



Subjective Quality of Life and Psychiatric Morbidity among School Teachers in Abeokuta, South-West Nigeria

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Authors' contributions

This work was carried out in collaboration between all authors. Authors IM and ASM designed the study, wrote the protocol, collected the data and wrote the first draft of the manuscript. Authors ASM and OA managed the statistical analyses of the study. All authors read and approved the final manuscript.

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ABSTRACT

Aims: To measure subjective Quality of Life and its relationship to psychiatric morbidity and socio-demographic variables in secondary school teachers in Abeokuta, Ogun state, Nigeria.

Study Design: Cross-sectional.

Place and Duration of Study: 10 selected public secondary schools in Abeokuta between November 2014 and March 2015.

Methodology: The study was carried out among 341 school teachers in two stages. The 1st stage involved the administration of the World Health Organization Quality of Life (WHOQOL-BREF) and the 12-item General Health Questionnaire (GHQ-12), to all teachers to measure their subjective Quality of Life and to screen for a probable psychiatric disorder. In the second stage, subjects who were GHQ-positive and a proportion of those who were GHQ-negative were assessed using the

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Mini International Neuropsychiatric Interview to diagnose a depressive disorder, generalized anxiety disorder, somatization disorder and pain disorder.

Results: The mean scores of the domains of Quality of Life were; physical (70.7±12.9), environment (61.7±13.4), social (72.0±12.9) and psychological (72.2±11.2). The estimated true prevalence of psychiatric morbidity was 21.9%. The prevalence rates for depressive disorder, somatization disorder, generalized anxiety disorder and pain disorder were 11.1%, 5.6%, 5.9% and 12.9% respectively. The prevalence of having more than 1 of the 4 definitive disorders was 10.0%. The univariate analysis showed that age ($F = 4.15, p = .007$), length of years of service ($F = 3.69, p = .006$) and salary grade level ($F = 3.62, p = .03$) had significant association with the environment domain of QOL. Marital status ($F = 3.79, p = .02$) showed significant association with the social domain of QOL. While the teacher's school category ($F = 3.31, p = .03$) was significantly associated with the psychological domain of QOL. The multivariate linear regression analysis, found that subjects who had spent the longest number of years in the teaching service had the best QOL on the environment domain ($\beta = 11.177, t = 2.365, p = .019$), the married teachers had the best QOL on the social domain ($\beta = 10.555, t = 2.494, p = .013$) while teachers in junior secondary schools had the best QOL in the psychological domain ($\beta = 4.205, t = 2.143, p = .033$). The study found significant associations between probable psychiatric morbidity and all the domains of Subjective Quality of Life.

Conclusions: The study showed that the subjective QOL among the sample of school teachers was strongly influenced by their length of years of service, marital status and teacher's school categories. It also showed that there was a high prevalence of probable and definitive psychiatric morbidity among secondary school teachers and this correlated negatively to Subjective QOL. There is a need to focus on policies and practices that will improve the QOL of school teachers, and in the development of preventive strategies against mental illness and in providing treatment for persons with psychiatric disorders in the workplace.

Keywords: School teachers; quality of life; psychiatric morbidity; Nigeria.

1. INTRODUCTION

Teaching is one of the oldest and noblest occupations. The teacher in the educational process refers to the person who instructs to provide the teaching-learning process [1]. School teachers play an essential role in the physical, mental and social development of the growing child and their 'Quality of Life' (QOL) and psychological well-being may affect their effectiveness, efficiency and the quality of services they render [2].

The World Health Organization (WHO) defines 'Quality of Life' as an individual's perception of their position in life in the context of the culture and value systems in which they live and about their goals, expectations, standards and concerns. It is a broad-ranging concept affected complexly by the persons' physical health, psychological state, level of independence, social relationships, and their relationship to salient features of their environment [3]. Mental Health is "a state of well-being in which the individual realizes his or her abilities, can cope with the normal stresses of life, can work productively and fruitfully, and can contribute to his or her community [4]. The measurement and the effects

of health care includes an estimation of well-being and can be assessed by measuring the improvement in the Quality of Life-related to the health care of the individual [3].

Since work is a component of everyday living, the nature of a person's occupation and the work environment may affect his mental health and QOL. The consequences of mental illness and a poor QOL in the workplace include absenteeism, impaired work performance, loss of motivation and commitment, poor relationships with clients and colleagues and early retirement [5]. Several studies have reported that school teachers suffer from more psychological distress and a poorer QOL than many other professional groups [6-9]. Studies from both high and low and medium income countries report a high rate of mental illness among school teachers [10,11]. These findings have often been attributed to factors within the teaching profession. For example, Pereira et al. found a significant linkage between more extended teaching hours, more weekly work hours and low QOL domain scores among school teachers in Brazil [9]. A study of Chinese school teachers found that occupational stress was capable of inducing worsening physical and mental conditions for teachers while coping

resources such as social support in the workplace improve teachers' Quality of Life [7].

