

Evaluation of Physician Burnout Syndrome Among Pediatric Resident Doctors in Nigeria

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Abstract

Background: Medical practice and education are known to lead to emotional and mental exhaustion as well as physical tiredness among healthcare workers. This study analyzed the prevalence and factors associated with physician burnout syndrome (PBS) among resident doctors in paediatric across Nigeria. **Methodology:** This cross-sectional study was conducted among paediatric resident doctors across Nigeria using the public welfare questionnaire of the American Welfare Association comprising 28 questions related to sleep affectation, energy levels, personal relationships, professional relationships, quality of job environment, and work satisfaction. **Results:** 117 residents were enrolled with varying degrees of burnout. The mean PBS score was 75.3 ± 19.1 with minimum and maximum scores of 32 and 125, respectively. The prevalence of Grades 0, 1, 2, 3, and 4 PBSs was 3.7%, 4.9%, 28.1%, 42.7%, and 18.3%, respectively, while 63.4% of respondents exhibited signs of symptomatic PBS. The residents' rank ($P = 0.05$) was significantly associated with the prevalence of symptomatic PBS, while age ($P = 0.567$), gender ($P = 0.755$), number of years in training ($P = 0.411$), marital status ($P = 0.173$), number of children ($P = 0.974$), religion ($P = 0.09$), and prior knowledge of PBS ($P = 0.719$) had no association with the development of symptomatic PBS among surveyed resident doctors. **Conclusion:** The prevalence of PBS is high among paediatric resident doctors. There is an urgent need for the postgraduate medical colleges in collaboration with the Ministry of Health to formulate programmes that will help to balance social and professional lives among paediatric resident doctors in Nigeria.

Keywords: Burnout, Nigeria, paediatric, physicians

INTRODUCTION

Physician burnout can be defined as a syndrome characterized by a loss of enthusiasm for work (emotional exhaustion), a feeling of cynicism (depersonalization), and a low sense of personal accomplishment.^[1] This syndrome has been an area of concern for decades and a significant amount of research has identified both its causes and prospective interventions to prevent or diminish its effect.^[2]

A recent study in the United States (U.S) analyzed burnout and satisfaction with work–life balance and reported that 45.8% of physicians are considered to be experiencing at least one symptom of burnout with an overall burnout rate of 35.2% among the U.S physicians.^[1] Burnout also impacts physicians across different specialties, however, it varies by career stage and the mid-career stage (which refers to physicians in practice between 11 and 20 years) appears to be

a particularly challenging time for physicians.^[2,3] Common drivers of physician burnout include paperwork, feeling undervalued, frustrations with referral networks, medicolegal issues, and challenges in finding work–life balance.^[4,5] Identifying and addressing the origins of physician burnout are essential because new research shows that symptoms of physician burnout can be connected with increased rates of medical errors, riskier prescribing patterns, and lower patient adherence to chronic disease management plans among others.^[6,7] To benefit the individual physician and enhance their

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delivery of high-quality health care, it has been recommended that health systems should routinely measure physician wellness.^[6] Reducing physician burnout is therefore critical to achieving the goals of remodeling health-care systems and improving health-care delivery anywhere in the world.^[2]

Some research have been carried out on physician burnout in different parts of Nigeria.^[8-11] Yet, there is a paucity of data on a national scale. Despite its harmful consequences for physicians, burnout remains unnoticed among Nigerian health professionals.^[12] Although middle career appears to be a particularly challenging period for physicians, recent studies also show that young physicians experience burnout much more than their senior colleagues and that the onset of the syndrome probably dates back to the phase of residency training.^[13,14] This study, therefore, aims to analyze the factors and prevalence of physician burnout among pediatric residents across Nigeria.

METHODOLOGY

This was a cross-sectional study conducted among paediatric residents from tertiary hospitals, i.e., teaching hospitals and federal medical centers across Nigeria, attending a revision course organized by the National Postgraduate Medical College at the University of Benin Teaching Hospital (UBTH) from February 19, 2018, to March 3, 2018. The UBTH is a tertiary health facility that offers health-care services to the inhabitants of Edo state and its environs. It is also one of the three institutions used for revision and update courses for resident doctors across all specialties in Nigeria prior to sitting for the part I and part II National and West African Postgraduate College examinations in their respective faculties.

A self-administered validated questionnaire adapted with minor modifications from the public welfare questionnaire of the American Welfare Association was used for data collection.^[15,16] The change included the insertion of a section that collected information on the demographic characteristics of respondents. These included (i) age categorized as 21–30, 30–40 and >40 years; (ii) sex of respondents categorized as male and female; (iii) marital status grouped into single and married; (iv) number of children classified into none, 1–3, and > 3; (v) number of years in training categorized as 1st, 2nd–4th, and ≥5th year; (v) level of residency grouped as junior and senior residents; and (vi) religion of respondents categorized as Christianity and others (i.e., Islam, pagans, traditionalist, etc.). It also assessed respondent's prior

knowledge of physician burnout syndrome (PBS) (classified as yes or no) and source of this information where applicable.

