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Effects of a psychosocial intervention on the quality of life of primary caregivers of women with breast cancer

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ABSTRACT

Purpose: Breast cancer is the leading form of cancer among women in Nigeria. The care of such patients has shifted from hospital-based care to home and community care, with the resultant increase in responsibility and burden on caregivers. The study aimed to implement and evaluate the effectiveness of a psychosocial intervention programme on the quality of life (QOL) and caregiver burden of the primary caregivers of women with breast cancer.
Method: This was a quasi-experimental study with 108 primary caregivers (54 in both intervention and control groups). The intervention comprised six 90-min educational sessions, held weekly. Topics included information about breast cancer, the emotional aspect of caring, adjustment to the role of caregiver and communication strategies. The intervention group received the psychosocial intervention programme in addition to routine care, and the control group received routine care. Primary outcome (caregiver burden) and caregiver QOL were measured using the Zarit Burden Interview (ZBI) and Caregiver Quality of Life Index-Cancer (CQOLC) at baseline, week six and week 12.
Results: The psychosocial intervention reduced caregiver burden at both T1 and T2 ($p = 0.000$, $p = 0.018$ respectively) and improved the caregiver QOL ($p = 0.000$, $p = 0.020$ respectively) in the intervention group compared to the control group.
Conclusion: The psychosocial intervention programme had a positive effect on caregiver burden and QOL. Issues such as sustainability of such programmes and advocacy relating to caregiver burden need further research.

1. Introduction

Breast cancer is the leading form of cancer among women in Nigeria, affecting primarily women over 40 years of age (Ntekim et al., 2009). The incidence of the disease has risen significantly between 1960 and 2010 in Nigeria; from 13.7 per 100000 in 1960–1969 to 54.3 per 100000 between 2009 and 2010 (Jedy-Agba et al., 2012). Although there is an increased incidence of breast cancer, diagnosis and management has also improved, with the majority of patients in developed countries remaining alive five years after diagnosis (Youlden et al., 2012). Another development in breast cancer management is the shift from the acute care cancer centre (hospital in-patient care) to outpatient and community settings for continued care (Northouse, 2012; Wadhwa et al., 2013). Consequently, the burden of care has shifted from health workers to family members, who often serve as primary caregivers (Frambes et al., 2018).

Primary caregivers have assumed many of the care roles and functions of hospital-based health workers; this includes involvement in treatment planning, decision making and implementing ongoing treatment and care at home (Lkhoyaali et al., 2015; Waldron et al., 2013). Many caregivers are ill-prepared for the caregiving role and have limited knowledge which may impact on the nature and quality of care provided (Chih et al., 2013; Northouse, 2012). In caring for their family member, caregivers often neglect their own health care needs (Lapid et al., 2016), with risk of a deterioration in their own quality of life (QOL). Hodges et al. (2005) reported that there was a significant relationship between the distress reported by cancer patients and the distress reported by their caregivers; distress of the cancer patient is shared by the caregiver.

Although research into the QOL of primary caregivers of women with breast cancer has been conducted worldwide (McMillan et al., 2006; McMillan and Small, 2007; Wadhwa et al., 2013; Waldron et al.,

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2013), research into this aspect of care in Nigeria is limited. Studies conducted in first world countries have reported that the primary caregivers of persons with breast cancer benefit from psycho-educational interventions (O'Hara et al., 2010; Stenberg et al., 2010; Yoon et al., 2014). A variety of interventions have been implemented to assist caregivers in managing the effects of the caregiving burden on QOL (Dolbeault et al., 2009; Tan et al., 2015).

The aim of this study was to implement and evaluate the effectiveness of a psychosocial intervention programme on caregiving burden and self-reported QOL of primary caregivers of women with breast cancer in Abuja, Nigeria. The main objective was to evaluate the effect of the psychosocial intervention on caregiver burden and caregiver QOL.

1.1. *Conceptual framework*

This study was guided by Lazarus and Folkman's transactional model of stress and coping, which has been advocated as a useful framework to guide caregiver research (Hudson et al., 2004). The model is useful, as when people are faced with a stressor such as breast cancer, they experience appraisal processes which, in turn, direct their adaptation to the stressor. If they cannot adapt, it affects their QOL. This framework provides a testable theoretical approach to assessing change in QOL. The theoretical model depicted in Fig. 1 was used to clarify and predict changes in perceived QOL that Results from the interaction of these factors. The variables identified in the model are significant predictors of outcomes in primary caregivers, and therefore provide a strong conceptual basis for an intervention designed to improve QOL.