Studies conducted in Nigeria have found that school teachers are poorly motivated and dissatisfied with work and living conditions [12]. Sources of stress includes underpayment of salaries and remunerations, a very high student to teacher's ratio, increased workload, frequent teachers strikes leading to irregularities and disruptions of school calendar, shortages of teaching tools, lack of personal space, inadequate opportunities for career growth, presence of dilapidated classrooms, poorly equipped laboratories and equipment and poor relations with subordinates and employers [12-14]. In addition to these, the general community often holds an unfavorable image of the profession and teachers are accorded a lower status and are paid lower salaries than workers in many other professions [15]. These factors often lead to poor motivation, lukewarm classroom practices, a poor academic performance of students, decline in professional standards, militancy and early exit from the profession [1]. These may likely increase the risk of mental illness and translate to a reduced QOL of the school teacher.

This study aims to measure subjective Quality of Life and its relationship to psychiatric morbidity and socio-demographic variables in public secondary school teachers in Abeokuta, Ogun state. This is probably the first study to explore some of the psychosocial factors influencing the QOL of an occupational group in Nigeria. Such knowledge may help in increasing the awareness of teachers, administrators and policymakers about factors affecting the health and quality of life of the Nigerian school teacher.

2. METHODS

2.1 Study Setting

The study was conducted in Abeokuta, the largest city and capital of Ogun state located in the Southwestern zone of Nigeria, from November 2014 to March 2015. There are 65 public secondary schools in Abeokuta, with a population of 2848 teachers. Based on the categories used by the Ogun State Teaching Service Commission in its classification of public secondary schools, the schools were stratified into 3 strata: junior secondary with 28 schools and 1328 teachers; senior secondary with 28 schools and 1247 teachers and combined junior and secondary with 9 schools and 273 teachers.

2.2 Study Design

We conducted a cross-sectional study among public secondary school teachers. Only full-time teachers, who had spent at least 1 year in the teaching service were recruited. Part-time teachers and those who were less than 1 year in the profession (e.g. student interns) were excluded.

2.3 Sample Size Determination

Using the Leslie Kish's equation and adjusting for a 20% non-response, a sample size of 372 was calculated [16].

$$n = n_f / [1+n_f/N]$$

n = sample size when study population is < 10000.

n_f = sample size when study population is > 10000.

N = estimate of the population size = 2848.

$$n_f = Z^2pq / d^2$$

Z (standard normal deviate) = 1.96;

d (degree of accuracy) = 0.05;

p (prevalence of psychiatric morbidity among teachers in a previous study) = 45% = 0.45 [17].

$$q = 1-p = 1- 0.45 = 0.55$$

$$n_f = 380$$

$$n = n_f / [1+n_f/N].$$

$$n = 380 / 1+ 380/2848 = 335$$

Adjusting for a non-response of 10%

$$n \sim (\text{estimated sample size}) = nr / r-1 \text{ where } n = 335; r = 10$$

$$n \sim = 372$$

2.4 Sampling

The sample selected from each stratum was determined by proportionate stratified sampling.

Sample size of each stratum = sampling fraction x stratum population [18].

Sampling fraction = sample size / study population = 360/2848.

This meant that 173, 163 and 36 respondents were selected from junior, senior and combined schools respectively.

The number of schools sampled in each category was determined using the formulae:

Sample size in the stratum / average number of teachers in each school.

Average number of teachers in each school was;

= Total population of teachers in each category/total number of schools in the category.

Thus 10 schools (4 junior, 4 senior and 2 combined) were randomly selected through a blind draw method. All teachers, in the selected schools, who met the study's criteria were invited to participate in the study.

2.5 Ethical Consideration

Ethical approval was obtained from the Research and Ethical Committee of the Neuropsychiatry Hospital, Aro, Abeokuta Ogun State, and permission were obtained from the Ogun State Teaching Service Commission, the Nigerian Union of Teachers, Ogun State Branch, and the management of the various secondary schools studied. Participants signed the consent form, which described the type of study being done, the purpose of the study, the respondent's rights to confidentiality and the rights to withdraw from the study. Participant's names were not used at any stage of the study and no financial inducement was given. Respondents determined to have significant psychological distress were referred to a specialist psychiatric hospital for further evaluation and treatment.

2.6 Instruments

2.6.1 World Health Organization quality of life (WHOQOL-BREF)

The WHOQOL is a cross-culturally comparable QOL measure which focuses on individuals' own views of their wellbeing [3]. The WHOQOL-BREF (an abbreviated version of WHOQOL-100) contains 26 items, and measures 4 domains; physical [7], psychological [6], social relationship [3] and environment [8], and 2 standalone items measuring overall QOL and general health [19]. It displays good discriminant validity, content validity, internal consistency and test-retest

reliability (19). Each item was scored on a 5 point likert scale, ranging from 1-5. Negatively framed items (questions 3, 4 and 26) were converted to positively framed questions. The raw scores (obtained by an addition of the scores of the individual items of the domain) were converted to transformed scores on a 0-100 scale to produce a QOL profile. Domain scores are scaled in a positive direction.

2.6.2 12-Item general health questionnaire (GHQ-12)

The GHQ is a self-administered questionnaire designed for the detection and assessment of individuals with an increased likelihood of current psychiatric disorder [20]. The original questionnaire consisted of 60 items from which shorter versions of 30, 28, 20 and 12 items have been developed. Respondents base their responses on their health state over the past few weeks. It's been extensively validated in general and clinical population worldwide. The instrument may be scored bimodally (with the two least symptomatic answers scoring 0 and the two most symptomatic answers scoring 1). A recommended threshold score for GHQ-12 (3/4) has shown a high degree of sensitivity and specificity [20]. Respondents with a score of 3 and above were described as GHQ positive or having a probable psychiatric disorder, while those with a score of less than 3 were termed GHQ negative in this study.

