



AN EVALUATION OF THE EVIDENCE OF BURNOUT AMONG ULTRASOUND PRACTITIONERS IN RIVERS STATE

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ABSTRACT

Background

Occupational burnout has become a critical issue among ultrasound practitioners. Inappropriate management of occupational burnout can lead to serious health problems.

Aim

To evaluate the evidence of burnout among ultrasound practitioners in Rivers State.

Materials and methods

A survey of ultrasound practitioners in selected diagnostic imaging facilities in Port Harcourt and its environs was conducted between November, 2018 and March, 2019 to evaluate the evidence of burnout. A descriptive survey design was employed and selection of the facilities was done using systematic sampling technique. 21 diagnostic imaging facilities were used. Ethical clearance was obtained from Management of the facilities. Data were obtained from structured questionnaires administered to 50 ultrasound practitioners in these facilities, who accepted to participate in the study. The questionnaire surveyed basic demographic data, time taken to get to work, experiences, practices, number of night shifts and other factors that predispose burnout. Data analysis was done using SPSS version 20.

Results

The factors contributing to burnout among ultrasound practitioners are understaffing leading to work overload and excessive overtime work (41%), hostile interactions with patients' relatives (34%), interactions with colleagues (20%), and conflict with Boss/supervisor (5%). Burnout manifests differently among the practitioners as feelings of: being worn-out and weary (46%), being sick (31%), being emotionally drained (23%).

Conclusion

Ultrasound practitioners in Rivers State suffer high level of burnout. Issues of understaffing and interpersonal communication skills should be addressed in order to minimize the incidence of burnout.

Introduction

Burnout is a common problem among health workers and professionals. High level of burnout results in job dissatisfaction, rapid turnover of staff, physical and psychological discomfort, and reduction in the quality of patient care. Burnout affects the organization and individuals by reducing productivity and compromising the quality of services provided. Maslach and Leiter¹ sees burnout as a psychological syndrome emanating from individual's reaction to unrelieved or prolonged stress. They identified six important causes of burnout as excessive workload, prolonged hours of work, understaffing, stress, fatigue, and effort-reward imbalance. According to Daugherty², occupational burnout reduces energy, increases emotional exhaustion, lowers resistance to illness, increases dissatisfaction, absenteeism and work inefficiency. There are three subclasses of burnout³. Burnout in workplaces is attributed to some factors broadly classified as organizational and individual factors. The organizational factors include workload, effort-reward imbalance, work conflicts, diminished resources, job insecurity, delayed gratification, understaffing and continuing rapid organizational changes⁴. Individual factors include failure to manage occupational stress (especially in professions requiring intensive communication and interaction with service recipients), compassion, fatigue, gender, age, training, academic qualifications and other extrinsic factors which affect the individual but may not be directly related to the job function⁵.

Although there is basically no profession that is entirely free from burnout, professionals in medical fields, teaching, banking sector and managers generally, have higher risk level of burnout⁶. According to Bakker *et al.*⁷, it is widely accepted, today, that burnout is an organizational issue affected by the variables related to one's occupation and working environment rather than individual variables. As a result, many organizations today, are committed to reducing stressful work conditions and work related burnout by redesigning jobs and procuring technological equipment that assure optimal productivity levels with less risk to health and safety of the employees^{7, 8, 9}. Many authors have discussed issues of burnout in workplaces. Several definitions of burnout have been given, factors predisposing burnout and reduction methods/interventional techniques to reduce burnout in organizations and among different professional groups have been

extensively discussed^{7, 10-15}.

There are few works on burnout among health workers in the literature but, these are studies conducted in Europe, Asia and America^{8, 9, 16}. Nothing much on staff burnout had been reported in Nigeria. Schneider¹⁶ in his study on burnout among Australian and New Zealand health professionals, explored sociodemographic and occupational characteristics which may predict the level of burnout among these professionals. A total of 613 radiographers, 121 sonographers and 35 radiologists were surveyed. The results show that Radiographers, sonographers and radiologists had a high burnout score for emotional exhaustion (39.9 ± 8.5 , 42.2 ± 8.5 and 44.9 ± 7.1 respectively) and depersonalization (18.9 ± 5.5 , 20.3 ± 5.8 and 20.6 ± 5.6 respectively). Radiographers also had low personal achievement (30.8 ± 5.5). Radiographers and sonographers who worked > 10 hours' overtime and spent < 10% of their time training students per week had significantly higher depersonalization scores ($p < 0.05$).

