African Journal of Social and Behavioural Sciences (AJSBS)
Volume 15, Number 4 (2025) ISSN: 2141-209X

SOCIO-DEMOGRAPHIC CORRELATES OF CAREGIVER BURDEN IN SCHIZOPHRENIA: A STUDY AT NEUROPSYCHIATRIC HOSPITAL ARO, NIGERIA

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ABSTRACT: This study assessed the level of care burden and its correlates among caregivers of patients with a diagnosis of schizophrenia in Neuropsychiatric Hospital Aro, Abeokuta, Ogun State, South-West Nigeria. The cross-sectional research survey design was used with a sample size of 244, which were randomly selected from the total population of caregivers and spanned over a period of four months. The socio-demographic questionnaire and Zarit Burden Interview (ZBI) were administered for data collection, while the Psychotic Module of MINI-Plus was used to re-validate the diagnosis of schizophrenia. The association between caregivers' socio-demographic variables and care burden was tested using chi-square while regression analysis was done to identify independent predictor(s) of care burden. Findings revealed that 17.2% of participants experienced **a** high burden, and those who spent 36 hours or more per week in the caregiving role had a significantly higher proportion (40.6%) of a high burden compared with those who spent less than 36 hours (8.9%) ($\chi^2 = 33.369$; df = 1; $p < 0.001$). It was discovered from the findings that primary caregivers of patients with schizophrenia experience a high degree of burden. For example, a greater proportion of high caregiver burden was found among caregivers whose duration of relationship with the patient was more than 30 years (26.0%) compared with those whose duration of relationship was 30 years or less (11.1%) ($\chi^2 = 9.181$; df = 1; $p = 0.002$). This study, therefore, serves as a reminder that aside from caring for our patients, there is an increasing need to improve the social support available to caregivers who are the "unseen patients" and whose well-being is inseparably intertwined with that of the patients.

Keywords: Care Burden, Caregiver; Schizophrenia, Mental Disorder, Nigeria

INTRODUCTION

Schizophrenia is a severe mental disorder that typically runs a chronic course. It is characterized by distortions in thinking, perceptions, emotion, mood, speech, sense of self and behaviour (Mishra et al., 2017). It is one of the most burdensome and stigmatised illnesses, especially with the promotion of deinstitutionalisation (Sharma & Sharma, 2017), whereby patients' relatives are expected to take responsibility for the care of patients in the community. As such, the disease is now perceived more as a source of stress for not only patients but also their family members, who shoulder the responsibility of taking care of the patients (Harmanci & Çetinkaya, 2016). The World Health Organization (WHO) defines caregiver burden as the emotional, physical, and financial demands and responsibilities of a patient's illness that are placed on family members, friends or any other significant person outside of the health care system (Kumar, 2009). It is a psychological state that arises from the combination of physical work and emotional and social pressure involved in caring (Adebayo, Somefun & Omobowale et al., 2025). Several studies have documented a high degree of objective and subjective burden on caregivers of patients with schizophrenia (Sharma, Sharma & Sharma, 2017; Gupta et al., 2015). The objective burden includes the practical day-to-day problems and issues related to having a family member with a mental illness, such as disruption of household routines, social activities and leisure, social isolation, financial and employment difficulties (Inogbo et al., 2017) while subjective burden includes the psychological and emotional impact of mental illness on family members, including experiences of grief, guilt, fear, worry, rejection, loss, prejudice, discrimination and stigma (Abayomi, Akinhanmi & Adelufosi. 2015). Despite the aforementioned, few studies, however, have identified some positive effects of caring for patients with schizophrenia (Rall, 2017; Chen & Greenberg, 2004).

Caregivers of patients with chronic mental health disorders such as schizophrenia bear a high risk of psychological health impairment, and the need to give attention to this group of people cannot be overemphasised. They also have a higher risk of decline in physical health with associated premature death than the general population (Semple & Smith, 2013). Quite a number of studies have been conducted on schizophrenia, but none has focused on the care burden experienced by caregivers, particularly at Neuropsychiatric Hospital Aro Abeokuta Ogun State. Hence, this study aims to fill the gap in the literature.

