Original Research Article

CAREGIVER BURDEN AMONG CARERS OF WOMEN WITH GYNAECOLOGICAL CANCERS

ABSTRACT

Background: Caring for patients with gynaecological cancer is often enormous and prolonged and can significantly affect the psychological, emotional, functional, and even physical health of caregivers.

Objectives: To evaluate the level of caregiver burden and determine the factors associated with it among primary caregivers of gynaecological cancer patients at the University of Port Harcourt Teaching Hospital.

Materials and Methods: This was an institutional-based prospective cross-sectional study conducted at the gynaecologic oncology unit of the University of Port Harcourt Teaching Hospital between July 1, 2023, and December 31, 2023, on 49 primary caregivers of patients with gynaecological cancers by convenient sampling. A pretested semi-structured interviewer-administered questionnaire which included socio-demographic and caregiving-related factors and the short form Zarit Burden Interview version 12 (ZBI-12) was used for data collection after its validity and reliability were determined. A score above 20 was considered a high level of burden. Data was analyzed using SPSS 28.0 software with descriptive and analytic statistics, and the level of significance was considered at p value $\leq$ 0.05.

Results: The mean age of caregivers was 40.4 ± 11.6 years. The mean score of the Zarit Burden Interview was 31.75 ± 19.14. About one-third 17 (33.3%) were frequently stressed between caring for relative and trying to meet other responsibilities, almost half (45.1%)

reported that they sometimes do not have as much privacy as needed and 24 (47.1%) were quite frequently doing more for the patient, with 24 (47.1%) 13.7% of the patients moderately dependent on caregivers. Most 35 (68.6%) of the caregivers had a high burden of care using the short form Zarit Burden Interview version 12. Missing job due to caregiving role (X2=9.495, P=0.002), the residence of the caregivers (X2=7.556, P=0.006) and menopausal status (x2=24.238, p<0.001) were significantly associated with the level of burden.

Conclusion: The caregivers of gynaecological cancer patients have a high level of burden. The predictors of this burden should be considered to reduce caregiver burden and improve the quality of lives of both patients and their caregivers.

Keywords: Gynaecological cancers, Caregiver, Care burden, Zarit Burden Interview, Port Harcourt, Nigeria

1. INTRODUCTION

Gynaecological cancers are among the most common cancers diagnosed in women worldwide [1]. According to the recent global cancer statistics, more than 1.39 million women have been diagnosed with a gynaecological cancer in 2020, while 671,920 women have died from this disease [1]. These statistics suggest that gynaecological cancers are a serious health problem affecting women globally. The five main types of gynaecological cancers are cervical, ovarian, uterine, vulval and vaginal cancer [2]. These cancers originate in the reproductive organs of women [3]. The symptoms experienced before a diagnosis of gynaecological cancer is made depends on the location of the disease. Informal caregivers play an important role in a patient's illness trajectory because they provide the patient with physical, emotional, and financial support [4]. Informal caregivers are defined as individuals who provide patients with uncompensated assistance on a regular basis.[5] These caregivers are often well acquainted with the patient. Thus, informal caregivers are often the parent, spouse, sibling, adult children, and relatives [5]. Research suggests that these caregivers fulfil multiple roles and need to adapt to the needs of the patient [6,7]. Nigeria has limited specialized human resources and facilities for cancer care as patients present in advanced stages of the disease,4 so the burden of caregiving rests on the family members [8].

The American gerontologist, Zarit first defined the burden of care as “the discomfort experienced by the principal caregiver of a family member, including the caregiver’s health, psychological and emotional well-being, finances, and social life” [9,10]. Caregiver burden is defined as “emotional, social and financial stress on patients” [11] or “multidimensional biopsychosocial reaction due to imbalances demanded by official care sources in caregivers’ individual time, social roles, physical and emotional well-being, economic resources, and many other roles they fulfill [12].” Psychosocial stress emphasized in the definition of caregiver burden5 shows the possible relationship with the concept of quality of life, which includes both physical and psychosocial components [13]. The studies reported that the quality of life of caregivers was negatively affected during caregiving of cancer patients [14-17].

In the literature, there are studies investigating anxiety, depression, economic distress, care burden, sleep problems, fatigue levels, and impaired quality of life experienced by cancer caregivers but the number of studies conducted with patients with gynaecologic cancer is limited [18-20]. There is a significant reciprocal relationship between the emotional distress of cancer patients and their caregivers [21,22]. Thus, the management of cancer patients would be compromised if the caregivers’ well-being is affected [23]. Despite caregiving has a significant impact on the caregivers’ well-being, the needs of the caregivers are often overlooked or considered secondary to those of the patients by healthcare professionals [24-27]. Caregivers’ burden in this study is assessed using the short form Zarit Standardized Scale [9]. Studies in the developed countries had established that informal caregivers of patients with cancer are vulnerable to all kinds of psychological (e.g., anxiety, stress, depression) and physical (e.g., burn-out, increased mortality, loss of weight, poor immune functioning, and insomnia) burden [16,17]. However, there is little information about challenges facing the informal caregivers of patients with cancer in sub- Saharan region of Africa, Nigeria inclusive [28]. Hence, the study sought to determine the level of caregiver burden and the factors associated with it among primary caregivers of gynaecological cancer patients.