Against the backdrop that there is paucity of literatures on health workers' burnout in Nigeria, this study was conceived to fill that gap. It was the purpose of this study to evaluate the evidence of burnout on ultrasound practitioners in Rivers State, Nigeria with specific objectives of identifying factors responsible for burnout and to what extent each of the factors identified contribute to the burnout.

Materials and methods

A survey of ultrasound practitioners in selected diagnostic imaging facilities in Port Harcourt and its environs was conducted between November, 2018 and March, 2019 to evaluate the evidence of burnout. A descriptive survey design was employed and selection of the facilities was done using systematic sampling technique. In all, 21 diagnostic imaging facilities situated at different locations in Port Harcourt and its environs, spanning three local government areas (i.e., Port Harcourt, Obio Akpo and Ikwerre local government areas) were sampled. Ethical clearance was obtained from Management of the facilities. Structured questionnaires were administered to ultrasound practitioners in the selected study facilities who accepted to participate in the study. A total of 50 questionnaires were administered. The questionnaire design was adapted from the Oldenburg burnout inventory by Professor Arnold Bakker and it contains basic

demographic data (age, sex, marital status, number of children and religion), time taken to get to work, experiences, practices, number of night shifts and some other relevant questions. Data were extracted from the questionnaire responses, coded and analyzed. The analysis was done using the statistical package for social sciences (SPSS) version 20. Categorical data were presented in the form of frequencies and percentages (%). Descriptive statistics was generated in simple proportions, mean, standard deviation and some of the results were presented in tables and charts

Results

Response rate/completeness of data

A total of 50 questionnaires were administered to the respondents. However, during data cleaning, 9 questionnaires were removed because of incomplete information that was vital, thus leaving 41(82% of the respondents) questionnaires for data analysis.

Socio-demographic characteristics

Table 1 shows the age distribution of the respondents (ultrasound practitioners). The mean age of the participants was 35.67 ± 21.31 years. 68.3% of the respondents were males while 31.7% were females. 15 (36.6%) of the respondents had less than 6 years' work experience, 17 (41.5%) of

them had 6 -10 years' work experience, 7 (17.1%) had 11 -15 years' work experience, 1 (2.4%) had 16 - 25 years' work experience and 1 (2.4%) had over 25 years' work experience.

Table 1: Age distribution of the ultrasound practitioners (respondents)

Age	Frequency	Percentage (%)
20-30	6	14.6
31-40	28	68.3
41 and above	7	17.1
Total	41	100

Findings

Table 2 shows the respondents experiences that indicated they had burnout. From the table one can easily see that 59% of the ultrasound practitioners suffered burnout while 41% of them did not. Figure 1 displays the factors responsible for burnout among the ultrasound practitioners studied.

They include unpleasant interactions with patients' relatives and colleagues (54%), excessive overtime work (41%) and conflict with Boss/supervisor (5%). Figure 2 shows the types of work related burnout experienced by the ultrasound practitioners studied.

Table 2: Experiences of ultrasound practitioners indicating burnout

Experiences	Strongly agree	Agree	Disagree	Strongly disagree	TOTAL
Feeling/talking negatively about the job	5 (12.2%)	4 (9.8%)	23 (56.1%)	9 (21.9%)	41 (100%)
Feeling emotionally drained	6 (14.6%)	12 (29.3%)	21 (51.2%)	2 (4.9%)	41 (100%)
Feeling worn out and weary after work	8 (19.5%)	24 (58.5%)	8 (19.5%)	1 (2.5%)	41 (100%)
Feel sickened by demands of the job	3 (7.3%)	16 (39.0%)	19 (46.4%)	3 (7.3%)	41 (100%)
The work is too demanding	8 (19.5%)	29 (70.7%)	3 (7.3%)	1 (2.5%)	41 (100%)
After work, no enough energy for my leisure activities	19 (46.4%)	10 (24.4%)	11 (26.7%)	1 (2.5%)	41 (100%)
Mean proportion	8.17 (19.9%)	15.83 (38.6%)	14.17 (34.6%)	2.83 (6.9%)	41.00 (100.00%)