2.6.3 Mini international neuropsychiatric interview-plus (M.I.N.I plus)

This is a short structured interview for diagnosing Diagnostic Statistical Manual for Mental Disorders (DSM) and International Classification of Diseases (ICD-10) psychiatric disorders [21]. It is divided into modules identified by letters corresponding to 17 diagnostic categories. For each disorder, one or two screening questions rule out the diagnosis when answered negatively. The M.I.N.I plus has been validated against the much longer Structured Clinical Interview for DSM diagnoses (SCID-P), and the Composite diagnostic interview for ICD-10 [21]. The M.I.N.I plus was used in this study to make a definitive diagnosis of depressive disorder, generalized anxiety disorder, somatization disorder and pain disorder.

2.7 Data Collection and Procedure

The study was done in two stages. In the 1st stage, all respondents filled the WHOQOL-BREF

questionnaire and were screened for a probable psychiatric disorder using the 12-item GHQ. In the 2nd stage, an unordered and undifferentiated list of GHQ-positive and 10% randomly selected GHQ-negative respondents was made. They were interviewed using the Mini International Neuropsychiatry Interview-Plus. The screening and clinical interview was conducted during the break and free periods of the teachers. The research was done in the English Language.

2.8 Data Analysis

Data was analyzed using the statistical package for social sciences (SPSS version 21) computer software. Descriptive statistics were used in summarizing the data, while analytical statistics were used to test for significant associations. We used frequencies, proportions, tables and figures to summarize data, while bivariate and multivariate analysis were performed to identify factors associated with psychiatric morbidity. The independent t-test and analysis of variance (ANOVA) were used in determining statistically significant associations and the level of significance set at $p < 0.05$. The estimated true prevalence of psychiatric morbidity for a 2-stage study was estimated using the Horvitz-Thompson Estimator [21].

$$\pi = \frac{\sum w_i Y_i}{\sum w_i}$$

π = Estimated true prevalence of psychiatric disorder

w_i = Probability weight (reciprocal of the sampling fraction for 2nd phase sample)

$\sum w_i Y_i$ = the sum of the products; $Y_i = 1$ for subjects with a MINI-plus diagnosis and $Y_i = 0$ for subjects without a MINI-plus diagnosis.

3. RESULTS

A total of 341 secondary school teachers completed and returned the socio-demographic questionnaire, the World Health Organization Quality of Life (WHOQOL-BREF) questionnaire and the 12-item General Health Questionnaire (GHQ-12). This gave a response rate of 91.6%. The age of the respondents ranged from 20 to 57 years. The mean age was 40.5 ± 7.3 years. The majority were females (65.7%), 90.3% were married and 86.8% had children. The respondents had been teaching for between 1 and 35 years, with an average of 12.7 ± 7.3 years Table 1.

Table 1. Socio-demographic characteristics of subjects (n = 341)

Characteristics	n (%)
Age (years)	
20 – 29	14.1 (4.1%)
30 – 39	146 (42.8%)
40 – 49	138 (40.5%)
50 or more	43 (12.6%)
Mean (\pm SD)	40.5 (\pm 7.3)
Gender	
Male	117 (34.3%)
Female	224 (65.7%)
Marital status	
Never married	24 (7.0%)
Married	308 (90.3%)
Separated/Divorced/Widowed	9 (2.7%)
Number of children	
None	45 (13.2%)
1 – 2	102 (29.9%)
3 – 4	174 (51.0%)
5 or more	20 (5.9%)
Educational level	
NCE	45 (13.2%)
BSC/HND	233 (68.3%)
PGD/MSC/PHD	63 (18.5%)
Length of years in service	
1 – 5	37 (10.8%)
6 – 10	151 (44.3%)
11 – 15	43 (12.6%)
16 – 20	50 (14.7%)
21 or more	60 (17.6%)
Mean (\pm SD)	12.7 (\pm 7.3)
Salary grade level	
6 – 9	177 (51.9%)
10 – 13	86 (25.2%)
14 or more	78 (22.9%)
Teacher's category	
Junior school	158 (46.3%)
Senior school	148 (43.4%)
Combined junior and senior school	35 (10.3%)

NCE – National Certificate of Education; HND – Higher National Diploma; BSC - Bachelor of Science
PGD – Postgraduate Diploma; PHD – Doctor of Philosophy

Sixty-three (18.5%) respondents had a GHQ-12 score of 3 and above and were categorized as GHQ-positive and having a probable psychiatric morbidity. Of the 91 (63 GHQ positive and 28 GHQ negative) subjects invited to participate in the 2nd stage of the study, 84 responded (59 GHQ positive and 25 GHQ-negative) and were interviewed with the M.I.N.I. Following the interview, 51 (49 GHQ positive and 2 GHQ negative respondents) had a definitive

psychiatric disorder. The estimated true prevalence of psychiatric morbidity for a two-stage study using the Horvitz Thompson Estimator was 21.9%. The lifetime prevalence rate for depressive disorder and somatization disorder were 11.1% and 5.6% respectively. The 6 months rate for generalized anxiety disorder and pain disorder was 5.9% and 12.9% respectively. The prevalence of having more than 1 of the 4 definitive disorders was 10.0% Table 2.