2. MATERIALS AND METHODS

2.1 Study Site

This study was conducted at the Gynaecology ward, Gynaecologic Oncology, and Radiation and Clinical oncology out-patient clinics of the University of Port Harcourt Teaching Hospital (UPTH). The University of Port Harcourt Teaching Hospital is a 988-bed hospital in Alakahia, in Obio-Akpor Local Government Area of Rivers state. It is a tertiary hospital that serves as a referral centre for all levels of healthcare in Rivers state and other neighbouring states including Bayelsa, Imo and Abia. The gynaecological oncology clinic runs every Friday, while the radiation and clinical oncology clinic run every Tuesday, both led by consultants. Patients are evaluated at the clinic before they are admitted into the gynaecogical ward for surgery. Following surgery, they are co-managed with the radiation and clinical oncologist for administration of chemotherapy and subsequent follow-up.

2.2 Methods

A descriptive facility-based cross-sectional study of all primary caregivers of women with histological diagnosis of gynaecological cancer managed at the University of Port Harcourt Teaching Hospital between July 1, 2023, and December 31, 2023. The purpose and process of the research were explained to them, they were asked to sign a written informed consent form. A total of 49 caregivers who were primarily responsible for the care of patients with gynaecological cancers, above 18 years, and agreed to participate in the study voluntarily were included in the study. Caregivers who were paid, refused consent, with comorbidities that involved a heavy burden, which increased their physical vulnerability. and those with communication difficulties were excluded from the study. An interviewer-administered semi-structured questionnaire and Zarit Burden Interview (ZBI) tool were used to collect data from the caregivers. The questionnaires took about 20 minutes to complete. Ethical approval for the study was obtained from the Ethics and Research Committee of the University of Port Harcourt Teaching Hospital.

2.3 Study Instrument

2.3.1 Data Collection Tool

A data collection tool designed for this purpose was used to obtain socio-demographic of the caregiver. The functional status, reproductive, clinical, medical, family, and social characteristics of the patient were also obtained. A pretest to ascertain the validity and reliability of the data collection tool was conducted at the River State University Teaching Hospital prior to the commencement of the study.

2.3.2 Zarit Burden Interview (ZBI)

The ZBI is a 12-item questionnaire that is scored on a 5-point Likert scale. Each question is scored from 0 to 4, where zero = never, one = rarely, two = sometimes, three = quite frequently, and four = nearly always. The total ZBI was obtained by adding all the scores for the 12 questions with a range of 0 to 48, with higher scores suggesting higher burden.[9] The Cronbach's alpha was 0.99 in this study.

2.4 Statistical Analysis

Each questionnaire retrieved was coded serially and entered into a spreadsheet. The Statistical Package for the Social Sciences (SPSS) version 25 was used for data analysis. The data entered were cleaned and subjected to descriptive (i.e. mean and standard deviation) and inferential (i.e. chi-square) analysis. Statistically significant variables were further subjected to binary logistic regressions in a multivariate regression model to adjust for cofounders and determine possible predictors of the outcome variables. Significant socio-demographic, clinical, and reproductive characteristics of the patients and caregivers and self-efficacy were the independent variables for analysis. The level of statistical significance was considered at $P < 0.05$.

2.5 Ethical Considerations

The review board of the University of Port Harcourt Teaching Hospital Ethics Committee approved the research. The serially coded questionnaires with unique identifier numbers. Only the researchers, data entry clerk and the statistician had access to the data.

3. **RESULTS**

The respondents were between 41-50 years of age, 27 (52.9%) were married, 26 (51.0%) attained tertiary level of education and 30 (58.8%) were retired. Most of the respondents were into business 19 (37.3%). This is shown in Table 1.

Of the 51 caregivers, 16 (31.4%) were the sisters of the patients, 47 (92.2%) were missing their jobs because of caregiving role, 24 (47.1%) perceived the patients' health as moderate and 33 (64.7%) resided in same house as the patients, while 36 (70.6%) cared for the patient daily and continuously, 16 (31.4%) had been caregivers for between 4-6 months, 20 (39.2%) had chronic health problems and 30 (58.8%) were very willing to care (Table 2a).

Forty-seven (92.2%) desired to continue with their caregiving role, 19 (37.3%) reported that no other person was involved in providing care, 21 (41.2%) reported that there had been 3 previous hospitalizations while 23 (45.1%) had very good knowledge of the patient's condition. This is shown in Table 2b.

Table 3a showed that 14 (27.5%) of the patients required assistance with feeding, 21 (41.2%) with bathing or showering, 25(49.0%) with dressing, and 27 (52.9%) with grooming. In addition, 20 (39.2%) needed assistance to use the toilet, 23 (45.1%) needed help with incontinence, 33 (64.7%) needed assistance with bed, chair, or care and 16 (31.4%) needed assistance with meal preparations.

Table 3b demonstrates that 37 (72.5%) of the patients required supervision, 32 (62.7%) needed assistance with taking their medication, 22 (43.1%) needed help managing their finances, 13 (25.5%) needed assistance with household chores, 31 (60.8%) needed assistance using the phone, 26 (51.0%) needed assistance with mobility and 8 (15.7%) needed someone to prevent wandering. The result showed that 13.7% of the respondents were highly dependent on caregivers as shown in figure 1.

The result in table 4 showed that 20 (39.2%) of the patients had a parity of one or less, 14 (42.4%) were referred from a tertiary health facility. Table 5 showed that 30 (58.8 %) attained menarche between 13-15 years, 21 (41.2%) had coitarche between 18-22 years, 46 (90.2%) had never had a Pap smear and 22 (43.1%) were menopausal.