This study investigates socio-demographic predictors of caregiver burden among those caring for outpatients with schizophrenia at Aro Abeokuta. Upon completion, it will be a springboard or basis for appropriate intervention aimed at improving the well-being of caregivers of patients with schizophrenia and contributing to the body of knowledge in psychiatry.

Objectives of this Study

The main objective of this study is to assess the level of care burden and its correlates among caregivers of patients with a diagnosis of schizophrenia in Neuropsychiatric Hospital Aro, Abeokuta, Ogun State, South-West Nigeria. Specific objectives are to:

a Assess the socio-demographic characteristics of caregivers of patients with schizophrenia attending the outpatient clinic of Neuropsychiatric Hospital Aro Abeokuta Ogun State.
b Determine the level of care burden among caregivers of patients with schizophrenia.
c Determine the association between caregivers' socio-demographic variables and the burden of care.

METHODS

Study Design, Setting and Location

This study adopts a descriptive cross-sectional research survey. It is, therefore, relevant to note its causal inference limitation in order to guide a better understanding of its findings. The study populations were the caregivers of patients diagnosed with schizophrenia in the outpatient clinic of Neuropsychiatric Hospital Aro Abeokuta Ogun State, South-West Nigeria. The inclusion criteria of participants include caregivers whose ages ranged between 18 and 64 years, provided care for patients who were at least 18 years of age, at least 6 months on medication and follow-up care for schizophrenia without comorbid diagnosis and were willing to give informed consent. He or she may be an immediate family relative (Parent, spouse, sibling or child), non-immediate family relative (uncle, aunt, nephew, niece and cousin.) or non-relative (friends, neighbours and co-workers.), and he or she was not being paid for the services rendered.

He or she must have been living in the same household with the patient for at least 12 months and directly involved in giving care to the patient. He or she did not have a previous history of mental and/or chronic physical illness.

Sample Size

The study population comprises caregivers of patients with schizophrenia diagnoses who must have been attending the outpatient clinic for a minimum of 6 months. Statistics from the hospital's Medical Record Department revealed that 29,192 patients were seen at the clinic between 1 January 2020 and 31 December 2020. A total of 11,805 were being treated for schizophrenia (5,624 and 6,181 were males and females, respectively). Based on the use of the Cochran formula (infinite population size) (Bolarinwa, 2020), the standard normal deviate of 1.96 at 95% Confidence Interval (two-tail), the 16.5% prevalence rate of moderate degree of burden among caregivers of patients with schizophrenia (Dadson, Annor & Yendork, 2020), the desired degree of accuracy of 0.05, and a non-response rate of 15.8% in a similar study (Ukpong, 2012), a sample size of 244 was obtained.

Sampling Method

The caregivers were informed about the study and their voluntary participation was requested. They were subsequently assigned serial numbers and selected through a systematic random sampling technique. Thereafter, those who met the inclusion and exclusion criteria were given an Informed Consent Form to append their signature. 3 to 4 participants were recruited on each of the 4 clinic days in a week, and this procedure continued for the 4-month duration of this study in order to attain the sample size of 244.

Data Collection

Socio-demographic Variables Questionnaire

Researchers designed it to obtain information on the socio-demographic variables of caregivers. These variables included Gender, age, marital status, educational qualifications, occupational status, kinship, average hours with care recipient per week, adequacy of income, availability of social support, duration of relationship, etc. Average hours spent with care recipients by caregivers per week was dichotomised into <36 hours and ≥36 hours (Provencher et al., 2003).

Mini-International Neuropsychiatric Interview (MINI PLUS)

The psychotic module of MINI PLUS was used to revalidate the diagnosis of schizophrenia in the care recipients.