Table 2. Prevalence of psychiatric morbidities

Stage 1	
GHQ – Positive	63 (18.5%)
GHQ – Negative	278 (81.5%)
Total (n ₁)	341 (100.0%)
Stage 2 (n₂ = 84)	
MINI Plus Psychiatric Disorder (Present)	
GHQ – Positive (59)	49
GHQ – Negative (25)	2
Estimated True Prevalence	21.9%
Depressive Disorder	
GHQ – Positive (59)	25
GHQ – Negative (25)	1
Estimated Prevalence	11.1%
Generalized Anxiety Disorder	
GHQ – Positive (59)	19
GHQ – Negative (25)	0
Estimated Prevalence	5.9%
Somatization Disorder	
GHQ – Positive (59)	18
GHQ – Negative (25)	0
Estimated Prevalence	5.6%
Pain Disorder	
GHQ – Positive (59)	31
GHQ – Negative (25)	1
Estimated Prevalence	12.9%
> 1 MINI Plus Psychiatric Disorder	
GHQ – Positive (59)	32
GHQ – Negative (25)	0
Estimated Prevalence	10.0%

The mean and standard deviation of the transformed scores in the four Quality of Life domains were: physical (70.7±12.9); environment

(61.7±13.4); social (72.0±12.9) and psychological (72.2±11.2). The bivariate analysis showed that age ($F = 4.15, p = .007$), length of years of service ($F = 3.69, p = .006$) and salary grade level ($F = 3.62, p = .03$) were significantly associated with the environment domain of QOL. It also showed an association between marital status ($F = 3.79, p = .02$) and social domain of QOL, and between teacher's school category ($F = 3.31, p = .03$) and psychological domain of QOL. The association between psychological morbidity and Quality of Life was significant on all 4 domains ($p < .001$) Table 3.

Multiple linear regression analysis showed that spending ≥ 20 years in service ($\beta = 11.177, t = 2.365, p = .019$) was the best positive predictor of QOL in the environment domain, while a married marital status ($\beta = 10.555, t = 2.494, p = .013$) was the most significant predictor of the social domain of QOL. Teachers in the junior school category ($\beta = 4.205, t = 2.143, p = .033$), had the best QOL on the psychological domain. The GHQ remained the worst predictor of QOL on all 4 domains Table 4.

4. DISCUSSION

The environment domain was the most affected in our assessment of the Quality of Life of school teachers. The transformed mean score of 61.7, was about 10 points lower than obtained in other domains. This finding was similar to results reported in Quality of Life studies among school teachers in Brazil [6,9,22]. The environment domain of QOL incorporates facets such as financial resources, physical environment, health care, social support and transport [19]. Teachers in many public schools in Nigeria are unduly exposed to unhealthy physical environments, overcrowded class rooms, limited staff rooms or office space and poorly outdated infrastructures [13]. This is coupled with poor, irregular wages and remunerations, and limited opportunities for leisure, recreation, and for acquiring new information and skills [23]. These factors may have contributed to the lower QOL score in this domain. However, Quality of Life studies done among other professional groups, (e.g. medical students, dental surgeons, anesthetists and health workers) also reported the lowest scores in the environment domain [24-27]. Similar findings among diverse professional groups reinforces the fact that the WHOQOL-BREF is reliable in measuring the subjective QOL of various occupational groups.

Table 3. Mean scores on the WHOQOL-BREF domains according to socio-demographic characteristics

