PHYSICAL AND MENTAL HEALTH CORRELATION: QUALITY OF LIFE ASSESSMENT AMONG INFORMAL CAREGIVERS OF PATIENTS WITH MENTAL ILLNESS IN SOUTH WEST NIGERIA

Abstract

Purpose: The aim of the study is to examine time dependence burden, emotional health burden, development burden, social relationship burden, physical health burdens and anxiety as correlates of physical and mental health – related quality of life among informal caregivers of patients with mental illness in South West Nigeria.

Methods: In a hospital-based cross-sectional study, a convenient sample 275 (43% male and 57% female) informal caregivers currently involved in providing care, between ages 16 and 76 *(M* = 43.42, *SD* = 14.26*)* participated in the study. A preliminary analysis was carried out to examine relationship between the variables of the study using bivariate correlation analysis. Multiple regression analysis computed indicated that all predictor variables jointly contribute to physical and mental health - related quality of the informal physical caregivers.

Results: The entire predictor variables jointly predict physical health – related quality of life among the informal caregivers [$R^2 = .20$, $F(6, 268) = 11.30$; $P<.01$;] as well as mental health – related quality of life among the informal caregivers [$R^2 = .37$, F (6. 268), = 26.32: $P< .01$]. Independently, anxiety ($\beta = -.17, P <.05$) , development burden ($\beta = .27, P<.01$), and physical health burden ($\beta = -.36, P<.01$) predicted physical health-related quality of life, also anxiety ($\beta = -.37$, $P< .01$), time dependence burden ($\beta = -.12$, $P <.01$), development burden ($\beta = .21$, $P < .05$) and physical health burden ($\beta = -.29$, $P < .01$) independently predict mental health – related quality of life.

Conclusion: Informal caregivers must pay greater attention to their physical as well as mental health while providing care to their family members with mental illness, thus preventing themselves from developing psychological or physical illness that can prevent them from continuing in their roles as caregivers.

Keywords: Quality of life, physical health - related, mental health – related, Mental illness, Informal caregiver, Nigeria.

Introduction

To many mentally ill patients, informal caregiving is often a long term engagement, especially if it is being done by family members, who are largely unpaid. The burden of providing care to a family member over a long period of time can be overwhelming and negatively impacting on the caregiver's health [1]. Informal caregivers are likely to report physical problems which include sleep disturbance, fatigue, pain, loss of physical strength, loss of appetite, and weight loss [2, 3], they may in addition experience poorer mental health [4, 5].The huge burden that many mental illnesses exert on the care receivers as well as informal caregiver can compromise the health of those caregivers.

The physical and mental health related quality of life of the informal caregiver is as important as the physical and health related quality of life of the care receiver, but information on the physical and mental health – related quality of informal caregivers is limited especially in developing countries. The wellbeing of the informal caregivers can be compromised especially when the resources available to them are limited. Informal caregivers' health can also be affected negatively by the burden associated with providing care to someone with mental illness. Caregiver burden is a multidimensional concept which comprises social, emotional, relationship, and financial dimensions, [6], but can also include time and physical dimensions. Caregiver burden is defined as a psychological state that develops from the combination of physical, work, emotional and social pressure involved in caring [7]. Caregiver burden often presents as physical and mental challenges, and informal caregivers most times will experience symptoms such as anxiety and depression, in addition they can experience many economic and job challenges.

The literature presents evidence that the informal caregiving burden impacts on the physical and mental health [7, 8], social relationships [8, 10, 11], and the financial life [8, 10, 11] of caregivers. In addition, caregiver burden has a link to psychological morbidity [11], reduced time for leisure, excess work, and burnout of caregivers [12]. Because of their experience while providing care, they are likely to be frustrated, angry, embarrassed, fearful, sad, and stressed out arising from the behavior of patients [13, 14], as well as an inimical attitude toward the care recipient. [10].

Apart from caregiver burden, anxiety is another factor that could impact negatively on the physical and mental health - related quality of life of informal caregivers. Anxiety may emanate from the uncertainty about the prognosis of the illness and the duration they will be engaged in informal caregiving duty. A study conducted in Pakistan also found significantly elevated levels of anxiety among informal caregivers of patients with mental illnesses; there was also a gender dimension as gender differences were observed [15]. Informal caregivers can also suffer other debilitating consequences of caregiver burden such as: depression, anxiety, stress and burnout, family dysfunction, social isolation ([16, 17].