Zarit Burden Interview (ZBI)

The ZBI is a caregiver self-report measure and originated as a 29-item questionnaire (Zarit, Reever & Bach-Peterso, 1980). The revised version, however, contains 22 items. The ZBI-22 has a Cronbach's alpha of 0.93 and an intra-class correlation coefficient for test-retest reliability of 0.89 (Seng et al, 2010). It explores the negative physical, mental, social and economic consequences of caregiving. Each item on the interview is a statement that the caregiver is asked to endorse using a 5-point Likert scale. Responses are rated on a Likert scale of 0 (never) to 4 (almost always), with score ranging from 0–88. Scores between 0 – 20 indicate little or no burden, 21 – 40 is mild to moderate, 41 – 60 represents moderate to severe, and 61 – 88 implies severe burden (Dyck, Short, & Vitaliano, 1999). It has been widely used to assess caregiver burden in family members of patients with schizophrenia (Provencher & Mueser. 1997). It has been validated in Africans among informal caregivers of stroke survivors (Imarhiagbe, Asemota & Oripeaye. 2017) and caregivers of patients with schizophrenia (Awad & Voruganti, 2008). In Nigeria, it has been used by Yusuf et al., 2009; Ogunmodede et al., 2019; Inogbo et al., 2017; Adeosun. 2013 and Ukpong. 2006.

Data Collection Process

Each participant was privately administered the questionnaires (socio-demographic and ZBI). Data from participants' responses were coded and entered into the Statistical Products and Service Solutions (SPSS) version 25 for analysis.

Data Analysis

Data were analysed using SPSS version 25 Descriptive statistics was employed to describe socio-demographic characteristics of participants and to assess level of burden experienced by caregivers of patients with schizophrenia. Chi-square statistical tool was conducted to test for association between independent categorical variable (socio-demographic characteristics) and dependent categorical variable (care burden). Variables that were found to have a statistically significant association at $p < 0.05$ were selected for multivariate logistic regression in order to identify independent predictor(s) of care burden. The level of statistical significance was set at p-value < 0.05 at 95% Confidence Interval.

Ethical Consideration

This study was conducted following approval by the Health Research Ethics Committee (HREC) of Neuropsychiatric Hospital Aro Abeokuta Ogun State with approval number NHREC/08/01/2021. The purpose, procedure, benefits and other information about the study were explained to participants before they gave their written informed consent. The research procedure was also explained in the information sheet. International ethical norms and standards were upheld. Ethical guidelines on informed consent were maintained, and protocol was consistent with the principles of the 1964 Declaration of Helsinki and its later amendments in 2013.

RESULT

Socio-demographic characteristics of caregivers

As shown in Table 1, the participants' age ranged between 20 and 63 years with a mean age of 44.7 years and standard deviation of 12.0. Slightly more than a quarter (26.2%) spent 36 hours or more per week in the caregiving role (this dichotomization was based on a similar study by Provencher et al., 2003). Just about two-fifths (41.0%) shared a relationship with a patient that lasted more than 30 years.

Table 1: Socio-Demographic Characteristics of Caregivers

Variable	Frequency	Percentage (%)
Age (Mean ± SD)	(44.7±12.0)	
Age Group (Years)		
< 40	85	34.8
≥ 40	159	65.2
Gender		
Male	117	48.0
Female	127	52.0
Marital Status		
Single	58	23.8
Married	143	58.6
*S/D/W	43	17.6

Level of Education		
None/Primary	26	10.7
Secondary	104	42.6
Tertiary	114	46.7
Ethnicity		
Yoruba	147	60.2
*Non-Yoruba	97	39.8
Religion		
Christianity	159	65.2
Islam	85	34.8
Employment Status		
Employed	218	89.3
Unemployed	26	10.7
Monthly Income		
<₦30,000 ($70.8)	22	9.0
≥₦30,000	222	91.0
Duration of Care		
≤60 months	206	84.4
>60 months	38	15.6
Hour of Care per Week		
<36 hours	180	73.8
≥36 hours	64	26.2
Duration of Relationship		
≤30 years	144	59.0
>30 years	100	41.0
Relationship with Patient		
Father/Mother/Sibling	149	61.1
Spouse/Child	85	34.8
*Others	10	4.1
Source of Income		
Self	146	59.8
*Others	98	40.2
Adequacy of Income		
Yes	193	79.1
No	51	20.9