Table 6 showed that 31 (60.8%) had ovarian cancer, 35 (68.6%) had abdominal pain/swelling, 25 (49.0%) had stage 3 disease, while 45 (88.2%) were treated with both surgery and chemotherapy. Table 7 demonstrates that 22 (43.1%) were hypertensive, while 11 (21.6%) were diabetic, while table 8 showed that 7 (13.7%) had family history of cancer, of which 6 (85.7%) were breast cancers. Table 9a showed that 14 (27.5%) of the caregivers nearly always do not have enough time for themselves because of time spent with the patient, 17 (33.3%) were quite frequently stressed between caring for relative and trying to meet other responsibilities, 21 (41.2%) were never angry when they are around the patient, 19 (37.3%) of the respondents relationship with relatives never affected their relationship with family/friends, 19 (37.3%) were sometimes strained when they are around the patient and 29 (56.9%) sometimes experience health problems.

In Table 9b, 23 (45.1%) reported that they sometimes do not have as much privacy as needed, 19 (37.3%) have sometimes lost control of life since caring for the patient, 11 (21.6%) were nearly always uncertain about what to do about the patient, and 24 (47.1%) were quite frequently doing more for the patient. There was a high burden of care among caregivers as displayed in Figure 2.

Table 10 showed no significant relationship between socio-demographic characteristics and caregiver Burden, while table 11 showed that the feeling of missing job due to caregiving role (X2=9.495, P=0.002) and the residence of the caregivers (X2=7.556, P=0.006) were significantly associated with the level of burden. The result in table 12 and 13 showed no significant relationship between level of burden and the functional status of the patient and obstetric characteristics respectively. Being menopausal was significantly associated with the level of burden (x2=24.238, p<0.001) as shown in table 14, while there was no significant relationship between level of burden and clinical characteristics and medical and family history of the patient as shown in table 15,16,17. Table 18 showed that premenopausal women are 59.5 times more likely to exhibit high level of caregiver burden.

Table 1: Socio-demographic Characteristics of Caregivers

Variable	Frequency	Percent (%)
Age group (years)		
≤20	1	2.0
21-30	9	17.6
31-40	15	29.4
41-50	16	31.4
51-60	8	15.7
>60	2	3.9
Mean ± SD	*40.4 ± 11.6*	
Marital Status		
Single	22	43.1
Married	27	53.0
Separated	2	3.9
Education		
None	3	5.9
Primary	3	5.9
Secondary	18	35.2
Intermediate	1	2.0
Tertiary	26	51.0
Work Status		
Employed	17	33.3
Unemployed	4	7.9
Retired	30	58.8
Occupation		
Business	19	37.3
Civil/Public servant	8	15.7
Trader	6	11.8
Farmer	3	5.9
Teacher	2	3.9
Clergy	1	2.0
Fashion Designer	1	2.0
Petrol attendant	1	2.0
POS Agent	1	2.0
Salesgirl	1	2.0
Secretary	1	2.0

*POS= point of sale

Table 2a: Caregiver Characteristics

Variable	Frequency	Percent (%)
Relationship to Patient		
Sister	16	31.4
Daughter	13	25.5
Cousin	5	10.0
Mother	5	10.0
Aunt	3	5.8
Friend	2	3.9
Sister-in-law	2	3.9
Husband	1	1.9
Son	1	1.9
Son-in-law	1	1.9
Stepdaughter	1	1.9
Uncle's wife	1	1.9
Missing Job because of Caregiving role		
Yes	47	92.2
No	4	7.8
Perceived Health Status		
Bad	4	7.8
Moderate	24	47.1
Good	23	45.1
Residence Status		
Same house	33	64.7
Neighborhood	10	19.6
Away from patients' home	8	15.7
Frequency of care for patient		
Daily & continuously	36	70.6
Daily but during specific hours	13	25.5
Weekends	2	3.9
Duration of care giving		
< 1 month	5	9.8
1-3 months	13	25.5
4-6 months	16	31.4
6-12 months	15	29.4
> 12 months	2	3.9
Chronic health problems		
Yes	20	39.2
No	31	60.8
Willing to care		
Very willing	30	58.8

Willing to care	21	41.2

Table 2b: Caregiver characteristics

Variable	Frequency	Percent (%)
Desire to continue care		
Yes	47	92.2
No	4	7.8
Others involvement		
Nobody	19	37.3
Another care giver	14	27.5
Two or more care giver	18	35.2
Previous hospitalization		
1	13	25.5
2	17	33.3
3	21	41.2
Knowledge of condition		
No knowledge	4	7.8
Know a little	16	31.4
Probably know	8	15.7
Know very well	23	45.1

Table 3a: Functional Status of the Patient

Variable	Frequency	Percent (%)
Need someone to feed		
Yes	14	27.5
No	37	72.5
Bathing/showering		
Yes	21	41.2
No	30	58.8
Dressing		
Yes	25	49.0.
No	26	51.0
Grooming		
Yes	27	52.9
No	24	47.1
Using toilet		
Yes	20	39.2
No	31	60.8
Incontinence		
Yes	23	45.1
No	28	54.9
Transferring from bed/chair/car		
Yes	33	64.7

