

## Article

# Burnout and presenteeism among healthcare workers in Nigeria: Implications for patient care, occupational health and workforce productivity

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## Abstract

**Background:** Burnout and presenteeism are two emerging occupational health challenges which share same locus among healthcare workers, and the trend is rising. We aim to define the magnitude of burnout and presenteeism among frontline members of the health workforce and explore any correlation between the two in order to provide empirical data from our socioeconomic and geographical background.

**Design and Methods:** We used self-administered questionnaire to conduct a cross-sectional study among the physicians and nurses in a regional trauma centre in Enugu, Eastern Nigeria; with the respondents selected by stratified random sampling. The Oldenburg burnout inventory and Stanford presenteeism scale were used to measure burnout and presenteeism respectively, while the 2-item patient-health questionnaire (PHQ-2) was used to screen for depression. The level of statistical significance was determined by a p value of <0.05.

**Results:** Among the healthcare workers surveyed (n=155); 34 (21.9%) were physicians, while 121 (78.1%) were nurses. Burnout prevalence was 69%. Burnout was associated with self-rated health status and length of years in professional service but not the occupation or depression screen status of the worker. Sixty-two healthcare workers (40%) screened positive for depression. A positive screen for depression was the only factor that had significant association with lower presenteeism scores (p=0.002). The mean presenteeism scores had strong negative correlation with both the exhaustion (p<0.001) and disengagement (p<0.001) domains of burnout.

**Conclusion:** Burnout is high among the healthcare workers and correlates with presenteeism scores. The mental health of the workforce greatly impaired their productivity.

## Introduction

There has been mounting evidence showcasing high burnout and presenteeism in the healthcare workforce with adverse public health consequences afflicting both the patients they cater for and the workers themselves.

Burnout was described by Freudenberg in 1974 as chronic stress due to intense work demands in the setting of inadequate resources.<sup>1</sup> The healthcare industry owing to the interplay between emotionally intense interactions, workdays, workload and demanding pace is burnout-prone<sup>2</sup> with the highest prevalence credited to physicians and nurses. Burnout among physicians and nurses correlate with poor outcome such as medical errors,<sup>3</sup> hospital-acquired infections,<sup>4</sup> lower patient satisfaction,<sup>5</sup> and mortality.<sup>6</sup> The implications of burnout for the occupational health of healthcare workers have been limited in the discourse which has seemingly paid greater attention to patient wellbeing, despite its well documented association with poor mental and physical health of the workforce.<sup>7,8</sup>

Presenteeism is a work-related behaviour of 'showing up for work when one is ill', such that despite being physically present at their jobs such employees frequently manifest decreased productivity. This concept of presenteeism became prominent in the new millennium gaining significant traction from the work of Aronsson *et al.* on workforce behavior related to changes in the sickness compensation system in Sweden.<sup>9</sup> Health impairment often leads to productivity loss in the form of both absenteeism and presenteeism. In the recent it has come to be known that presenteeism is more prevalent and more pernicious of the two, accounting for greater productivity loss than absenteeism. Presenteeism is rife among healthcare workers, especially physicians and nurses.<sup>9,10</sup> It invariably affects the quality of care they

## Significance for public health

Despite the high prevalence of burnout and presenteeism among healthcare workers their impact on the productivity of the workforce has not received adequate attention. Much of the work on burnout and presenteeism has been directed at their prevalence and associated demographics, while a few addressed their potential for direct harm or suboptimal care to patients. However, these earlier research perspectives provide insufficient resource for health economists and public health administrators. Accordingly, we chose to explore the relationship between the twin problems of high burnout and presenteeism among healthcare workers and their impact on productivity. We have reported our finding of an inverse correlation between burnout domains and productivity of the health workers. Furthermore, the revelation of 40% positive screen for depression raises serious concern regarding the mental health of the healthcare providers as it portends grave public health implications for themselves and the patients they cater for.

provide to patients and could constitute public health hazard.<sup>11,12</sup> Two main tendencies have characterized presenteeism research: i) the measurement of its occurrence and associated medical, demographic and organizational factors; and ii) the measurement of its consequences, such as impact on productivity. The latter, as in the present study has been facilitated by several self-report instruments that are used to measure the impact of presenteeism on the productivity of the workforce such as the Stanford presenteeism scale (SPS-6), Endicott Work Productivity Scale, Well-Being Assessment for Productivity scale, Work Instability Scale, and Work limitations questionnaire. We consider it relevant to measure the productivity of health workers who show up for work when they are ill. While most of the research on presenteeism had been conducted by organizational psychologists, management and health economics researchers an ounce of input by clinical researchers in a phenomenon that is ravaging its workforce in the main is considered worthwhile.