Support for Patient		
Not supported	61	25.0
Supported	183	75.0

Source: *Research survey 2023; *S/D/W: Separated/Divorced/Widowed, *Non-Yoruba: Igbo, Hausa, Egede, Esan and Urhobo; *Others (Relationship with Patient): Aunt, Uncle, Cousin and Friend, *Others (Source of Income): Parent, Children, Sibling and Spouse.*

Table 2 Prevalence of caregivers' burden

As shown in Table 2, the mean burden score was 31.84 ± 9.07 (mean ± SD). More than a tenth (13.9%) had little or no burden, 68.9% had mild to moderate burden, 16.4% had moderate to severe burden, and 0.8% had severe burden. The ZBI scores were further dichotomised into low burden (0 to 40) and high burden (41 to 88), as done in a previous similar study (Ogunmodede et al., 2019). Overall, 17.2% had high burden.

Caregiver Burden	**Frequency**	**Percentage**
Burden Score (Mean ±SD)	31.84±9.07	
Little or no Burden (Zarit Burden score 0 – 20)	34	13.9
Mild to Moderate Burden (Zarit Burden score 21 – 40)	168	68.9
Moderate to Severe Burden (Zarit Burden score 41 – 60)	40	16.4
Severe Burden (Zarit Burden score 61 – 88)	2	0.8
Caregiver Burden (Dichotomized)		
Low Burden (Zarit Burden score 0 – 40)	202	82.8
High Burden (Zarit Burden score 41 – 88)	42	17.2

Source: *Research survey, 2023.*

Association Between Socio-Demographic Characteristics Of Caregivers and Caregiver Burden

As shown in Table 3, a significantly higher proportion of those who spent 36 hours or more per week in the caregiving role (40.6%) had an assessment of high caregiver burden compared with those who spent less than 36 hours (8.9%) ($\chi^2 = 33.369$; df = 1; $p < 0.001$). A greater proportion of high caregiver burden was found among caregivers whose duration of relationship with the patient was more than 30 years (26.0%) compared with those whose duration of relationship was 30 years or less (11.1%) ($\chi^2 = 9.181$; df = 1; p = 0.002).

Table 3: Association between socio-demographic characteristics of caregivers and caregiver burden

VARIABLE	LOW BURDEN n (%)	HIGH BURDEN n (%)	χ2	df	p-value
Age Group (Years)					
<40	68(80.0)	17(20.0)	0.711	1	0.399
≥40	134(84.3)	25(15.7			
Gender					
Male	99(84.6)	18(15.4)	0.527	1	0.468
Female	103(81.1)	24(18.9)			
Marital Status					
Single	49(84.5)	9(15.5)	1.347	2	0.510
Married	120(83.9)	23(16.1)			
S/D/W	33(78.7)	10(23.3)			
Level of Education					
None/Primary	18(69.2)	8(30.8)	3.945	2	0.139
Secondary	89(85.6)	15(14.4)			
Tertiary	98(83.3)	19(16.7)			
Ethnicity					
Yoruba	117(70.6)	30(20.4)	2.649	1	0.104
Non-Yoruba	85(87.6)	12(12.4)			
Religion					
Christianity	133(83.6)	26(16.4)	0.237	1	0.626
Islam	69(81.2)	16(18.8)			