Variables	Physical 70.7 (±12.9)	Environment 61.7 (±13.4)	Social 72.0 (±12.9)	Psychological 72.2 (±11.2)
Age				
20 – 29	75.6 (±11.8)	66.6 (±17.9)	77.7 (±11.7)	71.4 (±12.6)
30 – 39	68.9 (±12.1)	59.3 (±12.9)	70.7 (±13.0)	71.3 (±10.9)
40 – 49	71.4 (±13.1)	62.4 (±13.4)	72.6 (±11.5)	72.4 (±11.4)
> 50	72.6 (±14.6)	66.3 (±11.9)	72.7 (±16.2)	74.8 (±10.9)
F, df = 337	2.03	4.15	1.55	1.12
p-value	0.11	0.007*	0.20	0.34
Gender				
Male	71.7 (±13.4)	61.5 (±14.5)	70.7 (±13.9)	71.7 (±11.1)
Female	70.1 (±12.6)	61.9 (±12.8)	72.7 (±12.2)	72.5 (±11.2)
t, df = 339	1.05	-0.26	-1.37	-0.65
p-value	0.29	0.79	0.17	0.54
Marital status				
Never married	73.3 (±15.4)	62.1 (±16.3)	69.0 (±16.3)	71.7 (±13.1)
Married	70.5 (±12.6)	61.8 (±13.1)	72.5 (±12.3)	72.3 (±10.9)
SDW	67.6 (±15.8)	57.2 (±17.3)	61.8 (±17.3)	69.6 (±14.7)
F, df = 338	0.77	0.53	3.79	0.29
p-value	0.46	0.59	0.02	0.75
Children				
None	73.0 (±12.3)	62.4 (±15.1)	72.2 (±13.3)	71.7 (±11.1)
1 – 2	69.9 (±13.1)	60.9 (±14.3)	70.7 (±11.8)	72.0 (±10.5)
3 – 4	70.9 (±12.6)	61.9 (±12.9)	72.6 (±13.2)	72.5 (±11.4)
≥ 5	67.6 (±15.3)	62.9 (±9.2)	72.9 (±14.9)	71.7 (±12.8)
F, df = 337	1.13	0.21	0.50	0.10
p-value	0.34	0.89	0.68	0.96
Educational L.				
NCE	68.8 (±14.6)	60.2 (±15.8)	71.9 (±12.4)	70.9 (±12.3)
BSC/HND	71.6 (±12.1)	62.1 (±13.3)	72.0 (±12.8)	72.6 (±10.7)
PGD/MSC/PHD	68.5 (±14.1)	61.4 (±12.1)	71.9 (±13.5)	71.4 (±12.1)
F, df = 338	1.95	0.42	0.00	0.59
p-value	0.14	0.66	0.99	0.53
Service years				
1 – 5	71.8 (±13.9)	59.1 (±15.7)	71.9 (±13.5)	71.5 (±12.3)
6 – 10	69.2 (±11.7)	60.5 (±12.6)	70.9 (±12.9)	71.6 (±10.9)
11 – 15	69.7 (±14.9)	62.3 (±14.6)	72.1 (±11.8)	71.9 (±9.8)
16 – 20	70.2 (±12.7)	60.2 (±12.8)	71.3 (±12.2)	71.2 (±12.8)
≥ 21	74.6 (±13.4)	67.4 (±12.4)	75.3 (±13.9)	75.3 (±10.1)
F, df = 338	2.07	3.69	1.33	1.41
p-value	0.08	0.006*	0.26	0.23
Grade level				
6 – 9	70.2 (±12.9)	60.6 (±13.8)	71.7 (±13.3)	71.7 (±11.3)
10 – 13	68.9 (±11.9)	60.9 (±12.7)	70.8 (±10.5)	70.9 (±10.6)
≥ 14	73.6 (±13.6)	65.3 (±12.9)	74.1 (±14.1)	74.7 (±11.3)
F, df = 338	2.98	3.62	1.46	2.68
p-value	0.05	0.03*	0.23	0.06
School category				
Junior	71.2 (±13.4)	63.2 (±14.1)	71.6 (±12.9)	73.9 (±11.1)
Senior	70.0 (±12.7)	60.5 (±13.1)	72.2 (±12.5)	70.9 (±10.5)
Combined	71.0 (±11.1)	60.4 (±11.2)	72.8 (±14.4)	70.1 (±12.9)
F, df = 338	0.33	1.76	0.18	3.31
p-value	0.72	0.17	0.84	0.03*

Variables	Physical 70.7 (±12.9)	Environment 61.7 (±13.4)	Social 72.0 (±12.9)	Psychological 72.2 (±11.2)
GHQ				
Negative	72.5 (±11.7)	63.1 (±12.7)	73.2 (±11.7)	73.7 (±9.9)
Positive	62.4 (±14.6)	55.9 (±14.8)	66.6 (±16.1)	65.3 (±13.4)
t, df = 339	5.91	3.89	3.72	5.71
p-value	0.000*	0.000*	0.000*	0.000*

p < 0.05. *df* = degree of freedom, *t* = independent *t*-test, *F* = analysis of variance

Table 4. Multiple Regression relating Subjective QOL domains to Predictor variables (Socio-demographic Characteristics and GHQ)

	β	t	p-value	95% CL	Reference
Environment					
GHQ	-6.857	-3.770	0.000*	(-10.436) – (-3.279)	
Age					
30 – 39	-6.581	-1.761	0.079	(-13.935) – (0.772)	20 – 29 years
40 – 49	-2.885	-0.721	0.471	(-10.756) – (4.986)	
≥ 50	-2.995	-0.640	0.523	(-12.200) – (6.209)	
Service of length					
6 – 10	3.559	1.405	0.161	(-1.426) – (8.544)	1 – 5 years
11 – 15	5.152	1.525	0.128	(-1.495) – (11.798)	
16 – 20	3.621	0.931	0.352	(-4.029) – (11.271)	
≥ 21	11.177	2.365	0.019*	(1.882) – (20.473)	
Grade level					
10 – 13	-2.034	-0.864	0.388	(-6.664) – (2.595)	Level 6 – 9
≥ 14	-4.116	-1.026	0.306	(-12.006) – (3.774)	
Social					
GHQ	-6.802	-3.875	0.000*	(-10.256) – (-3.349)	
Marital status					
Single	5.994	1.223	0.222	(-3.649) – (15.637)	SDW
Married	10.555	2.494	0.013*	(2.229) – (18.881)	
Psychological					
GHQ	-9.407	-6.321	0.000*	(-12.335) – (-6.480)	
Combined School	-4.205	-2.143	0.033*	(-8.066) – (-0.345)	Junior School
Senior School	-4.273	-3.503	0.001*	(-6.673) – (-1.874)	

**p* is significant when <0.05; β = Regression Coefficient; CI = Confidence Interval; *t* = Independent *t*-test

We found that school teachers who had spent the longest number of years in the profession had the best Quality of Life on the environment domain. Teachers with the longest years of service may spend less time in the classroom and are more likely to serve in a managerial, supervisory or administrative capacity. They may have more control over their work and have successfully overcome the challenges of the teaching profession. They may also enjoy an improved financial status and social life which give them access to better health care, social care, housing and transport. This finding supports Pereira et al's study among school teachers in Brazil, that those who had spent the most number of years as teachers and occupy managerial and supervisory posts had a higher QOL compared to classroom teachers [9]. Similarly, Ge et al. reported that Chinese school

teachers with higher job rank enjoyed better relationships, social prestige, a wider range of social support networks and less pressure in many aspects of their lives [8].