Burnout and presenteeism are two emerging occupational health challenges which share same locus among healthcare workers and other human service professionals, and the trend is rising. Nigeria is in Sub-Saharan Africa where the health workforce is unevenly matched against the disease burden, with high job demand and low job resources. Here too, literature on burnout and presenteeism in healthcare is too bare to create awareness towards addressing these two phenomena. We aim to define their magnitude of burnout and presenteeism among frontline members of the health workforce and explore any correlation between them in order to provide empirical data on the two phenomena among healthcare workers from our socioeconomic and geographical background.

## Design and Methods

### Sample size determination

According to a previous study of burnout among health workers in Nigeria which put burnout prevalence at 4.7%:<sup>13</sup>

$$\text{Sample size} = \frac{(z_{1-\alpha/2})^2 P(1-p)}{d^2}$$

Where  $z_{1-\alpha/2}$  is the standard normal variate at 5% type 1 error,  $p$  is the prevalence from a previous study,  $d$  is absolute error chosen as 5%:

$$\text{Sample size} = \frac{1.96^2 \times 0.047(1 - 0.047)}{0.05^2} = 69$$

Add 10% for attrition, minimum total sample size for the survey is 76 workers.

### Study population

The health workers in our sample are physicians and nurses who are engaged in clinical duties in a regional burns and trauma centre established in 1973 in Enugu, Eastern Nigeria. The tertiary care facility trains resident doctors in anaesthesia, orthopaedics and plastic surgery, many of whom are supernumerary from other tertiary healthcare institutions in the country. The institution also

hosts schools of post-basic training in orthopaedic nursing, burns and plastic nursing as well as orthopaedic cast technology. Nurse tutors are not engaged in clinical nursing roles and as such were not considered in the study.

### Study design and sampling technique

This is a cross-sectional, institution-based study with the respondents selected by stratified random sampling. The physicians were stratified by specialty into anaesthesia, orthopaedics, plastic surgery, general practice, radiology and pathology, while the nurses were stratified by workstation into perioperative nursing, anaesthetic nursing, accidents/emergency, outpatient clinics, acute burns, chronic burns, orthopaedic nursing, intensive care nursing and nursing administration. Proportionate allocation using a sampling fraction of 50% was applied in each stratum prior to simple random sampling. In the end 195 potential respondents; 36 physicians and 159 nurses were selected for the survey, from a total of 318 nurses and 71 physicians.

### Procedure

This survey was conducted between January and February 2020. Request for verbal informed consent was incorporated into each questionnaire and only consenting health workers collected and returned the self-administered pen-and-paper questionnaire. The demographic characteristics sought in the survey were the respondents' occupation, age, gender, marital status, and years in service. The respondents' health status was assessed using the 5-point Likert-type self-reported health item. The 2-item Patient-health questionnaire (PHQ-2) depression module was used to screen for depression in the respondents, while the impact on presenteeism on the healthcare worker's productivity was measured with the SPS-6 tool. The Oldenburg burnout inventory was used to measure burnout. Several rounds of visit were made by the research assistants over a period of two weeks to enhance the coverage and completion rate.

### Measurement instruments description

*Six-item Stanford Presenteeism Scale (SPS-6).*<sup>14</sup> This is a validated questionnaire, self-reporting the impact of health problems on individual workers productivity when they present to work ill. Each item is scored over a range of 1 to 5; with the options as strongly disagree, somewhat disagree, uncertain, somewhat agree, strongly agree. Of the six items, items 1, 3 and 4 relate to ability to avoid distraction in the work process. They are negatively worded and are reverse-scored such that "I strongly agree" is scored 1, indicating maximum interference with work due to distraction. Items 2, 5 and 6 investigate the ability to complete work and are thus indices of work outcome. They are positively worded and direct-scored such that "I strongly agree" is scored 5, implying that the respondent's state of health does interfere maximally with work. The sum of the six items scores produces the total SPS-6 score. A high SPS-6 score indicates a high level of presenteeism or a greater ability to concentrate on and accomplish work despite health problems while a lower score connotes that the respondent's work was more affected by the behaviour.