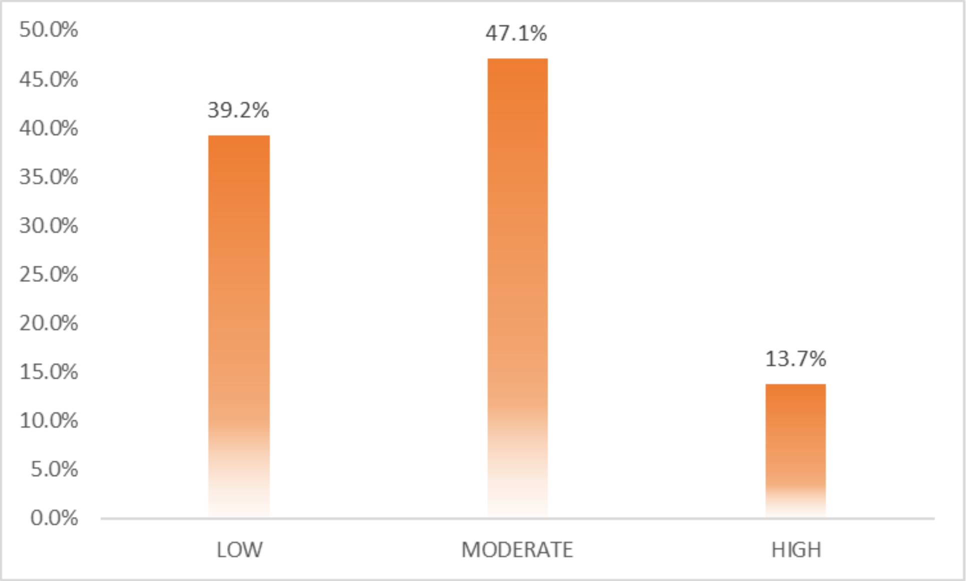
No	18	35.3
Preparing meals		
Yes	16	31.4
No	35	68.6

Table 3a: Functional Status of the Patient

Variable	Frequency	Percent (%)
Need someone to feed		
Yes	14	27.5
No	37	72.5
Bathing/showering		
Yes	21	41.2
No	30	58.8
Dressing		
Yes	25	49.0.
No	26	51.0
Grooming		
Yes	27	52.9
No	24	47.1
Using toilet		
Yes	20	39.2
No	31	60.8
Incontinence		
Yes	23	45.1
No	28	54.9
Transferring from bed/chair/car		
Yes	33	64.7
No	18	35.3
Preparing meals		
Yes	16	31.4
No	35	68.6

Table 3b: Functional Status of the Patient

Variable	Frequency	Percent (%)
Staying alone must be supervised		
Yes	37	72.5
No	14	27.5
Taking medication		
Yes	32	62.7
No	19	37.3
Managing money or finance		
Yes	22	43.1
No	29	56.9
Performing household chores		
Yes	13	25.5
No	38	74.5
Using telephone		
Yes	31	60.8
No	20	39.2
Mobility		
Yes	26	51.0
No	25	49.0
Wandering or the potential to wander		
Yes	8	15.7
No	43	84.3



Low:0-5, Moderate: 6-10, High:11-15

Figure 1: Level of Dependence

Table 4: Obstetric characteristics of the Patient

Variable	Frequency	Percent (%)
Parity		
≤1	20	39.2
2-4	19	37.3
≥5	12	23.5
No of living children		
≤1	22	43.1
2-4	16	31.4
≥5	13	25.5
Referred to the facility		
Yes	33	64.7
No	18	35.3
Place referred from n=33		
Private clinic/maternity	13	39.4
Primary health centre	1	3.0
Secondary health facility	4	12.2
Tertiary health facility	14	42.4
TBAs	1	3.0

Table 5: Gynaecologic Characteristics of the Patient

Variable	Frequency	Percent (%)
Age at menarche (years)		
10-12	16	31.4
13-15	30	58.8
≥15	5	9.8
Age at Coitarche (years)		
13-17	13	25.5
18-22	21	41.2
23-27	10	19.6
28-32	4	7.8
33-37	3	5.9
Pap Smear		
Yes	5	9.8
No	46	90.2
Hormonal Contraceptive		
No	51	100.0
Menopausal		
Yes	22	43.1
No	29	56.9

Table 6: Clinical Characteristics of the Patients

Variable	Frequency	Percent (%)
Type of Cancer		
Cervical	8	15.7
Ovarian	31	60.8
Endometrial	10	19.6
Vulvar	2	3.9
Presenting symptoms*		
Abdominal pain/swelling	35	68.6
Weight loss	6	11.8
Vaginal disease/Bleeding/Discharge	17	33.3
Back pain	4	7.8
Stage of Disease		
Stage 1	4	7.8
Stage 2	6	11.8
Stage 3	25	49.0
Stage 4	16	31.4
Duration of Diagnosis		
< 1 year	27	52.9
3-4 years	18	35.3
≥5 years	6	11.8
Type of treatment		
Chemotherapy	2	3.9
Surgery	4	7.8
Both	45	88.2
Disease re-occurrence		
Yes	2	3.9
No	49	96.1

Multiple responses apply

Table 7: Medical History of the Patient

Variable	Frequency	Percent
Hypertensive		
Yes	22	43.1
No	29	56.9
Diabetic		
Yes	11	21.6
No	40	78.4
Hyperlipidemia		
No	51	100.0
HIV		
Yes	3	5.9
No	48	94.1

Table 8: Family and Social History of the Patient

Variable	Frequency	Percent (%)
Family history		
Yes	7	13.7
No	44	86.3
Type of Cancer n=7		
Breast cancer	6	85.7
Cervical cancer	1	14.3