Married teachers had the best QOL in the social domain. This group seemed to enjoy a better interpersonal relationship, social support, sexual life, and self-esteem, in comparison to the never married, separated, divorced or widowed teachers. Several research works have noted a positive correlation between being married and enjoying a higher QOL [28-30]. Lee concluded that being married positively affected the experience of happiness, the evaluative response of one's life, reduced the experience of anxiety and increased the sense of personal competence [28]. Prigerson et al. observed an association between marital harmony and better

sleep and fewer depressive symptoms [30]. Bourassa et al, in their study of 1639 middle aged adults in the United States reported that there was evidence of a negative association between divorced women, marital quality and life satisfaction, whereas continuously married women showed a positive association between marital quality and later life satisfaction [31].

The fact that teacher in the junior school category had the best QOL in the psychological domain, may imply that their job is less stressful when compared to teachers in the senior and combined school categories. Unlike teachers in the combined school category who usually teach *both* junior and senior students and prepare lecture notes for more than a class and subject, junior school teachers usually teach only junior students and one school subject. Besides they do not have the extra work and burden of preparing senior students for the end of school leaving certificate examinations. This may give them more time for leisure activities, increase concentration on their jobs, a higher self-esteem, positive feelings about the profession and increased satisfaction. Fernandes et al found that teachers whose tasks were characterized as active and demanding were more negatively affected in the various QOL domains [6].

The estimated true prevalence rate of psychiatric morbidity in this study was 21.9%. In an earlier study, Ofilli et al. had found a 14.8% psychological morbidity (GHQ-positive) among private secondary school teachers in Edo state, Nigeria [11]. These rates were lower than those obtained from other societies. For example, Nagal et al reported that 62.9% of public school teachers in Japan were GHQ-positive while Tuettermann and Punch reported a 45% prevalence of psychological distress among secondary school teachers in Western Australia [17,32]. Factors such as decreased job satisfaction, unusually long working hours and high societal expectations were common to all these studies. It is possible that inherent protective factors, such as a more tightly knit African society, with stronger family coercion and social support, may have contributed to the lower prevalence of psychiatric morbidity in this study [33]. There may also be the probability of underreporting due to a heavier stigma burden in this environment [34]. The findings of this study were similar to those reported among other professional groups and the general population in this environment [35,36]. This may reflect the fact that teachers, being members of the

community, are faced with similar psychological, and socioeconomic challenges as the populace.

The rate of depressive disorder in this study was higher than that reported in the general Nigerian population (3.3%) and other occupational groups such as bank workers (3.7%) and non-resident doctors (1.3%) [37-39]. This lends support to the view that school teachers in Nigeria are at a higher risk of depressive illness and that factors within the teaching profession may increase an individual's liability to suffering from depression. The rate of somatization disorder among the teachers was also higher than the 1.1% found among patients in primary care [40]. A higher prevalence in teachers could be related to the physically demanding job of the school teacher. The teacher usually spend many hours standing, talking, writing, preparing lecture notes and caring for student's needs and problems. These coupled with little time for matters of personal interests, decreased leisure and sleep may account for the high rate of somatic complaints among teachers. The prevalence of pain disorder in this study was within the estimated range (2%-50%) for the general adult population [41]. Frohlich et al observed that pain disorder ranks among the most prevalent conditions in all age groups and its total burden (disability and health services utilization) exceeded that of depression [42]. A comparison of our findings with that reported in the community reveals that pain disorder is a common finding regardless of the occupation group.

The presence of a psychiatric morbidity remained negatively associated with the QOL after correction for likely socio-demographic confounders. QOL studies conducted among other occupation groups have also found a negative correlation between QOL and psychiatric morbidity. One study conducted among Taiwanese Military Personnel, reported that QOL domain scores have a negative association with the presence and severity of psychopathology [43]. Another found that the presence of psychiatric morbidity had an impact of the QOL of medical and nursing staffs in Greece [44]. Similarly, studies done in the general population have highlighted the negative association between Quality of Life and Psychiatric morbidity [45-47].

5. STRENGTHS AND LIMITATIONS

The high response rate and the use of internationally accepted instruments in this study

made its findings easily comparable with studies in other parts of the world. Also, a range of definitive psychiatric disorders were studied which may provide some reference data on psychiatric morbidity among occupational groups, which have been scarcely studied in Nigeria. However, we noted the following limitations. First, the study's design may have hampered the interpretation of a causal relationship between Quality of Life, socio-demographic factors and psychiatric morbidity. Despite this, an inference was made about the relationships between QOL, psychiatric morbidity and socio-demographic characteristics. However, we recommend that longitudinal studies be conducted to investigate the mediating pathways between work-related factors, subjective Quality of Life and psychiatric morbidity. Secondly we did not control for possible confounders as physical illnesses and psychoactive substance use which may negatively influence subjective Quality of Life. Thirdly, without a control group, it is difficult to generalize the findings of this study to the general population or other occupational groups, hence it is suggested that future studies should make comparisons between various occupational groups in the society.