This study aimed at investigating the extent of influence of time dependence burden, social relationship burden, physical burden, emotional burden and development burden and anxiety on the physical and mental health-related quality of life, independently and jointly, on informal caregivers.

Methods

Research design

The study is a hospital - based cross-sectional survey, in which the joint and independent contributions of the predictor variables were examined on the response variables. The independent variables were, age, anxiety, time dependence burden, emotional burden, development burden, social relationship burden and physical burden. The dependent variables were physical health component and mental health components of health-related quality of life.

Description of Setting

The setting for the study cut across four out of the six states in the South Western, Nigeria, the states been randomly selected through a ballot method, while health institutions providing mental health service in each state were purposely selected. This provided access to the informal caregivers of the patients in the selected health institutions. The study's setting comprised of two conventional tertiary health institutions with mental health departments and three tertiary mental health institutions. These were Ekiti State University Teaching hospital, Ado-Ekiti, Ekiti State, Federal Teaching Hospital, Ido-Ekiti, Ekiti State; Neuro-Psychiatry Hospital, Akure, Ondo State; Neuro Psychiatry Hospital, Aro, Abeokuta, Ogun State, and Federal Neuro Psychiatry Hospital, Yaba, Lagos State.

Participants

A total of 275 participants were drawn from informal caregivers of in-patient with mental illness who were on admission in the different health institutions as at the time of data collection for the study. The participants included 119 (43%) males, and 156 (57%) females, aged between 16 and 76

(*M= 43.42*, *SD = 14.26*). In terms of employment status, 166 (60%) of the participants were employed, 76 (28%) were unemployed, and 33 (12%) were retired.

Instruments

Each participant was interviewed by either the researchers or research assistants who have been trained for the purpose. The questionnaire had a demographic section as well as State-Trait anxiety questionnaire form Y-1, Caregivers Burden inventory measuring time-dependence burden, developmental burden, physical burden, social burden, and emotional burden and SF-36 questionnaire measuring the eight dimensions of psychological wellbeing. Demographic variables include age, gender, employment status and ethnicity.

Anxiety was assessed using State-Trait Anxiety Inventory (STAI) form Y-1 developed by Charles D. Spielberger, 1983. It is a commonly used measurement for state of anxiety i.e., transient levels of anxiety [19]. The total score obtainable ranges from 20 — 80 for each test. The higher the score on STAI the greater the severity of the anxiety [20], the reliability coefficient for this present study is .92.

Caregiver burden was measured using caregiver burden inventory [21]'s multidimensional instrument. The CBI is designed to assess the feeling of burden experienced by caregivers of mental health patients. It consists of 24 items that assess the following burden factors in care giving: time-dependence burden, developmental burden, physical burden, social burden, and emotional burden. For the present study the reliability coefficients was, time dependence burden .86, emotional health burden .86, development burden .77, social relationship burden .83, and physical health burden .82.

Physical and Mental health – Related Quality of Life was assessed using the SF - 36 questionnaire developed by [22]. The study focuses on the physical health – related quality of life and mental health – related quality of life rather than the overall quality of life of the participant. The physical health – related quality of life was measured as the composite score for the four subscales measuring the physical health, these include; physical functioning scale, role limitation (P) scale, bodily pain scale and general health scale, while the mental health – related quality of life was measured using the composite score for four subscales measuring mental health: the role limitation (E) scale vitality scale, emotional wellbeing and social functioning scale. The reliability coefficients in this study was: physical functioning .93, role limitation (Physical) .63, bodily pain .77, general health .82 role limitation (emotional) .73, vitality .50, social functioning .70, and emotional wellbeing .77.

Ethical Considerations and Procedure

Ethical approval was obtained by the authors from all the five health institutions and permission was sought from the supervisors or the Head of the Units where the patients were admitted to speak with their informal caregivers especially when they visited the care recipients. All the participants were informed verbally as well as in writing through an informed consent form designed for the purpose of the study, which also sought their permission to be part of the study while it expressly stated their right to withdraw from the study if and when they wished and for whatever reason. Each participant in the study volunteered to participate in the study without coercion. All participants in the study were interviewed by the researchers or the trained research assistants. A total of 310 questionnaires were distributed, 286 questionnaires were returned, but only 275 were properly filled and returned. In view of the above the response rate is about 89%.