*Oldenburg burnout inventory (OLBI).*<sup>2</sup> The Oldenburg burnout inventory is a 16-item survey with positively and negatively framed items which measures burnout with two dimensions: exhaustion domain and disengagement domain. Results from several studies showed that this two-factor construct fitted better to the data of several occupational groups than alternative factor structures. Each of these two dimensions is represented by 8 items: with four in each dimension being positively worded and four neg-

actively worded. Each item is scored over a range: 1, strongly agree; 2, agree; 3, disagree; 4, strongly disagree. Reverse scoring is applied to the items marked with an 'R' in the instrument such that strongly agree is scored 4 and strongly disagree is scored 1. In all instances higher scores indicate higher exhaustion and disengagement.

*Two-item patient-health questionnaire depression module (PHQ-2).* This depression screener which asks two simple questions about mood and anhedonia may rule out, but not definitively diagnose depression. With each of the two questions scored 0-3, the PHQ-2 score can range from 0 to 6 for each respondent. The PHQ-2 is a validated ultra-brief screening tool for depression and has good overall accuracy relative to the 9-item patient health questionnaire (PHQ-9) for discriminating between cases and non-cases of depression.<sup>15</sup> Despite the greater specificity of the PHQ-2 threshold of  $\geq 3$ , the PHQ-2 threshold of  $\geq 2$  consistently displayed excellent sensitivity with good specificity and has thus been recommended as optimal for depression screening.<sup>15,16</sup>

### Data analysis

Data entry and analysis were done using IBM, Statistical Package for Social Sciences ver. 25. Continuous variables were summarized using mean and standard deviation while categorical variables were summarized using frequencies and proportions. Chi square test of statistical significance, Correlation and Student's *t*-test were used in the analysis and the level of statistical significance was determined by a *p* value of  $<0.05$ .

## Results

One hundred and fifty-five completed questionnaires were returned out of one hundred and ninety-five sampled healthcare workers, yielding a response rate of 79.5% with 34 out of 36 physicians and 121 out of 159 nurses returning duly completed questionnaires. Among the healthcare workers surveyed ( $N=155$ ); 21.9% (34) were physicians, while 78.1% (121) were nurses. The nurses were predominantly females, 107 (88.4%) while the physicians were mostly males, 32 (94.1%).

The mean age of the respondents was  $40.3 \pm 9.1$  years and they were predominantly females; 109 (70.3%). Majority of the respondents were married; 124 (80%). Ninety-two (59.4%) of the respondents had worked for at least 10 years (Table 1).

Table 2 shows that one hundred and seven healthcare workers (69%) had overall burnout. Sixty-two healthcare workers (40%) screened positive for depression using the PHQ-2 threshold of  $\geq 2$ . We also computed the depression screen status using a higher PHQ-2 threshold ( $\geq 3$ ) and found a positive screen in 35 (22.6%) healthcare workers. One hundred and thirty-nine healthcare workers (89.7%) have good general health. The mean presenteeism score of the respondents was  $22.1 \pm 5.1$  (Range 6.0-30.0). The two respondents with the lowest possible presenteeism score (SPS-6=6) had a positive screen for depression (PHQ-2, 2 and 6).

Burnout was associated with self-rated health status and length of years in professional service and but not occupational cadre of the respondents and depression screen status (Table 3). Only a positive screen for depression had significant association with lower presenteeism scores ( $p=0.002$ ). The respondents with poor self-rated health manifested lower presenteeism scores but this was not statistically significant ( $p=0.08$ ). The healthcare worker's demographic and job characteristics did not reveal any association with productivity loss on account of working ill, when the groups are compared (Table 4). The healthcare workers with a positive screen

for depression, poor self-rated health and those who were married manifested a significantly higher disengagement domain score of burnouts (Table 5). There was significant association between the burnout exhaustion domain scores of the healthcare workers and their age, marital status, years in professional service and self-rated health, but not depression screen status (Table 6).