2. Methods

A quasi-experimental study with pre- and post-test measures was conducted from August to November 2016, at the National Hospital, Abuja, Nigeria. Two post-test measures were obtained at six and 12 weeks from baseline.

A convenience sample of primary caregivers was recruited in the outpatient clinic at the National Hospital in Abuja, Nigeria. The inclusion criteria were: adults of age 18 years or older, caring for a person with breast cancer and literate with a minimum of nine years of schooling. The care recipient (referred to as the patient in this study) was expected to have at least a six-month survival prognosis. Exclusion criteria were: professional health caregivers, as their knowledge and information could influence their participation and caregivers who, at the time of the study, were receiving treatment for breast cancer or a condition which increased their physical and/or psychological vulnerability.

2.1. *Control group*

The control group received routine care which was offered by the hospital, such as 24-h phone calls, if required by the caregivers. The nurse on duty also provided psychosocial support, such as counselling. The psychosocial support was ad hoc and as needed but not regular.

2.2. *Intervention group*

The intervention group received the psychosocial intervention programme in addition to routine care, which included counselling, if required by the caregivers. The routine care did not overlap with the psychosocial educational programme being tested in the study. The intervention was adapted with permission from the following materials: Supporting a person who needs palliative care: a guide for family and friends (Hudson and Hudson, 2012) and the National Cancer Institute, United States Department of Health and Human Services (National Cancer Institute, 2012).

2.3. *Psychosocial intervention programme*

The intervention programme, held at a venue in the Oncology Unit of the hospital, was coordinated by the researcher. It comprised six face-to-face sessions (once a week for six weeks) delivered by four research assistants (registered nurses who were trained by the researcher in the ethical conduct of research, and their roles in the study process). Each session was 90 min in length; a presentation of thematic content followed by questions and discussion. Each session had a specific theme:

- Introduction and essential information about breast cancer
- Adjustment to the role of caregiver
- Communication strategies to prevent misunderstanding and promote positive interaction between caregiver and patient
- Dealing with the emotional aspect of caring
- Self-care: its importance and strategies to promote self-care
- Practical care information relating to the management of common symptoms and dealing with the patient's emotions.

Questions from caregivers focused mainly on hereditary aspects of breast cancer, prognosis and the types and processes of treatment. At the end of each session participants were provided with an information package relating to the session theme. Fifty-one participants in the intervention group completed programme. Due to the severity of their patient's illness, three intervention group participants did not complete the programme. Fifty-two participants in the control group completed the post intervention assessments. Caregiver burden and the caregiver QOL were assessed at baseline (before the commencement of the psychosocial intervention programme), at week six (at completion of the

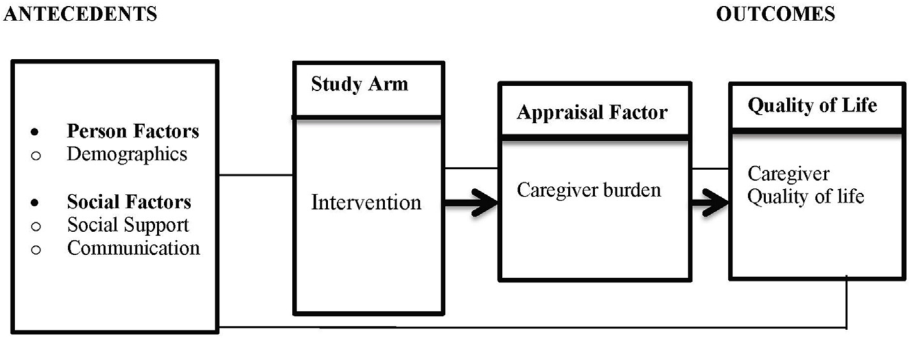

Fig. 1. Theoretical model of factors affecting primary caregiver QOL.
In the above model, bold arrows indicate direct effects of psychosocial intervention on the appraisal factor and QOL, while lines indicate significant relationships among study variables observed from other studies.