The second section of the questionnaire used 28 questions to measure physician burnout in the respondents. It assessed difficulties in the activities of daily living in areas such as sleep affectation, energy levels, personal relationships, professional relationships, quality of job environment, and work satisfaction. The responses were assessed using a 5-point Likert scale, i.e., never, rarely, sometimes, often, and always. Points were awarded to each question assessing burnout based on these responses as follows: 1 point for never, 2 points for rarely, 3 points for sometimes, 4 for often, and 5 points for always. The highest score obtainable is 140. These responses were quantified and further re-categorized as Grade 0 for scores 28–38 (no stress and no professional burnout), Grade 1 for scores 38–50 (low stress and no professional burnout), Grade 2 for scores 51–70 (moderate stress and fair chance of professional burnout), Grade 3 for scores 71–90 (high stress and signs of early professional burnout), and Grade 4 for scores ≥91 (dangerous stress and advance professional burnout).^[17,18] Respondents with scores that fell within Grade 3 and 4 were considered as exhibiting signs of burnout suggestive of symptomatic PBS [Table 1].

All the data obtained were recorded and analyzed using the Statistical Package for the Social Sciences version 18.0. Continuous variables were reported as mean, median, and standard deviation, while categorical variables were reported as the number or percentage of subjects. The Pearson's and Fisher's exact Chi-square tests were used where appropriate to determine the association between sociodemographic characteristics and burnout syndrome in respondents. Statistical significance was set at $P \leq 0.05$.

RESULTS

Characteristics of respondents

A total of 117 resident doctors gave consent to be enrolled in the study and completed the questionnaire. Eighty-two successfully completed the questionnaire without significant missing data showing a recruitment fraction of 70%. Only 82 respondents were included in the PBS analysis. The majority (80.5%) were within the 31–40 years with an average age of and a male-to-female ratio of 1:2. Approximately (68%) and (32%) were junior and senior residents, respectively, with (13.4%), (63.4%), and (23.2%) been in their first year, second to the fourth year, and ≥fifth year of residency training, respectively.

Table 1: Grading and interpretation of burnout score among respondents

Degree	Grade	Burnout score range	Burnout score interpretation
Non symptomatic	Grade 0	28-38	No stress and professional burnout
	Grade 1	38-50	Low stress and no professional burnout
	Grade 2	51-70	Moderate stress and fair chances of burnout
Symptomatic	Grade 3	71-90	High stress and signs of early burnout
	Grade 4	≥91	Dangerous stress and advance burnout

Most (81.7%) were married and had 1–3 children (65.8%). All except nine respondents practice Christianity (92.7%). About 9 in 10 of the respondents (90.2%) had prior knowledge of PBS, and the source of information of PBS was from colleagues at work in 40.2% of cases. Other knowledge sources were from friends in medical school (15.8%), Internet and electronic media (28.1%), journal publications (12.2%), and others (3.7%) [Table 2].

Prevalence and predictors of physician burnout syndrome among pediatric residents

All surveyed residents had at least one or more features of PBS with most encountering these features frequently in their daily work activities. The prevalence of Grade 0, 1,

and 2 PBS was (3.7%), (4.9%), and (28.1%), respectively, while (42.7%) and (18.3%) of respondents had Grades 3 and 4 PBS. The overall PBS score among all surveyed residents was 75.3 ± 19.1 out of the highest obtainable score of 140. The minimum and maximum scores attained were 32/140 and 125/140, respectively. The mean PBS was significantly higher in junior (78.6 ± 17.9) compared to senior resident doctors (68.9 ± 20.6); $P = 0.033$ [Table 3]. There was however no statistically significant difference in the mean PBS score when stratified by age of respondents; 21–30 years (75.2 ± 17.0) versus 30–40 years (75.1 ± 19.2) versus > 40 years (77.6 ± 23.1), $P = 0.940$, sex of respondents; male (75.5 ± 16.1) versus female (74.5 ± 20.4), $P = 0.828$, number of years in training; first year (75.2 ± 16.7) versus 2nd–4th years (78.9 ± 18.1) versus $\geq 5^{\text{th}}$ year (69.1 ± 21.3), $P = 0.160$, marital status; single (76.2 ± 11.1) versus married (75.2 ± 20.1), $P = 0.877$, number of children; none (79.4 ± 17.9) versus 1–3 children (75.1 ± 19.4) versus > three children (57.0 ± 20.7), $P = 0.577$, religion; Christianity (76.0 ± 19.1) versus others (74.0 ± 19.3), $P = 0.340$ or prior knowledge of PBS; and yes (76.3 ± 18.8) versus no (65.6 ± 21.2), $P = 0.159$ [Table 4].