The mean presenteeism scores revealed a strong negative correlation with both the exhaustion and disengagement domains of burnout (Table 7).

**Table 1. Socio-demographic characteristics of respondents.**

Variable	Frequency (n=155)	Percent (%)
Age of respondents		
Mean ( $\pm$ SD)	40.3 $\pm$ 9.1	
Age of respondents in groups		
<35 years	43	27.7
35-39 years	35	22.6
40-44 years	25	16.1
$\geq 45$ years	52	33.5
Gender		
Male	46	29.7
Female	109	70.3
Marital status		
Married	124	80.0
Single	31	20.0
Professional status of respondent		
Physician	34	21.9
Nurse	121	78.1
Years of professional service		
<10 years	63	40.6
$\geq 10$ years	92	59.4

**Table 2. Outcome variables among the respondents.**

Variable	Frequency (n=155)	Percent (%)
Burn out grouping		
Non burnout group	15	9.7
Disengaged group	11	7.1
Exhausted group	22	14.2
Burnout group	107	69.0
Burnout		
Yes	107	69.0
No	48	31.0
Self-rated health		
Excellent	37	23.9
Very good	48	31.0
Good	54	34.8
Fair	14	9.0
Poor	2	1.3
Depression		
Yes	62	40.0
No	93	60.0
Stanford Presenteeism scale		
Mean ( $\pm$ SD)	22.1 $\pm$ 5.1	
	Range; 6.0 -30.0	

## Discussion

The burnout prevalence among the healthcare workers was 69% and poor self-rated health and longer years in professional service were the associated factors to burnout. A burnout prevalence of 52.9% had been reported among Iranian healthcare workers by Zarei *et al.*<sup>17</sup> They used the Maslach burnout inventory (MBI) to measure burnout and applied the concomitant presence of high burnout in all three dimensions (high emotional exhaustion

(EE) and depersonalization (DP) along with low personal accomplishment (PA) as their criteria for burnout diagnosis. With the finding that DP, EE and PA scores were high in 90.5%, 55.3% and 98.5% of their respondents, some researchers may have reported a prevalence of 90.5% on account of the score in the domain of DP alone. This high variability in the qualification criteria for burnout has implication for the prevalence rate reported in several studies as highlighted in a systematic review by Doulougeri *et al.*<sup>18</sup> The job demand–resources model of burnout stipulates that both high

**Table 3. Factors associated with burnout among the respondents.**

Variable	Burnout (n=155)		$\chi^2$	p
	Yes n (%)	No n (%)		
Age of respondents				
<42 years	58 (63.7)	33 (36.3)	2.892	0.089
≥42 years	49 (76.6)	15 (23.4)		
Gender				
Male	33 (71.7)	13 (28.3)	0.224	0.636
Female	74 (67.9)	35 (32.1)		
Marital status				
Married	90 (72.6)	34 (27.4)	3.652	0.056
Single	17 (54.8)	14 (45.2)		
Professional status of respondent				
Physician	24 (70.6)	10 (29.4)	0.049	0.824
Nurse	83 (68.6)	38 (31.4)		
Depression				
Yes	46 (74.2)	16 (25.8)	1.288	0.256
No	61 (65.6)	32 (34.4)		
Years of professional service				
<10 years	37 (58.7)	26 (41.3)	5.200	0.022
≥10 years	70 (76.1)	22 (23.9)		
Self-rated health				
Good	92 (66.2)	47 (33.8)	5.099	0.024
Poor	15 (93.8)	1 (6.3)		

**Table 4. Comparison of mean presenteeism scores and that of other variables.**

Variable	(n=155)	Presenteeism mean (SD)	Student's <i>t</i> -test	p
Age of respondents				
<42 years	91	21.9±5.1	0.670	0.504
≥42 years	64	22.4±5.0		
Gender				
Male	46	21.7±5.6	0.571	0.569
Female	109	22.2±4.8		
Marital status				
Married	124	21.9±5.1	0.912	0.363
Single	31	22.8±5.1		
Professional status of respondent				
Physician	34	22.6±5.4	0.678	0.499
Nurse	121	22.0±5.0		
Depression				
Yes	62	20.6±5.5	3.097	0.002
No	93	23.1±4.5		
Years of professional service				
<10 years	63	21.8±5.2	0.616	0.539
≥10 years	92	22.3±5.0		
Self-rated health				
Good	139	22.3±5.0	1.763	0.080
Poor	16	20.0±5.0		