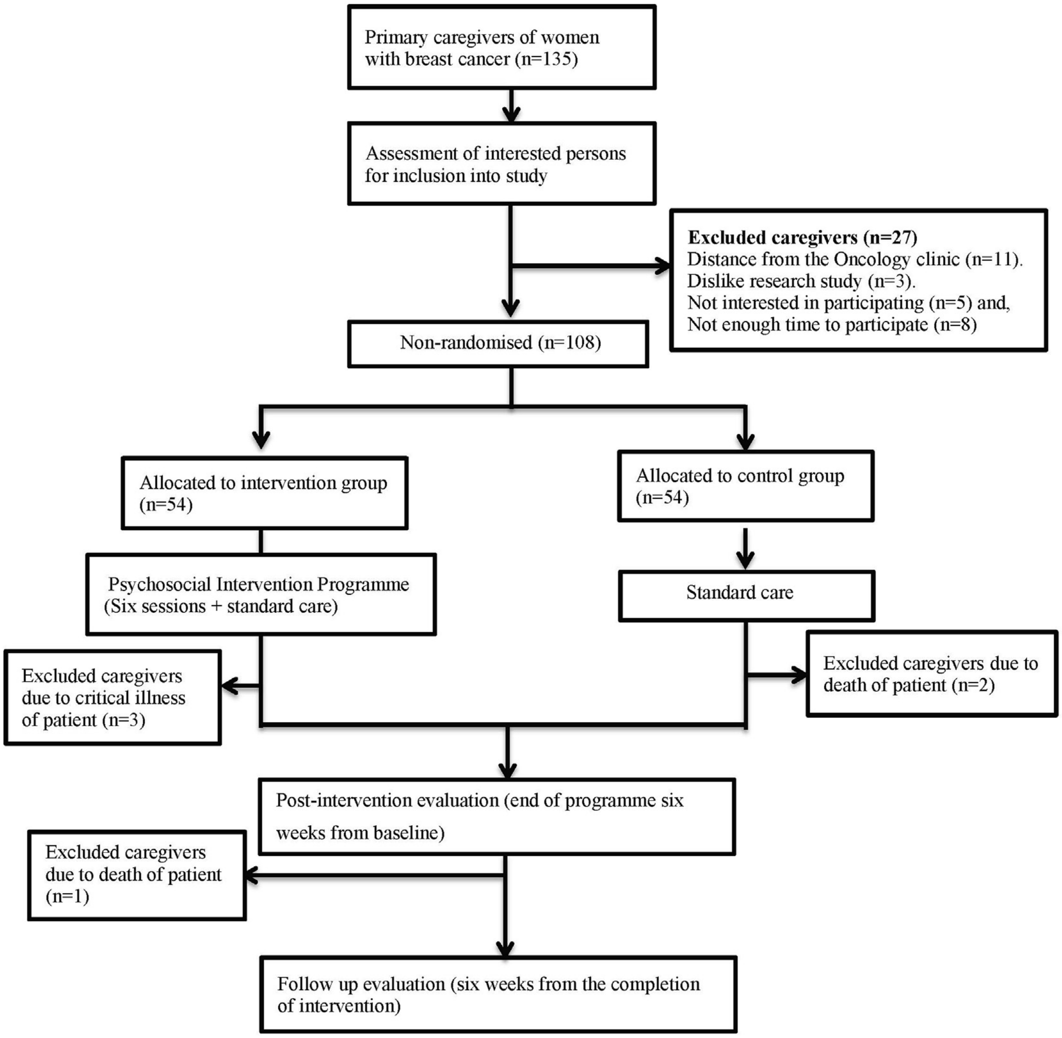

Fig. 2. Study design and flow.

intervention programme) and week 12 (follow-up). Caregivers were asked to give voluntary informed consent and informed of their right not to participate, and that should they wish to withdraw at any point, this would not affect their usual care in any way.

2.4. Procedures

The researcher and research assistants approached the health staff working in the Oncology Unit where women with breast cancer were being treated; information about the study was explained to the staff in order for them to serve as mediators between the researcher and the primary caregivers. Information documents were posted in the clinic waiting areas and distributed by the oncology nurses. Staff identified potential participants. One hundred and thirty-five primary caregivers were approached over a two-week period in August 2016, of whom 108 agreed to participate in the study (response rate 80%). Reasons for declining to participate are listed in Fig. 2. After participants had signed written informed consent, the researcher allocated them to each arm of the study (intervention or control group) using sequential numbers (1–108); those with even numbers were assigned to the intervention group (n = 54), and odd numbers to the control group (n = 54). All participants completed the baseline information form. The research assistants were responsible for recruiting the caregivers, collection of data, and training of the participants in the intervention group. All (100%) participants were assessed at baseline, 103 (95%) at six weeks and 102 (94%) participants completed the assessment at 12 weeks. Loss was due to critical illness of patients (n = 3, 6%) and death of patients (n = 3, 6%). All assessment forms were fully completed by all participants.