Table 9a: Caregiver Burden

Variable	Frequency	Percent (%)
Don’t have enough time for yourself because of time spent with relative		
Rarely	12	23.5
Sometimes	11	21.5
Quite frequently	14	27.5
Nearly always	14	27.5
Stressed between caring for relative and trying to meet other responsibilities		
Never	2	3.9
Rarely	6	11.8
Sometimes	16	31.4
Quite frequently	17	33.3
Nearly always	10	19.6
Angry when you are around relative		
Never	21	41.2
Rarely	13	25.5
Sometimes	13	25.5
Quite frequently	4	7.8
Relative currently affects relationship with family/friends		
Never	19	37.2
Rarely	9	17.6
Sometimes	14	27.5
Quite frequently	8	15.7
Nearly always	1	2.0
Strained when around relative		
Never	11	21.6
Rarely	9	17.6
Sometimes	19	37.3
Quite frequently	7	13.7
Nearly always	5	9.8
Health suffered because of involvement with relative		
Never	12	23.5
Rarely	3	5.9
Sometimes	29	56.9
Quite frequently	6	11.8
Nearly always	1	2.0

Table 9b: Caregiver Burden

Variable	Frequency	Percent (%)
Don’t have as much privacy as needed		
Never	13	25.5
Rarely	3	5.9
Sometimes	23	45.1
Quite frequently	5	9.8
Nearly always	7	13.7
Social life has suffered due to caring for relative		
Never	11	21.6
Rarely	13	25.5
Sometimes	11	21.6
Quite frequently	12	23.5
Nearly always	4	7.8
Have lost control of life since you relatives’ illness		
Never	19	37.3
Rarely	11	21.6
Sometimes	19	37.3
Nearly always	2	3.9
Uncertain about what to do about relative		
Never	9	17.6
Rarely	3	5.9
Sometimes	18	35.3
Quite frequently	10	19.6
Nearly always	11	21.6
Be doing more for your relative		
Never	2	3.9
Rarely	1	2.0
Sometimes	14	27.5
Quite frequently	24	47.1
Nearly always	10	19.6
You could do a better job caring for relative		
Never	3	5.9
Rarely	4	7.8
Sometimes	11	21.6
Quite frequently	19	37.3
Nearly always	14	27.5

.

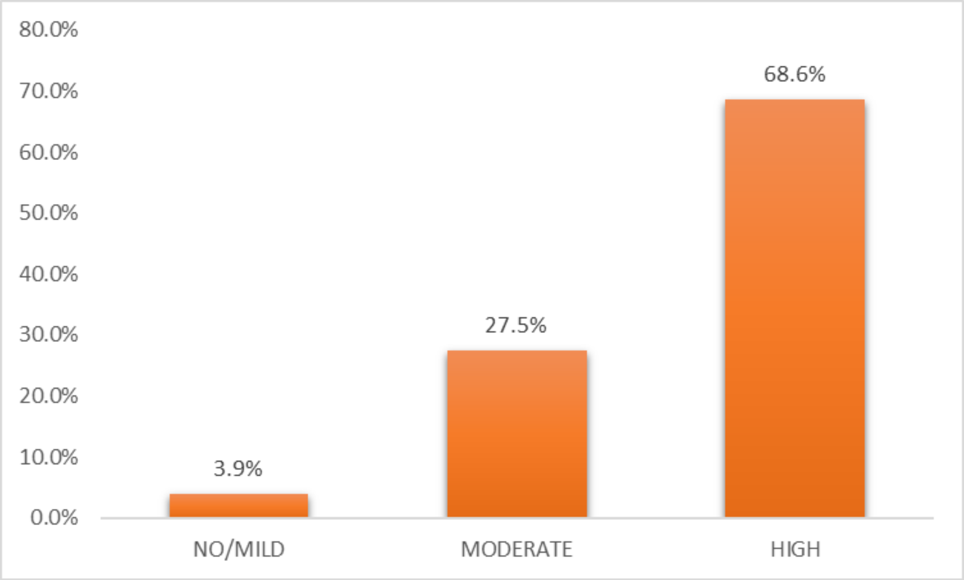


Figure 2: Level of Burden

Table 10: Relationship between socio-demographic characteristics and Caregiver Burden

Variable	Burden		X^2 (p-value)
	Low/Moderate n (%)	High n (%)	
Age group			
≤40 years	6(24.0)	19(76.0)	1.238(0.266)
>40 years	10(38.5)	16(61.5)	
Marital Status			
Married	9(33.3)	18(66.7)	0.102(0.749)
Single	7(29.2)	17(70.8)	
Education			
<Tertiary	9(36.0)	16(64.0)	0.488(0.485)
Tertiary	7(26.9)	19(73.1)	
Working Status			
Employed	6(35.3)	11(64.7)	0.182(0.670)
Unemployed/Retired	10(29.4)	24(70.6)	
Religion			
Christian	2(4.0)	48(96.0)	0.042(0.838)
Others	0(0.0)	1(100.0)	
Husband education			
<Tertiary	1(14.3)	6(85.7)	1.810(0.179)
Tertiary	0(0.0)	12(100.0)	

Table 11: Relationship between caregivers' characteristics and level of burden

Variable	Burden		X^2(P-value)
	Low/Moderate n (%)	High n (%)	
Missing job because of caregiving responsibilities			
Yes	12(25.5)	35(74.5)	9.495(0.002) *
No	4(100.0)	0(0.0)	
Perceived health status			
Bad/Moderate	0(0.0)	4(100.0)	1.984(0.159)
Good	16(34.0)	31(66.0)	
Resident			
Same house	6(18.2)	27(81.8)	7.556(0.006) *
Neighborhood/Faraway	10(55.6)	8(44.4)	
Frequency of providing care			
Daily	16(32.7)	33(67.3)	0.952(0.329)
Weekends	0(0.0)	2(100.0)	
≤3 months	7(38.9)	11(61.1)	0.730(0.393)
>3 Months	9(27.3)1	24(72.7)	
Chronic health condition			
Yes	4(20.0)	16(80.0)	1.977(0.160)
No	12(38.7)	19(61.3)	
Desire to continue			
Yes	14(31.8)	30(68.2)	0.288(0.592)
No	1(50.0)	1(50.0)	
Others involvement			
Nobody	9(47.4)	10(52.6)	3.599(0.058)
Others involved	7(21.9)	25(78.1)	
Previous hospitalization			
≤1	5(45.5)	6(54.5)	1.057(0.304)
>1	11(28.9)	27(71.1)1	
Knowledge of condition			
No knowledge/know little	8(40.0)	12(60.0)	1.138(0.286)
Probably know/Know very well	8(25.8)	23(74.2)	