Data analysis

Data collected in the study were subjected to statistical analysis using SPSS software (24th versions). Demographics were analyzed using some descriptive statistics such as frequency distribution, mean, standard deviation and percentages. Bivariate correlation statistics was computed to establish relationships between variables in the study. Multiple regression was also computed to determine the independent and joint contributions in explaining health and mental health. Results were regarded as significant at 0.05 or 0.01 levels.

Results

Bivariate correlation

Table 1 presents results the on inter-relationships between variables in the study. Anxiety significantly and positively correlated to time dependence burden ($r = .48; P<0.01$), emotional health burden ($r = 0.34; P<0.01$), development burden ($r = .50; P<0.01$), social relationship burden ($r = .34; P<0.01$), physical health burden ($r = .55; P<0.01$), and significantly negatively correlated to the physical health component ($r = -.31; P <0.01$) and mental health component ($r = -.53; P<0.01$) respectively. Time dependence burden was significantly positively correlated to emotional health burden ($r =.17; P<0.01$), development burden ($r =.38; P<0.01$), social relationship burden ($r =.35; P<0.01$), physical health burden($r =.39; P<0.01$), but significantly negatively correlated to physical health component ($r = -. 21; P<0.01$) and mental health component ($r = -.38; P<0.01$) respectively. Emotional health burden positively correlated to development burden ($r =.52; P<.01$), social relationship burden ($r =.34; P<.01$), physical health burden ($r =.40; P<.01$), but negatively correlated to physical health component ($r = -. 16; P<.01$) and mental health component ($r = -.21; p<.01$) respectively. In addition, it was found that development burden wasn't related to physical health component ($r = -.11; P>.05$) but was positively related to social relationship burden ($r =.42;$

$P<.01$), physical health burden ($r =.59; P<.01$), and negatively related to mental health component (r = -.25; P<.01). Social relationship burden was found to have positive relationships with physical health burden ($r =.46; P<.01$), and negatively correlated to physical health component ($r = -.24; P<0.01$) and mental health ($r = -.33; P<.01$) respectively. The results further revealed that physical health burden was negatively related to physical health component ($r = -.38; P<.01$) and mental health component ($r = -. 48; P<.01$) respectively. Finally, physical health was positively and significantly correlated to mental health component ($r = .78; P<.01$).

Table 1 *Mean, Standard Deviation and correlation matrix between variables in the study, N = 275*

Variable	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*
Anxiety	-							
Time Depend. Burden	.48**	-						
Emotional Heal. Burden	.34**	.17**	-					
Development Burden	.50**	..38**	.52**	-				
Social Rel. Burden	.34**	.35**	.34**	.42**	-			
Physical Health Burden	.55**	.39**	.40**	.59**	.46**	-		
Physical Health Com.	-.31**	-.21**	-.16**	-.11	-.24**	-.38**	-	
Mental Health Com	-.53**	-.38**	-.21**	-.25**	-.33**	-.48**	.78**	-
M	47.45	9.74	7.41	11.35	6.51	6.61	67.10	60.15
SD	14.35	4.82	4.82	4.72	4.34	3.65	22.98	21.95

Note: M = mean, *SD* = standard deviation, ** $p <0.01$, * $p <0.05$

Table 2 Summary of simple regression analyses for variables predicting physical health component and mental health components

	PCS			MCS		
Variables	B	SEB	β	B	SEB	β
Anxiety	-.27	.11	-.17*	-.57	.10	-.37**
Time Dependence Burden	-.26	.34	-.05	-.60	.28	-.12**
Emotional Health Burden	-.27	.31	-.06	-.07	.27	-.02
Development Burden	1.32	.37	.27**	.98	.32	.21*
Social Relationship Burden	-.49	.34	-.09	-.56	.29	-.11
Physical Health Burden	-2.26	.47	-.36**	-1.77	.40	-.29**
R^2		.20			.37	
F		11.30**			26.32**	