2.5. Instruments used to measure caregiver burden and quality of life

Caregiver burden was measured by the Zarit Burden Interview (ZBI). This is a 22-item one-factor scale reflecting areas of concern, namely health, finances, social life, emotional well-being, personal life, and interpersonal relationships (Ozer et al., 2012). The scale is divided into three domains: role strain, personal strain and competencies and expectations. Items are worded subjectively, focusing on the affective response of the caregiver (Bianchi et al., 2016). The ZBI is scored on a 5-point Likert scale. Each item is scored from 0 to 4, where 0 = never, 1 = rarely, 2 = sometimes, 3 = quite frequently, and 4 = nearly always. The total ZBI is obtained by adding the scores for the 22 items with a range of 0–88; higher scores indicate greater burden (Zarit et al., 1980). Cronbach's alpha for this instrument in this study was 0.73.

Caregiver quality of life was measured by the Caregiver Quality of Life Index Cancer (CQOLC). This is a 35-item self-report questionnaire scored on a five-point Likert-type scale that yields a single QOL score, ranging from 0 = not at all to 4 = very much. The CQOLC instrument is divided into domains: burden, disruptiveness, positive adaptation, financial concerns and independent items (Duan et al., 2015; Son et al., 2012). Ten items relate to burden; seven to disruptiveness; seven to positive adaptation; three to financial concerns and eight to additional factors such as day-to-day focus, mental strain, satisfaction with sexual functioning, sleep disruption, management of the patient's pain, information about the illness, and family interest in caregiving (Son et al., 2012). The questionnaire scored by adding the scores on each item to yield a total score for the instrument; scores range from 0 to 140, the higher the score on the CQOLC, the better the QOL (Duan et al., 2015). The test-retest reliability was 0.95, Cronbach alpha was 0.91 (Edwards and Ung, 2002). In the current study, the Cronbach alpha coefficient was 0.88.

2.6. Sample size determination

Sample size was calculated based on the study data of Bachner and O'Rourke (2007). To achieve about 80% power and a 5% significance level, at least 90 participants were required. Bachner and O'Rourke (2007) had reported an approximately 20% drop-out rate during their preliminary study, therefore the current study adjusted for this by recruiting a further 18 persons (20%), thus 108 participants were recruited into the study.

2.7. Data analysis

Data analysis was done using SPSS version 20, with the significance level was set at 5%. Independent sample t-tests and Chi-square tests were performed to compare socio-demographic characteristics of the participants between the two groups. Repeated measure Analysis of variance (ANOVA) was used to evaluate the effect of the psychosocial intervention on the caregiver burden and caregiver QOL. This effect was determined by assessing the groups (intervention and control groups) across the three time points (baseline, six and 12 weeks), to determine if the intervention had effected early change in caregiver burden and caregiver QOL, and again at week 12 to determine if such change had been sustained.

2.8. Ethical considerations

The study conformed to the principles for ethical research in the Declaration of Helsinki (World Medical Association, 2013). Ethical approval was obtained from the Human Research Ethics Committee of the Faculty of Health Sciences (HREC REF: 243/2016), University of Cape Town, and Ethics Committee of the National Hospital Abuja (NHA/EC/043/2016). Voluntary participation was ensured. Written informed consent was obtained from all participants and information was kept confidential. All efforts were made to minimise risk; however, should any participant have required further counselling this was available.

3. Results

3.1. Sample socio-demographic characteristics

A total of 108 participants were included in the study. The majority of the participants were female (55.6%) with 36.1% being within the ages of 30–39 years. Of the participants, 45.4% were married, 36.1% were graduates and 51.9% were not employed. Of all participants (including the unemployed and most of the employed), 82.4% reported that caregiving did not affect their primary work or employment. No significant differences in any of the socio-demographic variables between the intervention and control groups at baseline were found (Table 1).

3.2. Baseline comparison

At baseline, all participants (108) completed the ZBI and CQOLC. The overall ZBI and its three (role strain, personal strain, competencies and expectation) subscales and overall CQOLC and its five (burden, disruptiveness, positive adaptation, financial concern, and independent items) subscales. No significant difference between intervention and control groups was found (Table 2).