*Statistical Significance

Table 12: Relationship between level of burden and Functional status of the patient

Variable	Burden		X^2(p-value)
	Low/Moderate n (%)	High n (%)	
Level of dependent			
Low/Moderate	15(34.1)	29(65.9)	1.100(0.294)
High	1(14.3)	6(85.7)	

Table 13: Relationship between level of burden and Obstetric Characteristics

Variable	Burden Low/Moderate n (%)	High n (%)	X^2(P-value)
Parity			
≤1	2(28.6)	5(71.4)	0.427(0.514)
>1	13(41.9)	18(58.1)	
No of living children			
≤1	3(37.5)	5(62.5)	0.039(0.843)
>1	12(41.4)	17(58.6)	
Referred to the facility			
Yes	8(24.2)	25(75.8)	2.208(0.137)
No	8(44.4)	10(55.6)	

Table 14: Relationship between level of burden and Gynaecologic Characteristics

Variable	Burden Low/Moderate n (%)	High n (%)	X^2(p-value)
Age at menarche n			
≤15	13(31.7)	28(68.3)	1.521(0.218)
>15	2(66.7)	1(33.3)	
Age at Coitarche			
≤22	6(28.6)	15(71.4)	1.515(0.218)
>22	6(50.0)	6(50.0)	
PAP Smear			
Yes	0(0.0)	5(100.0)	2.534(0.111)
No	16(34.8)	30(65.2)	
Menopausal			
Yes	15(68.2)	7(31.8)	24.348(<0.001) *
No	1(3.4)	28(96.6)	

*Statistical Significance

Table 15: Relationship between level of burden and Clinical characteristics of the patient

Variable	Burden Low/Moderate n (%)	High n (%)	X^2(p-value)
Stage of Disease			
Stage 1	2(50.0)	2(50.0)	0.700(0.403)
>Stage 1	14(29.8)	33(70.2)	
Duration of Diagnosis			
1-4 years	10(37.0)	17(63.0)	0.855(0.355)
≥5 years	6(25.0)	18(75.0)	
Type of treatment			
Chemotherapy	1(50.0)	1(50.0)	1.096(0.578)
Surgery	2(50.0)	2(50.0)	
Both	13(28.9)	32(71.1)	

Table 16: Relationship between level of burden and Medical History of the patients

Variable	Burden Low/Moderate n (%)	High n (%)	X^2(p-value)
Hypertensive			
Yes	9(40.9)	13(59.1)	1.634(0.201)
No	7(24.1)	22(75.9)	
Diabetic			
Yes	4(36.4)	7(63.6)	0.162(0.687)
No	12(30.0)	28(70.0)	
HIV			
Yes	0(0.0)	3(100.0)	1.457(0.227)
No	16(33.3)	32(66.7)	

Table 17: Relationship between level of burden and Family History of the patients

Variable	Burden Low/Moderate n (%)	High n (%)	X^2(P-value)
Family history			
Yes	2(28.6)	5(71.4)	0.030(0.863)
No	14(31.8)	30(68.2)	

Table 18: Predictors of Caregiver Burden

Variable	AOR (95% C.I.)	p-value
Resident		
Same house	5.5(0.8-34.6)	0.067
Neighborhood/Faraway ^{R}		
Menopausal		
No	59.5(6.0-590.3)	0.001*
Yes ^{R}		

4. DISCUSSION

In the current study, married women between the ages of 40 and 50 made up most caregivers, with around half having postsecondary education. This is consistent with research by Ogunyemi et al [28], Akpan-Idiok and Anarado [29], Boostaneh et al [30], Gabriel et al [31], Jite et al [32], and Sun et al [33], who in their different studies showed that women are primarily responsible for caring for patients with gynaecological cancers. The mean age of the participants in our study was 40.4 years, which was greater than the 35.9 years and 39.71 years reported by Anarado and Boostaneh et al [29] and Akpan-Idiok [30] respectively. This suggests that most people who provide care for cancer patients are in their third or fourth decade of life. In addition, our study confirms the findings of Gabriel et al [31] that most caregivers are between the ages of 41 and 50. Meanwhile, studies by Ogunyemi et al [28] and Jite et al [32] also indicated that this age group is prevalent.

Many of the caregivers were the patients' sisters, who were willing to help and had given frequent care for a period of four to six months. The features of carers for patients with gynaecological cancer have been documented in several research; however, the authors note that most of these features are poorly defined and varied. Our results were different from those of studies by Ogunyemi et al [28], Yasar and Terzioglu [34], and others that indicated parents and relatives as the primary carers, respectively. The family structure, cultural background, and the availability of family members or relatives to serve as carers in our study population may all be contributing factors to this discrepancy.

However, additional similar criteria supported by Ogunyemi et al [28] including staying in the same home, providing care for six months and below, the desire to assist the patient, and not having any underlying chronic medical conditions, were also in agreement with the results of our study and Zou et al [35].