Employment Status					
Employed	181(83.0)	37(17.0)	0.083	1	0.773
Unemployed	21(80.8)	5(19.2)			
Monthly Income					
<₦30,000 ($70.8)	18(81.8)	4(18.2)	0.016	1	0.900
≥₦30,000	184(82.9)	38(17.1)			
Duration of Care					
≤ 60 Months	174(84.5)	32(15.5)	2.617	1	0.106
>60 Months	28(73.7)	10(20.3)			
Relationship with Patient					
Father/Mother/Sibling	119(79.9)	30(20.1)	3.543	2	0.170
Spouse/Child	73(85.9)	12(14.1)			
Others	10(100.0)	0(0.0)			
Source of Income					
Self	125(85.6)	21(14.4)	2.042	1	0.153
Others	77(78.6)	21(21.4)			
Adequacy of Income					
Yes	164(85.0)	29(15.0)	3.100	1	0.078
No	38(74.5)	13(25.5)			
Support for Patient's Care					
Not Support	50(82.0)	11(18.0)	0.038	1	0.845
Supported	152(83.1)	31(16.9)			
Hour of Care per Week					
<36 hours	164(91.1)	16(8.9)	33.369	1	<0.001
≥36 hours	38(59.4)	26(40.6)			
Duration of Relationship			9.181	1	0.002
≤30 years	128(88.9)	16(11.1)			
>30 years	74(74.0)	26(26.0			

Source: *Research survey, 2023.*

Socio-Demographic Variables as Independent Predictor of Caregiver Burden

As shown in Table 4, caregivers who spent 36 hours or more per week in the caregiving role were 5.92 times more likely to have an assessment of high burden compared with those who spent less than 36 hours, and this was found to be an independent predictor of caregiver’s burden (OR=5.92; 95%CI= 2.57, 13.62 $p < 0.001$).

Table 4: Logistic regression analysis for independent predictor of caregiver burden

VARIABLE	OR. EXP(B)	95% CI	p-value
Hour of Care Weekly			
≥36 hours	5.92	2.57, 13.62	**<0.001**
<36 hours	1.00		
Relationship Duration			
>30 years	2.36	1.01, 5.51	0.05
≤30 years	1.00		

Source: *Research survey, 2023.*

DISCUSSION

Close to one-fifth (17.2%) of caregivers were found to have experienced a high burden in this study. This is in contrast with 11% reported in a study of caregivers of patients with chronic medical illness (Type-2 Diabetes Mellitus) in which the same instrument was used in assessing for caregiver burden (Ogunmodede et al., 2019). This finding suggests that caregivers of patients with chronic mental illness could potentially experience a higher degree of caregiver burden compared to those with chronic physical illness. This was in tandem with the findings of a study in which the caregiver burden of patients with mental disorders was compared with that of caregivers of patients with hypertension. The study reported a mild to severe burden of 57.7% and 14.3% for caregivers of patients with mental disorders and hypertension, respectively (Osundina et al., 2017). The higher prevalence of caregiver burden of patients with mental illness may be due to the extra burden of taking care of someone who may lack insight into the state of his or her health, unlike in patients who are suffering from physical illness (Kumar, Kumar & Padma, 2019). Lack of insight into care recipients may be detrimental to the sense of fulfilment derived by caregivers from mutuality and reciprocity of care, thus worsening the experience of caregiving for caregivers of patients with schizophrenia (Hsiao, Lu & Tsai, 2020). Inogbo et al. (2017) found a higher prevalence of 22.8% among first-degree relatives of patients with schizophrenia, while a much higher prevalence of 47.3% and 47.2% were reported by Yusuf et al. (2019) and Mishra et al. (2017), respectively. Though variation in the prevalence of care burden may be due to methodological and socio-demographic differences but these findings underscore the stance that caregivers of patients with schizophrenia experience a high degree of burden.