Table 1
Comparison of participant socio-demographic characteristics in the intervention and control groups.

Variable	Total (n = 108)	Intervention group (n = 54)	Control group (n = 54)	*p*-value
Age- group Mean (SD)				
18–29	29 (26.9)	16 (55.2)	13 (44.8)	0.454
30–39	39 (36.1)	22 (56.4)	17 (43.6)	
40–49	24 (22.2)	10 (41.7)	14 (58.4)	
50 and above	16 (14.8)	6 (37.5)	10 (62.5)	
Gender (%)				
Male	48 (44.4)	25 (46.3)	23 (42.6)	0.47
Female	60 (55.6)	29 (53.7)	31 (57.4)	
Sex ratio	0.9	1.2	0.7	
Marital status (%)				
Married	49 (45.4)	25 (46.3)	24 (44.4)	0.71
Divorced	10 (9.3)	4 (7.4)	6 (11.1)	
Single	44 (40.7)	24 (44.4)	20 (37.0)	
Widowed	5 (4.6)	1 (1.9)	4 (7.4)	
Education completed (%)				
Grade nine (Junior secondary)	15 (13.9)	7 (13.0)	8 (14.8)	0.27
12yrs of schooling (High school)	26 (24.1)	9 (16.7)	17 (31.5)	
Undergraduate	19 (17.6)	13 (24.1)	6 (11.1)	
Graduate	39 (36.1)	20 (37.0)	19 (35.2)	
Post graduate	9 (8.3)	5 (9.3)	4 (7.4)	
Employment status (%)				
Permanent	21 (19.4)	13 (24.1)	8 (14.8)	0.26
Temporary	22 (20.4)	11 (20.4)	11 (20.4)	
Retired	9 (8.3)	2 (3.7)	7 (13.0)	
Not working	56 (51.9)	28 (51.9)	28 (51.9)	
Relationship to the patient (%)				
Parent	17 (15.7)	8 (14.8)	9 (16.7)	0.98
Spouse	33 (30.6)	17 (31.5)	16 (29.6)	
Sibling	19 (17.6)	8 (14.8)	11 (20.4)	
Child	23 (21.3)	14 (25.9)	9 (16.7)	
Friend	16 (14.8)	7 (13.0)	9 (16.7)	
Affected primary work (%)				
Yes	19 (17.6)	9 (16.7)	10 (18.5)	0.62
No	89 (82.4)	45 (83.3)	44 (81.5)	

3.3. Comparisons within the intervention group across the time points

The ZBI Results revealed a reduction in the overall mean score and its three subscales in the intervention group across the same time points. This result implies that differences in the score across time could be attributed to the effect of the intervention (Table 2). In terms of progression pattern, overall CQOLC and three of the five subscales (burden, disruptiveness, and independent items), mean scores in the intervention group recorded progressive improvement across the time points from baseline to 12 weeks. Two subscales (positive adaptation and financial concern) in the intervention group showed a reduction over time.

3.4. Comparisons between participants in the intervention and control groups across the time points

Comparison of the post intervention assessments of the two groups at six and 12 weeks showed a reduction in the overall ZBI and two (role strain, personal strain) subscales mean scores in the intervention group as compared with the control group. The repeated measures ANOVA Results indicated all ZBI domains except competencies and expectation was statistically significant across the time points. From baseline to week six showed role strain ($p = 0.000$), personal strain ($p = 0.000$), overall ($p = 0.000$), while from week six to week 12 showed role strain

Table 2
Comparison between the intervention and control groups of the ZBI and QOL scores that measured caregiver burden and caregiver quality of life at three time points.