**Table 5. Comparison of mean disengagement scores and that of other variables.**

Variable	(n=155)	Disengagement mean (SD)	Student's <i>t</i> -test	p
Age of respondents				
<42 years	91	2.2±0.4	1.372	0.172
≥42 years	64	2.3±0.4		
Gender				
Male	46	2.3±0.3	1.426	0.156
Female	109	2.2±0.4		
Marital status				
Married	124	2.3±0.4	2.259	0.025
Single	31	2.1±0.4		
Professional status of respondent				
Physician	34	2.3±0.4	1.117	0.266
Nurse	121	2.2±0.4		
Depression				
Yes	62	2.4±0.4	2.467	0.015
No	93	2.2±0.4		
Years of professional service				
<10 years	63	2.2±0.4	1.876	0.063
≥10 years	92	2.3±0.4		
Self-rated health				
Good	139	2.2±0.4	2.669	0.008
Poor	16	2.5±0.5		

**Table 6. Comparison of mean exhaustion scores and that of other variables.**

Variable	(n=155)	Exhaustion mean (SD)	Student's <i>t</i> -test	p
Age of respondents				
<42 years	91	2.5±0.5	2.803	0.006
≥42 years	64	2.7±0.4		
Gender				
Male	46	2.5±0.5	1.628	0.106
Female	109	2.6±0.4		
Marital status				
Married	124	2.6±0.4	1.944	0.054
Single	31	2.5±0.4		
Professional status of respondent				
Physician	34	2.5±0.5	0.938	0.350
Nurse	121	2.6±0.4		
Depression				
Yes	62	2.6±0.5	1.111	0.268
No	93	2.6±0.4		
Years of professional service				
<10 years	63	2.5±0.5	2.619	0.010
≥10 years	92	2.7±0.4		
Self-rated health				
Good	139	2.6±0.4	2.710	0.008
Poor	16	2.9±0.4		

job demand and low job resources are determinants for the development of burnout in workers.<sup>19</sup> Accordingly socio-economic environments with high job demand and low access to job resources as obtains in Sub-Saharan Africa, with the prolonged armed conflict and strife in the Middle-east are expected to promote high burnout among the health workforce compared to the moderate burnout in health workers in Europe.<sup>20</sup> This position is supported by the findings of physician burnout across global regions.<sup>21</sup> The comparative prevalence of burnout among physicians and nurses has yielded conflicting reports with a systematic review in the African region showing higher burnout among nurs-

**Table 7. Correlation of presenteeism scores with disengagement and exhaustion.**

Variable	(n=155)	Pearson correlation r	p
Correlation of presenteeism with			
Disengagement	155	- 0.475	<0.001
Exhaustion	155	- 0.350	<0.001



es,<sup>22</sup> while a review among United States healthcare professionals indicated higher prevalence among physicians.<sup>23</sup> Our study however observed no significant difference in burnout between the two professional groups ( $p=0.824$ ). Among Iranian health workers being single, less experienced employees, older age and being a physician were predictors of burnout, and thus more likely to suffer high levels of burnout.<sup>17</sup>

We did not find any association between overall burnout and depression screen status of the respondents. However, in considering the domains of burnout independently, disengagement was significantly associated with a positive screen for depression, poor self-rated health and being married. On the other hand, exhaustion was significantly higher with poor self-rated health, being married, younger age and longer years of work experience, but not a positive screen for depression. Ahola *et al.* had examined the relationship between burnout and depression among health workers (dentists) in a longitudinal study and concluded that the two develop in tandem and cluster together.<sup>24</sup> The close relationship between burnout and depression has been supported by other studies in spite of inconsistencies in their temporal relationship.<sup>25-27</sup> Nevertheless burnout is not synonymous with depression, and clear differences exist.<sup>28,29</sup>