Figure 1: Factors responsible for burnout among ultrasound practitioners

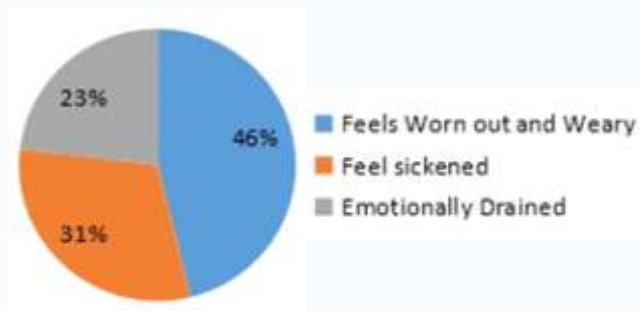


Figure 2: Evidence of burnout experienced by among ultrasound practitioners

Discussion

From the results of this study, it is clear that ultrasound practitioners suffer high level of burnout and the causes of the burnout include overtime work due to understaffing and excess workload, inability to cope with stressful interaction with patient relatives, colleagues and Boss/supervisors. These findings are in keeping with Maslach *et al.*¹, Carod-Artal *et al.*⁴, Kim *et al.*³ and Schneider, M. E.¹⁶ which identified workload, prolonged work hours, emotional stress and conflicts at work as factors which predispose burnout. Figure 1 showed, clearly, that working overtime predisposed burnout, among the study group, to a higher extent (41%) than the other causative factors hence, diagnostic imaging facilities should address the issue of understaffing. Employing more staff would enable sharing of the same workload among many staff and thus, help to minimize the incidence of burnout among the staff. Interactions with patient relatives, interaction with colleagues and conflict with Boss/supervisor contributed to the burnout suffered by the ultrasound practitioners. Improving interpersonal communication will help to minimize friction between staff and patient relative, staff and other colleagues and also between staff and

Boss/supervisor. Good interpersonal communication skill is an asset every professional should have. Effective communication in organizations help to minimize misunderstandings, friction in interpersonal relationships and conflicts among staff and between staff and supervisor.

The evidence of burnout experienced by the ultrasound practitioners studied includes feelings of being worn out and weary after work, feelings of being sick and emotionally drained. These are manifestation of mental and physical tiredness, general body weakness and fatigue. These findings are in conformity with Daugherty, J. M.², Schneider, M. E.¹⁶, Wellis, J.¹⁷ and Rai, G. S.¹⁸. Burnout may also manifest as headaches, dizziness, giddiness, pains in the arms and back (musculoskeletal disorders¹⁹), and generalized stress. These effects, if not addressed, can lead to emotional exhaustion, low work morale, low motivation, dissatisfaction, frustration, depersonalization, absenteeism and turnover^{7,10,16}.

It is vital for organizations to provide conducive working environment and to be aware of those who may be suffering from high levels of burnout and stress. A conducive working condition reduces stress. Knowledge of who is suffering from burnout and what are the likely causes can help organizations design specific programs and develop methods to reduce burnout. Level of training, years of experience, and age of the staff are indicators for determining who may likely suffer burnout⁴. In this study, 78.1% of the practitioners have ≤ 10 years' experience in ultrasound practice and 82.9% of them are aged ≤ 40 years hence, are likely to suffer burnout. Burnout is known to affect the ability of the sufferer to perform optimally. This may affect the quality of care received by the patient. If burnout is preventing patients from receiving the highest quality of care, then intervention needs to be put in place at the organizational and personal levels. Well-known intervention techniques include skills training, improved communication, job redesign, alternating shifts, workload sharing, health promotion programs, counseling programs, and team building training^{20,21}.

Conclusion

Ultrasound practitioners in Rivers State suffer high level of burnout arising from overtime work due to excess workload, inability to cope with stressful interaction with patient relatives and colleagues,

and conflict with supervisors. Overtime work and interactions with patient relatives and colleagues predisposed burnout, among the study group, to a higher extent than the other causative factors hence, issues of understaffing and interpersonal communication skills should be addressed in order to minimize the incidence of burnout.