Variable	Time 1 (Baseline)		Time 2 (6 week)		Time 3 (12 week)		Group X time significance		
	Intervention group (n = 54)	Control group (n = 54)	Intervention group (n = 51)	Control group (n = 52)	Intervention group (n = 50)	Control group (n = 52)	Baseline	Baseline – 6 week	6 week–12 week
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	p-value	p-value	p-value
ZBI									
Role Strain	28.9 (3.6)	24.3 (4.0)	21.4 (7.6)	24.4 (3.1)	19.0 (5.5)	24.5 (3.0)	0.646	0.000*	0.000*
Personal Strain	21.0 (2.7)	17.2 (3.4)	13.8 (4.6)	24.8 (2.9)	12.9 (4.2)	17.1 (2.6)	0.306	0.000*	0.000*
Competencies and Expectation	15.8 (2.2)	12.8 (2.0)	12.1 (4.1)	6.3 (3.4)	10.2 (4.0)	5.6 (3.2)	0.994	0.290	0.067
Overall score	65.7 (6.3)	54.4 (6.9)	47.3 (14.5)	55.4 (5.5)	42.1 (12.1)	46.9 (4.7)	0.705	0.000*	0.018*
CQOL									
Burden	20.6 (3.7)	21.9 (4.6)	25.5 (7.0)	23.4 (15.4)	25.9 (7.0)	10.8 (4.2)	0.161	0.000*	0.000*
Disruptiveness	13.6 (2.2)	14.2 (2.7)	13.7 (3.5)	12.6 (2.7)	15.8 (4.2)	9.1 (5.0)	0.348	0.136	0.672
Positive Adaptation	19.4 (4.0)	18.4 (3.8)	18.8 (3.4)	11.1 (7.6)	18.1 (5.0)	8.9 (5.9)	0.123	0.020*	0.540
Financial Concern	6.3 (3.5)	3.3 (3.1)	6.1 (2.3)	5.8 (1.7)	3.9 (2.3)	3.5 (1.9)	0.141	0.466	0.294
Independent Items	17.0 (3.2)	16.4 (3.3)	19.1 (5.4)	8.8 (4.4)	20.4 (3.2)	9.8 (5.0)	0.340	0.016*	0.042*
Overall score	76.7 (6.2)	76.6 (8.4)	80.3 (18.2)	43.9 (14.0)	87.2 (15.2)	56.6 (28.2)	0.911	0.000*	0.020*

*Significant at 0.05.

(p = 0.000), personal strain (p = 0.000), and overall (p = 0.018). There was no statistical significance in the competencies and expectation domain from baseline to 12 weeks.

The overall CQOLC and its subscales in the intervention group showed higher mean scores than in the control group at six and 12 weeks. Results of the repeated measures ANOVA are shown in Table 2. A significant difference by time effect was found for positive adaptation of QOL from baseline to six weeks (p = 0.020), but was not sustained at 12 weeks. Primary caregivers who received a psychosocial intervention showed a significant improvement in burden, independent items, and overall CQOLC from baseline to week six (p = 0.000, p = 0.016, p = 0.000), and from week six to week 12 (p = 0.000, p = 0.042, p = 0.020). Disruptiveness and financial concern were not statistically significant across the time points. These results suggest that the psychosocial intervention has a positive effect on the caregiver QOL and caregiver burden.

4. Discussion

The study evaluated the effectiveness of a psychosocial intervention on the caregiver burden and QOL of primary caregivers of women with breast cancer. The result showed a positive effect on caregiver burden. As expected, the general pattern in the score of caregiver burden showed a decline from baseline to 12 weeks when compared the intervention group across the three time points. The repeated ANOVA Results showed an effect on the two domains and overall score of caregiving burden, reducing reported caregiving burden at six and 12 weeks. This decline was significant in all domains and overall score except competencies and expectation. The effect of the psychosocial intervention on caregiver burden followed an apriori expectation of a reduction of caregiving burden among caregivers and improved caregiving experience which facilitated better coping with the tasks of providing help and care for care recipients. This finding concurs with that of Bahrami and Farzi (2014) who used the COPE educational programme and Belgacem et al. (2013); both studies reported that caregiver burden was significantly decreased in the intervention group. In contrast, Hudson et al. (2008) who evaluated a psycho-educational intervention that focused on the role of supporting a relative with advanced cancer obtained different result; improvement in caregiving burden was not detected at three time points. Hudson et al. (2005) reported that a psycho-educational intervention improved caregiving experiences such as competence and mastery. Northouse et al. (2005) reported that the Brief COPE intervention programme significantly reduced the negative appraisal of illness and hopelessness from baseline to three months, but this effect was not lasting.