Caregivers who spent 36 hours or more per week in the caregiving role were found to be almost six times more likely to experience high burdens compared to those who spent less than 36 hours. A similar finding was reported in a Nigerian study amongst caregivers in a psychiatric outpatient unit where the number of hours spent with patients was found to be positively correlated with the higher experience of burden (Oshodi et al., 2012) and Ajibade et al., (2016). It was also consistent with the report of a study done in Switzerland amongst caregivers of patients with schizophrenia in which Lauber et al. opined that caregivers who reside with patients or spend a greater amount of time with patients experience greater distress (Lauber et al., 2003). Also, Nicholas et al., in a study of Mexican Americans caring for relatives with schizophrenia, reported that Emotional Involvement (EOI), which tends to be more among caregivers who spend more time with their care recipients, was associated with greater burden and use of less instrumental support (Nicholas et al., 2009). Similarly, Scazufca and Kuiper reported a significant positive correlation between caregivers with high Expressed Emotions (EE) and caregiver burden. They also noted that they were less likely to be in employment than caregivers with low-EE (Scazufca et al., 1996); this may give credence to the observation stated earlier that caregivers with EOI tend to spend more time with their care recipient as their unemployment status may make them more likely to be devoted to rendering care; thus, spending much more time in the caregiving role (Koujalgi & Raghavendra, 2016).

Approximately two in every five caregivers shared more than 30 years of relationship with patients, which indicates a patient-caregiver characteristic in which each of them is at least 31 years of age. This variable was found to have a statistically significant positive correlation with high care burden. This finding is congruent with Koujalgi et al. (2016), who reported a statistically significant positive correlation between a patient's advanced age ($r = 0.239$, $P < 0.017$) and care burden as well as the caregiver’s advanced age ($r = 0.226$, $P < 0.034$) and care burden. Long-standing relationships between caregiver and care recipient may be associated with more burden due to a higher tendency for the caregiver to be more emotionally connected to the care recipient and, thus, more likely to deploy emotion-focused coping than problem-focused coping in dealing with the stress arising from the caregiving role.

Limitation and Strength

For a more realistic approach, the findings reported in this study are better interpreted in light of the following limitations: First, it is a cross-sectional epidemiological study design which precludes a causal explanation for the relationship between care burden and socio-demographic variables. Also, the possibility of reverse causality cannot be excluded from these associations. Secondly, because this study was limited to caregivers of patients with schizophrenia attending the outpatient clinic in one psychiatric hospital in Nigeria, extrapolating the study findings to all primary caregivers of patients with schizophrenia in Nigeria must be done cautiously. Thirdly, since it was a hospital-based study, its findings regarding caregivers may not necessarily reflect what is obtainable among caregivers in the community.

Despite these limitations, this study is one of the few studies in this environment to assess for and explore socio-demographic correlates of care burden among primary caregivers of outpatients with schizophrenia. This can serve as a basis for future research work investigating these variables especially in this environment. It provides additional empirical evidence to the documented burden of caring for persons with schizophrenia.

Conclusion

This study assessed the level of care burden and socio-demographic correlates among primary caregivers of outpatients with schizophrenia, and its findings support previous research works that primary caregivers of patients with schizophrenia experience a high degree of burden.

Spending 36 hours or more per week in the caregiving role and having a duration of relationship with the patient that is more than 30 years were found to have a statistically significant positive correlation with care burden. The former variable was also noted to have independently predicted care burden. This study, therefore, serves as a reminder that aside from caring for our patients, there is an increasing need to improve the social support available to caregivers who are the "unseen patients" and whose well-being is inseparably intertwined with that of the patients. The findings in this study suggest the need for an integrated caregiver support system within outpatient psychiatric care.

Recommendations

Considering the findings from this study that caregivers of patients with schizophrenia experience a high degree of burden with some significantly associated socio-demographic variables, the following recommendations are hereby suggested:

1. Health education programmes should be routinely given to patients as they come for follow-up care and specifically targeted at caregivers, as such programs have the potential to equip them with knowledge and understanding of the task of caregiving.
2. Caregivers who are at higher risk of burden (spend longer duration of hours per week with patient) should raise clinicians' index of suspicion, prompt an objective assessment of caregiver burden and make appropriate referrals for caregiver support services when necessary.

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