References

- [1] Maslach, C. and Leiter, M. P. *The Truth About Burnout: How Organizations Cause Personal Stress and What to Do About It*, 1997. San Francisco, CA: Jossey-Bass.
- [2] Daugherty, J. M. Burnout: How sonographers and vascular technologist react to chronic stress. *Journal of Diagnostic Medical Sonography*. 2002; 18(6): 305-312.
- [3] Montero-Marín, J., Prado-Abril, J., Piva Demarzo, M. M., Gascon, S., García-Campayo, J. Coping with Stress and Types of Burnout: Explanatory Power of Different Coping Strategies. *PLoS ONE*. 2014; 9(2): e89090. Available at (<https://doi.org/10.1371/journal.pone.0089090>).
- [4] Carod-Artal, F., Vazquez-Cabrera, C. Burnout Syndrome in an International Setting. Sabine Bahrer-Kohler (Ed.) *Burnout for Experts: Prevention in the Context of Living and Working*, 2013. Springer Press, New York.
- [5] Kim, H. J., Shin, K. H., and Umbreit, W. T. Hotel job burnout: The role of personality characteristics. *International Journal of Hospital Management*, 2007; 26:421–434.
- [6] Felton J. S. (1998). Burnout as a clinical entity- its importance in health care workers. *Occup. Med.*, 1998; 48:237–50.
- [7] Bakker, A., Demerouti, E., Sanz-Vergel, A. Burnout and Work Engagement: The JD–R Approach. *Annual Review of Organizational Psychology and Organizational Behavior*, 2014; 1(1): 389 – 411. doi:10.1146/annurev-orgpsych-031413-091235
- [8] Ruotsalainen, J., Verbeek, J., Mariné, A. and Serra, C. Preventing occupational stress in healthcare workers. *The Cochrane Database of Systematic Reviews*, 2014; 12: CD002892.
- [9] Amiri, M., Khosravi, A., Eghtesadi, A., Sadeghi, Z., Abedi, G., Ranjbar, M., et al. Burnout and its Influencing Factors among Primary Health Care Providers in the North East of Iran. *PLoS ONE*. 2016; 11(12): e0167648.
- [10] Simon, M. Nine percent of Nurses across Europe report intent to leave their profession, with burnout among the associated personal and professional factors. *Evidence Based Nursing*. 2014; 17(2):54–55.
- [11] Ghorpade, J. Burnout and Personality: Evidence from Academia. *Journal of Career Development*, 2007; 541–559.
- [12] Ashil, N. J., and Rod, M. Burnout Processes in Non-Clinical Health Service Encounters. *Journal of Business Research*, 2011; 64, 1116 – 1127.
- [13] Ganster, D. C. and Schaubroeck, R. Work, Stress and Employee Health. *Journal of Management*, 1991; 17, 235–271.
- [14] Schuller, N. The factorial validity of the Maslach Burnout Inventory: General Survey across Occupational Groups and Nations. *Journal of Occupational and Organisational Psychology*, 2000; 73, 53–66.
- [15] Maslach, C., Schaufeli, W. B. and Leiter, M. P. Job burnout. *Ann Rev Psychol.*, 2001; 52: 397 – 422. doi: 10.1146/annurev.psych.52.1.397.
- [16] Schneider, M. E. Occupational burnout among Radiographers, Sonographers and Radiologists in Australia and New Zealand: Findings from a national survey. *Journal of Medical Imaging and Radiation Oncology*, 2017; 61(3): 304–310. doi: 10.1111/1754-9485.12547
- [17] Wellis, J. The impact of stress amongst health professionals. *Journal of Mental Health*, 2011; 20(2): 111 – 114. doi:10.3109/09638237.2011.556161.
- [18] Rai, G. S. Burnout among Long-Term Care Staff. *Administration in Social Work*, 2010; 34(3): 225 – 240. doi:10.1080/03643107.2010.480887.
- [19] Murphy, S. Work Related Musculoskeletal Disorders in Sonography. Society of Diagnostic Medical Sonography white paper series, 2018. Plano, Texas. Available at (www.sdms.org). Accessed on 11/07/2018.
- [20] Steers, R. M. *Introduction to Organizational Behaviour, Fourth Edition*, 1991. HarperCollins Publishers Inc., New York.
- [21] Cooper, C. L. and Marshall, C. S. Healthy mind, healthy organization: A proactive approach to occupational stress. *Journal of personnel psychology*, 2006; 47(4): 455 – 471.

**APPENDIX I
QUESTIONNAIRE**

INTRODUCTION: I am a staff/researcher from the Department of Radiology, University of Port Harcourt Teaching Hospital. I am carrying out a research on effects of burnout on ultrasound practitioners and humbly request that you fill this questionnaire. The information gathered from this questionnaire will be used solely for academic research purposes, and the findings of this study will enable sonographers and other healthcare practitioners to evaluate the various types of burnout, factors responsible and to proffer solutions. Your privacy and confidentiality will be ensured.

