they were found to be above or close to 80th percentile indicates better than average therefore “good but need for improvement”, they were scattered across three categories 2 items in Demand, 2 items in control and 1 item in peer support of the analysis categories. 25 items (majority) were identified greater than 80th percentile and green colored clear indication “doing very well, need to maintain the performance”. The 35 examined psychosocial working by HSE indicator tool, ten items indicated need for improvement when compared with benchmark data by HSE, UK. There was no significant difference in average scores between genders “(p=0.37; p=0.48; p=0.59; p=0.86; p=0.13; p=0.77; p=0.88)” and marital status “(p= 0.35; p=0.05; p = 0.25; p = 0.91; p = 0.65; p = 0.99; p = 0.79)” across all seven categories. The result did not show significant difference in average score for stress levels among age groups as well “(p = 0.46; p = 0.90; p = 0.51; p = 0.74; p = 0.65;

p=0.49; p=0.52)” and their work experience “(p = 0.13; p = 0.97; p = 0.37; p = 0.81; p = 0.34; p = 0.74; p = 0.22)”.

DISCUSSION

This study shows that out of thirty-five statements, twenty-five of these statements were above 80th percentile, when compared with “HSE’s current benchmark data”. Five statements were above the average but needs improvement, two statements were almost below the average and required an improvement and three statements needed urgent action. The factors causing stress were categorized into seven categories such as “demands, control, managers’ support, peer support, role, relationships, and change”. There were different studies that have shown that excess demand, high workload, absence of support exists.(2,3,9,13) The commonly factors influencing occupational stress include high workload, inadequate payment, role conflict, resource inadequacy and administrative pressure.(9) The work-related stressors including Manager’s support, relationships, role and change were identified among the radiographers and denoted the highest risk.(14) Too much workload and the relationship conflict between the colleagues were found as the stressors.(3) However, this current study shows most of the seven categories were in good performance, but there is need for improvement in demand, managers’ support and change. Most of the respondents must work very intensively and, they also did not get much encourage from their line manager or talk about work that annoyed them. Demand can be described as those aspects of job that is difficult to achieve for the employee, in the work environment. Ugwu et al. 2007 reported that stress was the result of higher demand for performing the duty with adequate skill and perform the duty importantly in large number of patients in a day.(2)

In a study reported by Chingarande George et al. (2013) found that among the participants 81.6% said that their stressors

were overwork, inadequate pay, and holidays or vacation and time off. This study revealed excess workload as most of the respondents must work very intensively, 32% were always needed to work very intensively, 16% often 36% only sometime and only 16% they never work very intensively. There were some radiographers that sometimes (50%) they experienced that different groups at work demand things from them which make them hard to combine. In our study inadequate holidays was also experienced as 64% were unable to take sufficient break as they must work more and 28%, they are able to take sufficient break. This study did not include any questions regarding the payment, hence inadequate pay cannot say as the sources of stress in this study. According to Rothmann and Joubert 2007 making critical on-the-spot decisions, also added to occupational stress.(15) 36.5% of the respondents in the current study, had control over their workplace. 40% among the participants which was the majority only sometimes they can decide to take a break and only 4% were not able to make their own decision for taking break. 52% agree that their working time can be flexible.

The support that the employees got from their manager can give comfort of value and bring self-assurance for the person and also influence stress that the worker was facing.(16) Some of the factors that contribute to occupational stress was insufficient support by their supervisors.(15) The support from the manager has substantial issues to the radiographer as the result show a lowly performance according to the respondents.(14) In this current study, it revealed that among the radiographers 20.8% never, 25% seldom, can rely on their line for their work-related problem, but the majority i.e. 50% were always able to rely on their line manager. 20% disagree that they can't talk to their manager about something that has upset and annoyed them at work but 50% agree strongly to the same. 28% get supportive feedback only sometime and 52% always get. The result of this study

shows that most of these respondents got adequate support from their manager. We also saw insufficient support from their co-worker contributed to occupational stress. Although most respondents reported good support from their colleagues in their workplace, 16% disagreed their colleagues were not willing to listen to their work-related problems. Our results agrees to that of Verrier and Harvey (2010) report.(14) Some of the stressor like uncooperative attitudes of other healthcare professionals contribute to the occupational stress of the pharmacist.(17) The radiographers experience disturbance from their colleagues and subordinates.(9) However, in our study there was no issues with relationships between the radiographers and their colleagues, but just few of them (12%) agree that the relations at work were strained, 8% were subjected to personal harassment in the form of unkind word and inappropriate behaviour and 4% said that there was always friction of anger between colleagues the same was reported by Nayak, Kumar, and Panakkal 2020 study found that intolerable behaviours such as personal harassment with harsh word or behaviours added to the occupational stress among the radiographers.(3)

The role category also contributed to stress as uncertain change during line of duty, According to Verrier and Harvey 2010, Radiographers were also not clear about the change at work and also, they were not consulted, and they got a very less opportunity to questions manager about change at work.(14) Most of the participants (75%) were clear about their role in their department which indicate that they understood of what they were expected at their work. In the overall responses from our study, the category 'change' shows the lower overall score after demand which indicate that the performance of some of the participants were not strong. From this study radiographers in these healthcare centres in Shillong were stress out because of some factors. With carefully looking with the other literatures, a various number of

factors were found where excess demand to be the first factor that contribute to the occupational stress followed by change and lack of managers' support, and this need an improvement. This study as it was done during the COVID-19 pandemic, these stressors that the radiographers experienced in their workplace can also be due to the situation that they were in.

CONCLUSION

The average score for stress among participants in this study showed the main source of occupational stress as Managers support, followed by control, relationship conflict among co-workers, excess demand, and lack of peer support. Henceforth, improving communication between co-workers working together, building strong bonds between managers', supervisors, and subordinates, and improving workplace environment and reducing workload (workplace demands), stress level can be reduced. Hence, it is recommended to take necessary interventions required to tackle stress which will improve work efficiency. The study had time constraint which resulted in small sample size.

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Conflict of Interest: The authors declare that this is their own work; all the sources used in this paper have been duly acknowledged and there are no conflicts of interest.

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