The psychosocial intervention programme enhanced the caregiver QOL. A repeated measure analysis conducted revealed that two subscales (burden and independent items) and overall QOL reported significant differences in scores over the time frames between the control and intervention groups. One subscale (positive adaptation) was statistically significant at six weeks but was not sustained at 12 weeks. We could attribute these differences to the effect of the intervention. Our Results support similar studies that utilised intervention programmes such as COPE, CCP and FOCUS, and reported positive significant effects of a psycho-education intervention on the QOL of caregivers (Belgacem et al., 2013; Leow et al., 2015; Northouse et al., 2013). Leow et al. (2015) and Bahrami and Farzi (2014) reported that the intervention programme significantly improved caregiver QOL and its dimensions across the time points. Both studies measured caregiver QOL using CQOLC, but different psycho-educational intervention programmes were evaluated; Leow et al. (2015) administered the Caring for the Caregiver Programme (CCP) among family caregivers of patients with advanced cancer and Bahrami and Farzi (2014) worked among family caregivers of women with breast cancer using COPE (creativity, optimism, planning, and expert information). Our results differ from those of McMillan and Small (2007) (using the COPE intervention programme), who reported a significant decline in caregiver QOL, and Northouse et al. (2005), who administered FOCUS programme on 134 dyads (breast cancer patients and their family caregivers) and no significant difference in the dyads' QOL across the three time points (from baseline to 6 months) were reported.

In respect of financial concerns, our study found no significant change between the groups after the intervention, although the intervention group scores were higher than the control group after the intervention (6 and 12 weeks). This contrasts with the findings of Leow et al. (2015), who reported a significant effect of (CCP) on the financial concern scale of QOL. Despite the intervention, neither group showed an improvement in the financial concern score at week six and week 12. This may be due to the lack of basic financial resources to meet caregiving demands of the primary caregivers, as most participants were unemployed and remained so throughout the intervention. Nigeria has serious economic problems, with 50% of the population living in extreme poverty (Momoh and Attah, 2018). There is a need to prioritise the reduction of the financial burden that caregiving places on primary caregivers of patients with breast cancer.

It is evident from the literature that the impact and/or effects of psychosocial interventions on the caregiver burden and QOL are mixed. A possible reason for this is that such programmes do not necessarily take into account (or report on) factors such as culture, personality and some social factors. These factors may not have been fully explored and incorporated into these intervention programmes. Caregiving burden comprises both subjective and objective aspects. Caregiver burden can be objectively perceived and measured, while QOL is subjective in nature as it relates to a person's subjective perception of wellbeing and coping ability. Therefore, interventions that do not incorporate the subjective aspects of psycho-education that work with caregiver emotions, feelings, perceptions and experiences are less likely to have a significant effect on the QOL of caregivers. Psycho-education interventions that focus more on objective caregiving, such as amount of time a caregiver spends on caregiving, tasks of caregiving, financial burden and management of medication regimens, are more likely to show a reduction in objective burden, as caregiver distress emanates not only from the practical demands of the caregiver role but also the emotional demands, such as seeing the patient suffer (Northouse et al., 2012). Although a caregiver may able to take care and manage the care recipient, the caregiver's psychological, social and physical health may be affected by the observation of the patient's suffering and the sense of not being able to do more.

5. Limitations

As the study design used a non-randomised design it is acknowledged that the strength of the study is limited. The study involved primary caregivers of women with the most common type of cancer in Nigeria (breast cancer); therefore, the interventions cannot be said to have effects on primary caregiver QOL in relation to other forms of cancer. The psychosocial intervention focused more on objective caregiving, with the Results more likely to show a reduction in objective burden and no effect on subjective burden. Nigeria is large, culturally diverse country, and the results of this study may not be generalizable to other areas or population subgroups.

6. Conclusion

The Results of our intervention were positive and it can be concluded that provision of support and psychosocial interventions for primary caregivers of women with breast cancer can lead to reduction of the caregiver burden and promotion of their QOL. In a country such as Nigeria, with few non-governmental organisations which serve the needs of breast cancer patients, there is a need for effective advocacy on the issue of caregiving burden. This will strengthen the social support of families and create more room for effective family networks and bonding and could contribute to strengthen the traditional collective culture in Nigeria. The need for effective advocacy on the issue of caregiver burden is vital. Relevant stakeholders in the healthcare sector, especially in palliative care, should conduct advocacy campaigns to promote the culture of caring and support for the person with cancer and the caregiver. Such interventions need to address the emotional aspects of caregiving in more detail. Further research in Nigeria should investigate the incorporation into psycho-education programmes of cultural aspects of care for patients with breast cancer, taking into account local conditions, beliefs and rituals.

Conflicts of interest

The authors declare that there are no conflicts of interest.

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