According to our findings, many of the patients showed moderate degree of dependence on their caregivers. This level of dependence may be explained by the clinical characteristics of the patients, which showed that most of them presented with advanced stage gynaecological cancers, and had undergone surgery, chemotherapy, or both. These therapies may affect the functional state of the patient, in addition to the severity of the disease. Even yet, our results are consistent with those of Zou et al [35] who observed that surgery and radiation were the most prevalent forms of interventions, and ovarian cancer the was the most common gynaecological cancer. As with Rasul and Amen [36], the treatment received were surgery, chemotherapy, and radiation; these findings were also observed in the current study. However, the authors failed to report the patients' dependence on their caregivers.

The caregiver burden in our study revealed that, when it came to time management, the caregivers rarely and almost never had time for themselves. They frequently experienced stress from juggling their other commitments and taking on the role of caregiver. Additionally, a lot of them were never angry about patient relatives but occasionally felt tense around them, which at times compromised their privacy. In terms of living, some said their social life had occasionally suffered, some had never lost control since their relative became ill, and still others said they could frequently provide better care of their relatives.

As a result, our study found that caregiver burden was quite high. Other Studies also reported a high level of burden [28,28,31,37]. Given that many patients in our study struggled with financial difficulties, which frequently had adverse effects on the physical and mental health of the caregivers, thus the high burden of care might be attributed to both time and financial constraints.

Age groups, marital status, education, work status, religion, and spouse's education were observed not to be significantly associated with the level of caregiver burden. with level of caregiver burden. This completely agrees with the findings of Sun et al [33], Shim and Ng

[39] who reported no significant relationship as well. In contrast, Ogunyemi et al [28] that there was an association with age.

In our study, the level of burden was significantly correlated with menopausal status, residence, and missing jobs due to caregiving responsibilities. This implies that the likelihood of the caregiver experiencing a high burden increases with the distance from the patient's home menopausal status.

5. CONCLUSION

The current study observed that there was moderate level of patient dependency and high level of caregiver burden. The time constraint disrupted social lives, and the psychological problems experienced by the caregivers were largely due to financial difficulties experienced by the patients, caregivers, or both. Menopausal status and long residential distances were the primary predictors of the level of care burden.

REFERENCES

1. Sung H, Ferla J, Siegel RL, Laversanne M, Soerjomataram I, Jemal A, Bray F. (2021). Global cancer statistics 2020: GLOBOCAN estimates of incidence and mortality, worldwide for 36 cancers in 185 countries. CA: A Cancer J Clin. 71(3): 209-249.
2. Mattsson E, Einhorn K, Ljungman L, Sundström-Poromaa I, Stålberg K, Wikman A. (2018). Women treated for gynaecological cancer during young adulthood – A mixed-methods study of perceived psychological distress and experiences of support from health care following end-of-treatment. Gynecol Oncol. 149 (3): 464-469.
3. Boa R, Grénman S. (2018). Psychosexual health in gynecologic cancer. Int J Gynecol Obstet. 143(Suppl.2): 147-152.

4. Given BA, Sherwood P, Given CW. (2011). Support for caregivers of cancer patients: Transition after active treatment. Cancer Epidemiol Bio Prev. 20 (10): 2015-2021.
5. Datta S, Kar S. (2016). Assessing health and quality of life burden on caregivers of chronically and terminally ill patients – Evidence based systematic review from a global perspective. Athens J Health. 3(4): 319-334.
6. Germeni E, Sarris M. (2015). Experiences of cancer caregiving in socioeconomically deprived areas of Attica, Greece. Qual Health Res. 25 (7): 98-995.
7. Stenberg U, Ruland CM, Olsson M, Ekstedt M. (2012). To live close to a person with cancer-experiences of family caregivers. Social Work Health Care 51(10): 909-926.
8. Samiel M. (2013). Challenges of making radiotherapy accessible in developing countries. Cancer Control: J Mottiff Cancer Centr. 1-10.
9. Zarit S. (2004). Family burden for old spousal patients at the end of life. Can Med Assoc. J 170 (12): 1811-1812.
10. Hacialioglu N, Ozer N, Yilmaz Karabulutlu E, Erdem N, Erci B. (2010). The quality of life of family caregivers of cancer patients in the east of Turkey. Eur J Oncol Nurs. 14 (3):211-217.
11. Chessick CA, Perlick DA, Miklowitz DJ, Kaczynski R, Allen MH, Morris CD, et al. (2007). Current suicide ideation and prior suicide attempts of bipolar patients as influences on caregiver burden. Suicide Life Threat Behav. 37 (4):482- 491.
12. Lukhmana S, Bhasin SK, Chhabra P, Bhatia MS. (2015). Family caregivers' burden:a hospital based study in 2010 among cancer patients from Delhi. Indian J Cancer. 52 (1):146-151.
13. Kim Y, Given BA. (2008). Quality of life of family caregivers of cancer survivors: across the trajectory of the illness. Cancer. 112 (11) (suppl):2556-2568.