6. CONCLUSIONS

The well-being of school teachers deserve attention considering the fact that the quality and effectiveness of the educational system is dependent on the competence, effectiveness, efficiency, and devotion of the teaching force and no system can rise above the quality of its teachers [48]. This study has contributed to the limited literature on QOL of occupational groups in the Nigerian community. We also showed that psychiatric disorders are common among school teachers in this environment. It is quite clear that some socio-demographic and teaching variables and mental illness adversely affect the QOL of the school teacher. It is expected that improving factors directly and indirectly involved in the teaching process such as welfare and remunerations, modernization and equipping of class and staff rooms, reductions in the student to teacher's ratio, increased opportunities for career progression, work-life balance and improved relationships with colleagues and employers will increase teacher's motivation and reduce the exodus of teachers from the professions. These may ultimately improve the QOL and reduce the rate of psychiatric disorders among school teachers in Nigeria.

CONSENT

As per international standard, written informed consent was collected from the participants and has been preserved by the authors.

ETHICAL APPROVAL

As per international standard or university standard, written approval of Ethics committee has been collected and preserved by the authors.

COMPETING INTERESTS

The authors have declared that no competing interests exists.

REFERENCES

1. Afe J. Reflections on becoming a teacher and the challenges of teacher education. University of Benin Inaugural Lecture. Series 6A. NUC (2002) Nigerian Universities Inaugural Lecture Series. 2002;305-27.
2. Davari S, Bagheri M. Mental health status and demographic factors associated with it in teachers. Middle-East Journal of Scientific Research. 2012;12(3):340-6.
3. WHO. Development of the World Health Organization WHOQOL-BREF quality of life assessment. Psychological Medicine. 1998;28(3):551-8.
4. WHO. Mental health atlas 2005: World Health Organization; 2005.
5. Warr P. Work, unemployment, and mental health: Oxford University Press; 1987.
6. Fernandes MH, Rocha VMD. Impact of the psychosocial aspects of work on the quality of life of teachers. Revista Brasileira de Psiquiatria. 2009;31(1):15-20.
7. Yang X, Ge C, Hu B, Chi T, Wang L. Relationship between quality of life and occupational stress among teachers. Public Health. 2009;123(11):750-5.
8. Ge C, Yang X, Fan Y, Kamara A, Zhang X, Fu J, et al. Quality of life among Chinese college teachers: A cross-sectional survey. Public Health. 2011;125(5):308-10.
9. Pereira EF, Teixeira CS, Lopes AdS. Quality of life of elementary education teachers in Florianópolis, State of Santa Catarina. Ciencia & Saude Coletiva. 2013; 18(7):1963-70.

10. Jurado D, Gurpegui M, Moreno O, de Dios Luna J. School setting and teaching experience as risk factors for depressive symptoms in teachers. *European Psychiatry*. 1998;13(2):78-82.
11. Ofili A, Usiholo E, Oronsaye M. Psychological morbidity and job satisfaction among teachers in private secondary schools. *Annals of African Medicine*. 2009;8(1).
12. Oyetola S. Cross-sectional survey of job satisfaction and psychiatric morbidity among secondary school teachers in Abeokuta, Ogun State. *West African College of Physicians*; 2011.
13. Ekundayo HT, Kolawole AO. Stress among secondary school teachers in Ekiti State, Nigeria. *Journal of Educational and Social Research*. 2013;3(2):311.
14. Ladebo OJ. Effects of work-related attitudes on the intention to leave the profession: An examination of school teachers in Nigeria. *Educational Management Administration & Leadership*. 2005;33(3):355-69.
15. Oliveira J, Farrell JP. Teacher costs and teacher effectiveness in developing countries. *Teachers in Developing Countries: Improving Effectiveness and Managing Costs*. 1993;7-23.
16. Kish L. *Statistical design for research*. John Wiley & Sons; 2004.
17. Tuettemann E, Punch KF. Psychological distress in secondary teachers: Research findings and their implications. *Journal of Educational Administration*. 1992;30(1).
18. Daniel J. Choosing the type of probability sampling. *Sampling Essentials*. 2012;125-74.
19. WHO. WHOQOL-BREF: Introduction, administration, scoring and generic version of the assessment: Field trial version, December 1996.
20. Goldberg D, Williams P. A Users' guide to the general health questionnaire the general health questionnaire. *Nfer-Nelson*; 1988.
21. Dunn G, Pickles A, Tansella M, Vázquez-Barquero JL. Two-phase epidemiological surveys in psychiatric research. *The British Journal of Psychiatry*; 1999.
22. Tabeleão VP, Tomasi E, Neves SF. Quality of life and burnout among public high school and primary school teachers in Southern Brazil. *Cadernos de Saude Publica*. 2011;27(12):2401-8.
23. Bolarin T. Late payment of teachers' salary as it affects the quality of education in Lagos state primary schools: A socio-psychological perspective. *Journal of National Association of Education Teachers*. 1993;6(1):11-5.
24. Zhang Y, Qu B, Lun S, Wang D, Guo Y, Liu J. Quality of life of medical students in China: A study using the WHOQOL-BREF. *PLoS One*. 2012;7(11):e49714.
25. Calumbi RA, Amorim JA, Maciel CMC, Damázio Filho O, Teles AJF. Evaluation of the quality of life of anesthesiologists in the city of Recife. *Brazilian Journal of Anesthesiology*. 2010;60(1):42-51.
26. Nunes MdF, Freire MdCM. Quality of life among dentists of a local public health service. *Revista de Saúde Pública*. 2006;40(6):1019-26.
27. Gholami A, Jahromi LM, Zarei E, Dehghan A. Application of WHOQOL-BREF in measuring quality of life in health-care staff. *International Journal of Preventive Medicine*. 2013;4(7):809.
28. Lee S. Marital status, gender and subjective quality of life in Korea. *Development and society*. 1998;27(2):35-49.
29. Imhonde H, Idiakheua E, Ewanborshiora O. Quality of life among female workers in edo state: Consideration of job-type, age and marital status. *Gender and Behaviour*. 2010;8(1):2846-56.
30. Prigerson HG, Maciejewski PK, Rosenheck RA. The effects of marital dissolution and marital quality on health and health service use among women. *Medical Care*. 1999;37(9):858-73.
31. Bourassa KJ, Sbarra DA, Whisman MA. Women in very low quality marriages gain life satisfaction following divorce. *Journal of Family Psychology*. 2015;29(3):490.
32. Nagai M, Tsuchiya KJ, Touloupoulou T, Takei N. Poor mental health associated with job dissatisfaction among school teachers in Japan. *Journal of Occupational Health*. 2007;49(6):515-22.
33. Alem A, Jacobsson L, Hanlon C. Community-based mental health care in Africa: Mental health workers' views. *World psychiatry: Official Journal of the World Psychiatric Association (WPA)*. 2008;7(1): 54-7.
34. Ukpong DI, Abasiubong F. Stigmatising attitudes towards the mentally ill: A survey in a Nigerian university teaching hospital.