Questionnaire No:

Date:

SECTION A: GENERAL INFORMATION/SOCIO-DEMOGRAPHIC PROFILE

Characteristics	Responses
Age	
20-30	<input type="text"/>
31-40	<input type="text"/>
41 and above	<input type="text"/>
Sex of respondent	
Male	<input type="text"/>
Female	<input type="text"/>
Marital Status of Respondents	
Single	<input type="text"/>
Married	<input type="text"/>
Separated	<input type="text"/>
Engaged	<input type="text"/>
Do you have children	
Yes	<input type="text"/>
No	<input type="text"/>

Number of Children	
1	<input type="text"/>
2	<input type="text"/>
3	<input type="text"/>
4	<input type="text"/>
Many	<input type="text"/>
How long have you practiced medical ultrasound?	
0-5 years	<input type="text"/>
6-10 years	<input type="text"/>
11-15 years	<input type="text"/>
16-25 years	<input type="text"/>
above 25 years	<input type="text"/>
How long have you practiced in your current employment	
0 - 5 years	<input type="text"/>
6-10 years	<input type="text"/>
11-15 years	<input type="text"/>
16-25 years	<input type="text"/>
above 25 years	<input type="text"/>

Section B: General Questions

	Responses
I always find new and interesting aspects in my work	
Strongly agree	<input type="text"/>
Agree	<input type="text"/>
Disagree	<input type="text"/>
Strongly Disagree	<input type="text"/>
There are days when I feel tired before I arrive at work	
Strongly agree	<input type="text"/>
Agree	<input type="text"/>
Disagree	<input type="text"/>
Strongly Disagree	<input type="text"/>
The distance to my place of work is too far	
Strongly agree	<input type="text"/>
Agree	<input type="text"/>
Disagree	<input type="text"/>
Strongly Disagree	<input type="text"/>
It happens more and more often that I talk about my work in a negative way	
Strongly agree	<input type="text"/>
Agree	<input type="text"/>
Disagree	<input type="text"/>
Strongly Disagree	<input type="text"/>
During my work, I often feel emotionally drained	
Strongly agree	<input type="text"/>
Agree	<input type="text"/>
Disagree	<input type="text"/>
Strongly Disagree	<input type="text"/>
After my work, I usually feel worn out and weary	
Strongly agree	<input type="text"/>
Agree	<input type="text"/>
Disagree	<input type="text"/>
Strongly Disagree	<input type="text"/>
Sometimes I feel sickened by my work tasks	
Strongly agree	<input type="text"/>
Agree	<input type="text"/>
Disagree	<input type="text"/>
Strongly Disagree	<input type="text"/>
This feeling is worsened by interaction with patient's relatives	
Strongly agree	<input type="text"/>
Agree	<input type="text"/>
Disagree	<input type="text"/>
Strongly Disagree	<input type="text"/>

Over time, one can become disconnected from this type of work	
Strongly agree	<input type="text"/>
Agree	<input type="text"/>
Disagree	<input type="text"/>
Strongly Disagree	<input type="text"/>
I find interacting with my colleagues to be quite stressful	
Strongly agree	<input type="text"/>
Agree	<input type="text"/>
Disagree	<input type="text"/>
Strongly Disagree	<input type="text"/>
I work too much overtime	
Strongly agree	<input type="text"/>
Agree	<input type="text"/>
Disagree	<input type="text"/>
Strongly Disagree	<input type="text"/>
Conflict with my boss/supervisor makes it difficult for me to love my job	
Strongly agree	<input type="text"/>
Agree	<input type="text"/>
Disagree	<input type="text"/>
Strongly Disagree	<input type="text"/>
After working, I have enough energy for my leisure activities	
Strongly agree	<input type="text"/>
Agree	<input type="text"/>
Disagree	<input type="text"/>
Strongly Disagree	<input type="text"/>
This is the only type of work that I can imagine myself doing	
Strongly agree	<input type="text"/>
Agree	<input type="text"/>
Disagree	<input type="text"/>
Strongly Disagree	<input type="text"/>
Usually, I can manage the amount of my work well	
Strongly agree	<input type="text"/>
Agree	<input type="text"/>
Disagree	<input type="text"/>
Strongly Disagree	<input type="text"/>
I feel more and more engaged in my work	
Strongly agree	<input type="text"/>
Agree	<input type="text"/>
Disagree	<input type="text"/>
Strongly Disagree	<input type="text"/>
When I work, I usually feel energized	
Strongly agree	<input type="text"/>
Agree	<input type="text"/>
Disagree	<input type="text"/>
Strongly Disagree	<input type="text"/>