14. Milbury K, Badr H, Fossella F, Pisters KM, Carmack CL. (2013). Longitudinal associations between caregiver burden and patient and spouse distress in couples coping with lung cancer. Support Care Cancer. 21(9):2371-2379.
15. Wadhwa D, Burman D, Swami N, Rodin G, Lo C, Zimmermann C. (2013). Quality of life and mental health in caregivers of outpatients with advanced cancer. Psycho-Oncology. 22(2):403-410.
16. Butow PN, Price MA, Bell ML, Webb PM, deFazio A. (2014). Caring for women with ovarian cancer in the last year of life: a longitudinal study of caregiver quality of life, distress, and unmet needs. Gynecol Oncol. 132 (3): 690-697.
17. Stamataki Z, Ellis JE, Costello J, Fielding J, Burns M, Molassiotis A. (2014). Chronicles of informal caregiving in cancer: using ‘The Cancer Family Caregiving Experience’ model as an explanatory framework. Support Care Cancer. 2 (2):435-444.
18. Awadalla AW, Ohaeri JU, Gholoum A, Khalid AO, Hamad HM, Jacob, A. (2007). Factors associated with quality of life of outpatients with breast cancer and gynecologic cancers and their family caregivers: a controlled study. BMC Cancer. 7:102.
19. Pınar G, Pınar T, Ayhan A. (2012). The strain and hopelessness in family caregivers of patients with gynecologic cancer receiving chemotherapy. Int J Hematol. 3:170-180.
20. Seven M, Yılmaz S, Şahin E, Akyüz A. (2014). Evaluation of the quality of life of caregivers in gynecological cancer patients. J Cancer Educ. 29(2):325-332.
21. Hagedoorn M, Sanderman R, Bolks HN, Tuinstra J, Coyne JC. (2008). Distress in couples coping with cancer: A meta-analysis and critical review of role and gender effects. Psychol Bull. 134 (1):1-30.
22. Northouse LL, Katapodi MC, Schafenacker AM, Weiss D. (2012). The impact of caregiving on the psychological well-being of family caregivers and cancer patients. Semin Oncol Nur. 28(4):236-45.

23. Mahadevan R, Jaafar NRN, Din SHS, Ahmad SNA, Baharuddin A, Razali R. (2013). The stress of caregiving: A study of family caregivers of breast cancer patients receiving oncologic treatment at a Malaysian general hospital. Sains Malaysiana. 42(7):1019-26.
24. Payne S, Smith P, Dean S. (199). Identifying the concerns of informal carers in palliative care. Palliat Med. 13 (1):37-44.
25. Lukhmana S, Bhasin SK, Chhabra P, Bhatia MS. (2015). Family caregivers' burden: a hospital-based study in 2010 among cancer patients from Delhi. Indian J Cancer. 52(1):146-151.
26. Livingston PM, Osborne RH, Botti M, Mihalopoulos C, McGuigan S, Heckel L, et al. (2014). Efficacy and cost-effectiveness of an outcall program to reduce carer burden and depression among carers of cancer patients [PROTECT]: rationale and design of a randomized controlled trial. BMC Health Serv Res. 14 (5):1-8.
27. Petricone-Westwood D, Lebel S. (2016). Being a caregiver to patients with ovarian cancer: a scoping review of the literature. Gynecol Oncol. 143(1):184-192.
28. Ogunyemi A, Umoru AK, Alabi AO, Adegboyega BC, Otokpa E. (2021). Caregiving Burden among Informal Caregivers of Cancer Patients in Lagos, Nigeria. Research Square. 1-24.
29. Akpan-Idiok PA, Anarado AN. (2014). Perceptions of burden of caregiving by informal caregivers of cancer patients attending University of Calabar Teaching Hospital, Calabar, Nigeria. Pan Afr Med. J 18:159.
30. Boostaneh M, Zirak M, Fallah R. (2021). Burden of Care and Its Relationship with Sleep Quality of Cancer Patients’ Caregivers. Research square. 1-15.
31. Gabriel IO, Aluko JO, Okeme MI. (2019). Caregiver Burden Among Informal Caregivers of Women with Breast Cancer. Biomed J Sci & Tech Res. 15(3):11384-11392.

32. Jite IE, Adetunji AA, Folasire AM, Akinyemi JO, Bello S. (2021). Caregiver burden and associated factors amongst carers of women with advanced breast cancer attending a radiation oncology clinic in Nigeria. Afr J Prm Health Care Fam Med. 13(1): a2812.
33. Sun Q, Li J, Fang X, Jin J and Cui L. (2023). Status and influencing factors of care burden of pancreatic cancer caregivers under COVID-19. Front Psychol. 13:1066278.
34. Yaşar BN, Terzioğlu F. (2022). Factors affecting the burden and quality of life of caregivers for gynecological cancer patients. Arch Health Sci Res. 9:51-54.
35. Zuo Y, Luo BR, Peng WT, Liu XR, He YL, Zhang JJ. (2020). Informal caregiver burden and influencing factors in gynaecological oncology patients hospitalized for chemotherapy: a cross-sectional study. J Int Med Res. 48(11):300060520974927.
36. Rasul AYJ, Amen MR. (2022). Caregiving Burdens among Family Caregivers of Cancer Patients Undergoing Chemotherapy at Hiwa Cancer Hospital in Sulaimani – Iraq. Mosul J Nur. 10(2):290-301.
37. Mirsoleymani SR, Rohani C, Matbouei M, Nasiri M, Vasli P. (2017). Predictors of caregiver burden in Iranian family caregivers of cancer patients. J Edu Health Promot. 6:91:1-6.
38. Sanjeevani G, Ramakanth P, Chaitanya A. (2022). A cross-sectional study of psychopathology, quality of life and caregiver burden in caregivers of cancer patients. ScienceRise: Med Sci. 5(50):57-64.
39. Shim VK, Ng CG. (2019). Burden in Family Caregivers of Cancer Patients: The Association with depression, Religiosity and Religious Coping. Asian Pac J Cancer Care. 4(4):171-182.