- South African Journal of Psychiatry. 2010; 16(2):56-60.
35. Yussuf A, Balogun O, Kuranga S. Prevalence and risk factors for psychiatric morbidity among tertiary hospital consultants in Nigeria. South African Journal of Psychiatry. 2006;12(2):26-36.
36. Aikins Ad-G, Agyemang C. Chronic Non-communicable Diseases in Low and Middle-income Countries: Cabi; 2015.
37. Gureje O, Lasebikan VO, Kola L, Makanjuola VA. Lifetime and 12-month prevalence of mental disorders in the Nigerian Survey of Mental Health and Well-Being. The British Journal of Psychiatry. 2006;188(5):465-71.
38. Yussuf A. Risk factors for psychiatric morbidity among bank workers in a northern city of Nigeria. South African Journal of Psychiatry. 2005;11(2):63-8.
39. Gu A, Onyeama G, Bakare M, Igwe M. Prevalence of depression among resident doctors in a teaching hospital, South East Nigeria. International Journal of Clinical Psychiatry. 2015;3(1):1-5.
40. Gureje O, Von Korff M, Simon GE, Gater R. Persistent pain and well-being: A World Health Organization study in primary care. Jama. 1998;280(2):147-51.
41. Verhaak PF, Kerssens JJ, Dekker J, Sorbi MJ, Bensing JM. Prevalence of chronic benign pain disorder among adults: A review of the literature. Pain. 1998;77(3): 231-9.
42. Fröhlich C, Jacobi F, Wittchen HU. DSM-IV pain disorder in the general population. European Archives of Psychiatry and Clinical Neuroscience. 2006;256(3):187-96.
43. Chou HW, Tzeng WC, Chou YC, Yeh HW, Chang HA, Kao YC, et al. Psychological morbidity, quality of life, and self-rated health in the military personnel. Neuropsychiatric Disease and Treatment. 2014;10:329.
44. Wozniak G. Risk of psychiatric morbidity among the medical and nursing staff of a greek public general hospital. J Depress Anxiety. 2014;4(169):2167-1044.1000169.
45. Roberts J, Lenton P, Keetharuth AD, Brazier J. Quality of life impact of mental health conditions in England: Results from the adult psychiatric morbidity surveys. Health and Quality of Life Outcomes. 2014; 12(1):6.
46. Serrano-Aguilar P, Ramallo-Fariña Y, Trujillo-Martín MDM, Muñoz-Navarro SR, Perestelo-Perez L, De Las Cuevas-Castresana C. The relationship among mental health status (GHQ-12), health related quality of life (EQ-5D) and health-state utilities in a general population. Epidemiology and Psychiatric Sciences. 2009;18(3):229-39.
47. Aghaei A, Khayyamnekouei Z, Yousefy A. General health prediction based on life orientation, quality of life, life satisfaction and age. Procedia-Social and Behavioral Sciences. 2013;84:569-73.
48. Afe J. Teacher education in Nigeria: Trends, issues and challenges. Nigerian Research Association Faculty of Education, University of Benin Benin City: Ilupeju Press Ltd; 1995.

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