We found that as much as 40% of the healthcare providers screened positive for depression. In a study of Greek health care workers using the MBI measure of burnout and the 13-item Beck depression subscale to screen for depression a 14.30% prevalence for depression was found, and while emotional exhaustion was positively correlated with depression ( $\beta=0.09$ ,  $p=0.00$ ), personal accomplishment was negatively correlated with depression ( $\beta=-0.08$ ,  $p=0.00$ ) but no correlation was found between depersonalization and depression.<sup>20</sup> Depression is a common mental disorder in the population and healthcare workers have been known to manifest higher levels of depression and anxiety than the general population.<sup>30</sup> Depression is a leading cause of disease burden worldwide and a major public health concern, often co-existing with other chronic diseases to worsen their associated health outcomes. There is evidence that physicians with a positive screen for depression are at increased risk for medical errors,<sup>31</sup> with attendant consequences for patient care and safety. Furthermore, it is estimated that as much as 81% of the lost productive time costs in workers with depression is attributed to reduced performance while at work (presenteeism), as against work absence.<sup>32</sup>

In our study a positive screen for depression had strong association with lower presenteeism scores which is consistent with the relationship between depression and productivity loss in several studies. Beck *et al.* studied depressed patients on antidepressant medication using the Patient Health Questionnaire 9-item screen (PHQ-9) as a measure of depression symptom severity; and the Work Productivity and Activity Impairment questionnaire as a measure of presenteeism and found that depression symptoms were associated with lower productivity ( $p<0.001$ ) and that self-rated health of the respondents was also associated with a loss of productivity ( $p=0.045$ ).<sup>33</sup> Similarly, Sanderson *et al.* reported that the SPS-6 discriminated between workers with depression and those without depression, with the former having lower presenteeism scores ( $19.3\pm4.5$  versus  $23.4\pm5.1$ ).<sup>34</sup> Furthermore, Burton *et al.* in their study on the impact of various medical conditions on presenteeism using the Work Limitations Questionnaire found that

depression was the single health condition associated with the highest degree of self-reported work limitation in the workforce, adversely impacting all four domains of work limitation; with work limitations in time management (odds ratio [OR]=2.05), interpersonal/mental functioning (OR=2.50), physical tasks (OR=1.49), and overall output (OR=2.24).<sup>35</sup> In the same study hypertension, asthma and cancer were not associated with a significantly increased likelihood of any of the four types of productivity impairment. Evidence from the works of Beck *et al.*<sup>33</sup> and Burton *et al.*<sup>35</sup> reveals that depression factor was associated with greater impact on presenteeism than self-rated health or the presence of other medical conditions. This trend was manifest among the health workers we surveyed whereby respondents with poor self-rated health produced lower presenteeism scores, but this was not statistically significant ( $p=0.08$ ) in contrast to the more pronounced effect of depression ( $p=0.002$ ). Beyond physical fatigue, deficits in mood, behavioural and cognitive functioning manifesting as apathy, general discontent, loss of interest, lack of concentration and slowness in activity are all components of depression and contribute to the profound productivity loss commonly observed.

Owing to the high prevalence of both presenteeism and burnout among healthcare workers it was considered necessary to look at these two phenomena in relation to one another. Thun *et al.* explored this relationship in a cross-sectional study among physicians and found a significant association between them.<sup>36</sup> Similarly, Demerouti *et al.* examined the relationship between burnout and presenteeism among nurses in a longitudinal study and found that presenteeism would lead to both exhaustion and depersonalization (burnout) over time.<sup>37</sup> The teaching profession, like healthcare, shares the common predilection for both burnout and presenteeism and an earlier study had explored the relationship between the two phenomena in that profession and found a significant negative correlation between SPS-6 total score and all the three dimensions of burnout.<sup>38</sup> The mean presenteeism scores in our study have similarly demonstrated a strong negative correlation with both the exhaustion and disengagement domains of burnout using the Oldenburg burnout inventory.

## Limitations

A limitation to this study is the lack of data on the respondent's co-morbidities that might contribute to productivity impairment and low SPS-6 score. Furthermore, the PHQ-2 being a screening tool for depression could have over-estimated depression prevalence which may only be confirmed after further clinical evaluation.

## Conclusion

Burnout is high among the healthcare workers, with greater prevalence among workers with poor health status and those with longer years of experience. The mental health of the workers was greatly impaired by depression and this was associated with low presenteeism score. There was a strong negative correlation between burnout and presenteeism score.

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