$*p<0.05$, $**p<0.01$

As table 2 shows, all the predictor variables jointly predicted the physical health components: [R^2 = .20, F (6, 268) =11.30; P<.01;] independently, only anxiety (β = -.17, P =.05), development burden (β= .27, P<.01) and physical health burden (β = -.36, P<.01) predicted physical health component. In addition, all the predictor variables jointly predicted mental health component [R^2 = .37, F (6. 268), = 26.32: P< .01]; In terms of independent contribution, anxiety (β = -.37, P< .01), time dependence burden (β = -.12, P <.01), development burden (β = .21, P < .05) and physical health burden (β = -.29, P < .01) independently predicted mental health component

Discussion

The study investigates the individual and combined contribution of anxiety, time dependence burden, emotional health burden, development burden, social relationship burden and physical health burden among informal caregivers of patients with mental illness. The findings indicate that all the predictor variables jointly contribute significantly to the physical and mental health – related quality of the informal caregiver. The joint contribution of the predictor variables to the physical health and mental health are 11% and 26% respectively, showing a degree of influence on their health – related quality of life. This finding suggests the importance of psychological factors examined as they influence the physical and mental health – related quality of life of the person providing unpaid care services to family members who are mentally ill. In this study, anxiety was negatively related to both physical and mental health – related quality of life for the informal caregivers, indicating that increased anxiety might lead to a reduction in the physical and mental health – related quality of life of the informal caregivers. This agrees with an Iranian study which found that anxiety and depression posed a significant challenge to the physical and mental health of the informal caregivers of patients with mental illness [23]. A study by [24] reported that about thirty percent of the caregivers reported low level of psychological wellbeing as well as sixty- six percent of the caregivers in the study reported a moderate level of psychological wellbeing.

Time dependence burden (i.e., the perceived burden as a result of restrictions placed on a caregiver's time by the demands of caring for the care receiver [25], was negatively associated with only the mental health component of the health – related quality of life indicating that mental health outcomes decrease when the time dependence burden increases. The informal caregiver may experience time dependence burden due to the time they have to commit to providing care for the care receiver which is likely to affect the time they have left to spend on some other important activities.

Surprisingly, development burden (i.e. perceived feelings by the care provider that they are out of touch with their peers or feelings of missing out on life) [25] was positively related to physical and mental health component of the health – related quality of life among the informal caregivers, indicating that despite the perceived feeling of missing out on life, their physical and mental health –

related quality of life keep improving. The probable explanation for the above finding could be related to the fact that some informal caregivers who report positive outcome may have developed good coping strategies to cope with the fact that they are missing out of life, by placing more value on the relationship with care recipient rather than peers or friends.

The physical health burden was negatively related to both component of health – related quality of life. The above indicates that an increase in the physical burden i.e.(increase in chronic fatigue or damage to physical health of care provider as a result of the demands of providing care for the patient [25], will lead to a reduction in the physical and mental health – related quality of life of the informal caregivers'. The above finding can be explained by the strain or stress that comes with the provision of informal care which will naturally affect the caregiver both physically and mentally. This finding is supported by a similar study conducted among informal caregivers of patients with mental illness where it was reported that family burden measure as physical and emotional burden had a significant negative correlation with psychological wellbeing [24]. Also corroborating the above, a negative relationship was reported between caregiving burden and family wellbeing [26]

Conclusion

The following conclusions were drawn in tandem with the findings of this research: that anxiety, time burden, emotional burden, development burden, social relationship burden and physical health burden all exert a negative impact on the physical health – related quality of life as well as mental health – related quality of life of the informal caregivers of patients with mental illness.

Recommendations

In order to have continued informal care and support for the mental ill patients, formal caregivers must always put into consideration the various challenges that their treatment plan is likely to pose for the informal caregivers. The availability of the informal caregiver to continue to provide care for the care recipients is strongly related to their physical and mental health – related quality of life. Therefore, informal caregivers should be given all necessary support, including but not limited to psycho-education, medication compliance education, providing information at every stage of the treatment, post discharge care strategies etc.

Limitation

The study is limited, having relied on cross sectional data. The method of questionnaire administration/data collection could also reduce the accuracy of responses since it was interviewer administered. In addition, the survey is from one region of the country, this may limit the extent to which one can make generalization with the data.

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