The prevalence of symptomatic PBS was (63.4%). A significantly higher proportion of junior resident doctors (70%) had features suggestive of PBS compared to senior resident doctors (48%), $P = 0.05$. Other sociodemographic parameters considered in this study such as age of respondents, $P = 0.567$, sex of respondents, $P = 0.755$, number of years in training, $P = 0.411$, marital status, $P = 0.173$, number of children, $P = 0.974$, religion, or prior knowledge of PBS, $P = 0.719$ had no association with the development of symptomatic PBS among surveyed doctors [Table 5].

DISCUSSION

The American psychologist Herbert Freudenberger first used the term “burnout” in 1974.^[19] Ever since, its existence among physicians has been well-documented in various studies around the globe.^[17,18,20,21] Sablik *et al.*^[20] analyzed 20 original pieces of research to determine the prevalence of burnout among doctors in different countries and reported that a remarkable percentage of doctors suffered burnout. This current study showed a high incidence of PBS among resident doctors in Nigeria. This agrees with the findings of studies among

Table 2: Characteristics of resident doctors enrolled for the physician burnout syndrome study across all states in Nigeria

Characteristics	Variable	n (%)
Age of respondents (years) (n=82)	21-30	10 (12.1)
	30-40	66 (80.5)
	>40	6 (7.4)
Sex of respondents (n=82)	Male	30 (36.4)
	Female	52 (63.6)
Rank of respondents (n=82)	Junior resident	56 (68.3)
	Senior resident	26 (31.7)
Number of years in training (n=82)	First year	11 (13.4)
	2 nd -4 th year	52 (63.4)
	$\geq 5^{\text{th}}$ year	19 (23.2)
Marital status (n=82)	Single	15 (18.3)
	Married	67 (81.7)
Number of children (n=82)	None	21 (25.6)
	1-3	54 (65.8)
	>3	7 (8.6)
Religion of respondents (n=82)	Christianity	76 (92.7)
	Others	6 (7.3)
Knowledge of PBS (n=82)	Yes	74 (90.2)
	No	8 (9.8)
Source of knowledge [†] (n=189)	Medical school	29 (15.3)
	Internet and electronic media	54 (28.6)
	Colleagues	76 (40.2)
	Journal publications	23 (12.2)
	Others	7 (3.7)

[†]Multiple answers allowed. PBS: Physician burnout syndrome

Table 3: Ranking of physician burnout syndrome among respondents

Parameters	Outcome	n	Mean \pm SD	SE*	Minimum value	Maximum value	T (P)
Grade of PBS (n=82)	Grade 0	3	32.7 \pm 2.5	1.51	30	35	139.9[†]
	Grade 1	4	47.5 \pm 2.6	1.32	44	50	0.001
	Grade 2	23	60.1 \pm 5.9	1.22	52	69	
	Grade 3	35	79.6 \pm 5.8	0.97	71	90	
	Grade 4	17	101.3 \pm 10.2	2.5	91	125	
Symptomatic PBS (n=82)	No	30	55.7 \pm 10.3	1.88	30	69	130.1
	Yes	52	86.7 \pm 12.7	1.76	71	125	0.001

Bold: Statistically significant. [†]Analysis of variance, *SE: Standard Error. PBS: Physician burnout syndrome, SD: Standard deviation

Table 4: Mean physician burnout syndrome score stratified by sociodemographic characteristics of respondents enrolled in the study

Characteristics	Variable	Burnout score, mean±SD	t-test, P**
Age of respondents (years) (n=82)	21-30	75.2±17.0	0.006 [†]
	30-40	75.1±19.2	0.940
	>40	77.6±23.1	
Sex of respondents (n=82)	Male	75.5±16.1	0.048
	Female	74.5±20.4	0.828
Rank of respondents (n=82)	Junior resident	78.6±17.9	4.706
	Senior resident	68.9±20.6	0.033
Number of years in training (n=82)	First year	75.2±16.7	1.875 [†]
	2 nd -4 th year	78.9±18.1	0.160
	≥5 th year	69.1±21.3	
Marital status (n=82)	Single	76.2±11.1	0.024
	Married	75.2±20.1	0.877
Number of children (n=82)	None	79.4±17.9	0.591 [†]
	1-3	75.1±19.4	0.557
	>3	57.0±20.7	
Religion of respondents (n=82)	Christianity	76.0±19.1	1.094
	Others	74.0±19.3	0.340
Knowledge of PBS (n=82)	Yes	76.3±18.8	2.026
	No	65.6±21.2	0.159

**Bold value for P is statistically significant, [†]Analysis of variance. PBS: Physician burnout syndrome, SD: Standard deviation

Table 5: Association between sociodemographic characteristics of respondents and symptomatic physician burnout syndrome

Characteristics	Variable	Symptomatic PBS		χ^2 , P**
		No, n (%)	Yes, n (%)	
Age of respondents (years) (n=82)	21-30	3 (27)	8 (72)	1.134
	30-40	25 (40)	38 (60)	0.567
	>40	2 (25)	6 (75)	
Sex of respondents (n=80)	Male	10 (40)	15 (60)	0.097
	Female	20 (36)	35 (64)	0.755
Rank of respondents (n=81)	Junior resident	16 (30)	38 (70)	3.812
	Senior resident	14 (52)	13 (48)	0.050
Number of years in training (n=78)	First year	3 (25)	9 (75)	1.776
	2 nd -4 th year	16 (34)	31 (66)	0.411
	≥5 th year	9 (47)	10 (53)	
Marital status (n=82)	Single	2 (18)	9 (82)	1.855
	Married	28 (39)	43 (61)	0.173
Number of children (n=80)	None	6 (35)	11 (65)	0.053
	1-3	22 (38)	36 (62)	0.974
	>3	2 (40)	3 (40)	
Religion of respondents (n=82)	Christianity	26 (34)	50 (66)	4.820
	Others	4 (67)	2 (33)	0.090
Knowledge of PBS (n=82)	Yes	27 (34)	48 (66)	0.130
	No	3 (43)	4 (57)	0.719

**Yates correction applied where appropriate, **Bold value for P is statistically significant. PBS: Physician burnout syndrome

physicians in Kuwait,^[22] Pakistan,^[23] the United Kingdom,^[24] and Australia.^[25] In the Pakistan study, the incidence of PBS

was higher among paediatric residents as compared to junior consultants, which corroborates the finding of our current study where junior residents had significantly more burden of PBS compared to senior residents. Although clinicians are prone to developing burnout above and beyond usual workplace stress, residency status in itself contributes to burnout, causing a significant degree of burnout, and this can be linked with several negative consequences, including depression, risk of medical errors, and harmful effects on patient safety.^[26,27] PBS is a significant problem for paediatric as it is for trainees in all medical disciplines.^[28] A particular issue for paediatric residents is that many of the character traits such as compassion, altruism, perfectionism, and patience developed during the residency training are of utmost importance in the management of sick children.^[29]

A significantly higher proportion of junior resident doctors in this study had features suggestive of PBS compared to senior resident doctors. McKinley *et al.*^[28] in a 2017 review of burnout and interventions in paediatric residency identified the stage of training as an essential factor in PBS, with burnout peaks occurring earlier in residency training which subsides as training progresses. Components of junior residency years that add to stress and burnout earlier in practice include low sleep quality, high patient loads, and lower medical knowledge.^[30,31]

Only a quarter of the respondents learned of PBS in lectures as medical students. For medical professionals, the seeds of burnout may be planted as early as medical school, and it has been suggested that there are a variety of factors such as lack of awareness and intervention by universities during medical school, which cumulatively over an extended time period contribute to burnout in physicians.^[26] Studies have shown that teaching stress reduction techniques in medical school reduces distress and has the potential to decrease burnout and increase the quality of life.^[32-34] Therefore, educational interventions may improve coping skills and reduce emotional distress in medical students and also physicians.^[34]

Apart from the level of residency training, no other sociodemographic factors such as age, sex, marital status, number of children, years of training, religious affiliation, and knowledge of PBS considered in this study had a significant effect on the grade or severity of burnout among surveyed residents. Similarly, several studies showed no significant correlation between age, marital status, parenting, and burnout.^[35-39] However, another study showed that female residents had higher PBS scores compared to male residents.^[40] In addition, Yasmin *et al.*^[22] in their research in Kuwait which surveyed 200 doctors found that other sociodemographic factors such as nationality and income had a significant association with emotional exhaustion, depersonalization, and personal accomplishment domains. Thus, the relationship of PBS with sociodemographic characteristics is still inconclusive and may be an area for further research.

CONCLUSION

We found that all surveyed residents had at least one or more features of PBS. However, a significantly higher proportion of junior resident doctors had features suggestive of PBS compared to senior resident doctors. The authors recommend the inclusion of stress reduction techniques in residency training programs and a review of workload distribution of residents at different training levels, in order to decrease burnout and ultimately improve the quality of health care delivery.

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Conflicts of interest

There are no conflicts of interest.

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