

The Effect of Group Psycho-education on Anxiety, Depression, and Self-Esteem in Breast Cancer Patients

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ABSTRACT

Breast cancer patients experience significant psychological distress and poor self-esteem (SE), suggesting an immediate need for psychosocial intervention. Studies on the impact of group psycho-educational (GPE) intervention on anxiety, depression and SE are scarce, especially in low and middle-income countries. We investigated the effectiveness of an 8-week GPE intervention on anxiety, depression and SE among Nigerian breast cancer patients. Thirty eight women with breast cancer were randomly allocated to two groups (treatment group, TG, N = 19) and control group (CG, N = 19). The TG received an 8-week, 90-minute session of GPE while the CG received an educational booklet. Assessments were conducted at baseline, post-test and 2-month follow-up with Hospital Anxiety Depression Scale and Rosenberg's SE scale. Data were analyzed by intention to treat. The result revealed that participants in the TG had a significant decrease in post-test anxiety and 2-month follow-up compared to the CG. TG also had a significant increase in SE at post-test and 2-month follow-up compared to the CG. There was no significant difference between TG and CG in depression. GPE is an effective psychosocial treatment of anxiety and improved SE among and may serve as a supportive therapy in the management of Nigerian breast cancer patients.

Introduction

Breast cancer is a significant public health issue, the most prevalent form of cancer in women and the second leading cause of mortality among women particularly in low and middle-income countries (LMICs) such as Nigeria (Morounke et al., 2017). Diagnosis of breast cancer can be a very distressing experience for most women and a number of physical and psychological problems at diagnosis, weighs down most of them during and after cancer treatment (Schellenberg, Sabiston, Vallerand, & Gaudreau, 2019). Anxiety and depression are the most significant psychopathological comorbidities faced by breast cancer patients (Wu, Chen, Huang, Chang, & Hsu, 2018). Anxiety can negatively impact recovery from medical procedures, and may even impact survival time (Groenvold, Petersen, & Idler, 2007) and decreased quality of life (Buzgova et al., 2015) in cancer patients. Similarly, depression results in poorer treatment adherence and prognosis, reduced quality of life and compromises patient outcomes, increased risk for hospitalization and leads to higher rates of mortality (de Carvalho et al., 2015).

The development of emotional distress (e.g., depression and anxiety) in women is influenced by other psychological and emotional factors such as low self-esteem (Tae, Heitkemper & Kim, 2012). Self-esteem has been shown to be an important variable in the psychosocial response to

cancer (Curbow et al., 1990), such that individuals diagnosed with cancer often have lower self-esteem. Self-esteem is defined as the degree of worth, value, respect, and love that individuals hold for themselves as human beings in the world (Johnson, 1997). High self-esteem is correlated with the ability to cope more efficiently with the challenges of life (Schroevers, Ranchor, & Sanderman, 2003). Self-esteem is thus an important variable in the psychosocial response to cancer (Curbow et al., 1990), and so recognizing the effect of self-esteem on women with breast cancer (Berterö, 2002), as well as the intervention to enhance it, is of vital importance in cancer treatment.

The negative influence of anxiety, depression and lower self-esteem in women with breast cancer calls for a fundamental need for psychological intervention among patients particularly in LMICs like Nigeria. Psycho-education (PE) is one of the psychological interventions developed to assist cancer patients adapt to cancer diagnosis and treatment (Fawzy & Fawzy, 1994; Matsuda, Yamaoka, Tango, Matsuda, & Nishimoto, 2014). PE refers to a mechanism that offers information, educates patients about their health problems through print, audiovisual or interpersonal channels, and is intended to improve awareness of the subject area and minimize uncertainty (Jacobsen & Jim, 2008). The PE explicitly addresses emotional issues resulting from anxiety that could be triggered by being overwhelmed or confused

(Galway, Black, Cantwell, Cardwell, Mills, & Donnelly, 2012). There is the evidence that PE can help patients adapt and improve their emotions and stress (Liao et al., 2014).

Studies have shown that breast cancer patients who participated in a professionally led group psycho-education (GPE) indicated significant increase in quality of life and decreased levels of anxiety and depression (Liao et al., 2014; Schulman-Green & Jeon 2015; Wu et al., 2018). For instance, in the non-randomized quasi-experimental testing the effectiveness of educational and psychological support intervention among Taiwanese women newly diagnosed with breast cancer, Liao et al. (2014) found that state anxiety significantly decreased at 1 month and 3 month in contrast to participants in the control group. In a recent study aimed at assessing the effects of a psycho-educational intervention on anxiety, and depression in patients with breast cancer, Wu et al. (2018) found a significant decrease in anxiety, and depression in the treatment group.

Although, a number of studies have demonstrated that GPE interventions are effective in reducing anxiety and depression in breast cancer, other studies have found no significant effects. For instance, Yates et al. (2005) found no significant differences in pre-test and post-test intervention on anxiety and depression among breast cancer patients. Coleman et al. (2005) also found no significant differences between groups in terms of mood or symptom outcomes. Due to these controversial findings, Wu et al. (2018) suggested that more research on the effects of psycho-educational intervention on anxiety and depression in breast cancer patients are therefore needed. In addition, few studies have investigated the effectiveness of GPE in improving self-esteem among women with breast cancer, hence this study. Although, some other related group psychotherapy such as cognitive behavioural therapy (Qui et al., 2013), relaxation training (Kovačič, & Kovačič, 2011), and anger control skills training (Sh et al., 2019) has been shown to improve self-esteem among breast cancer patients. We therefore hope that the psycho-education implemented in this study would be effective in improving SE among Nigerian sample.

Furthermore, compared to studies conducted in western countries, few studies have examined the effectiveness of GPE in the reduction of anxiety, depression and self-esteem in LMICs such as Nigeria, hence this study. Despite the enormous negative impact of cancer related pain and emotional distress observed among Nigerian women with breast cancer (Ohaeri, Campbel, & Ilesanmi, 1988; Nuhu, Odejide, Adebayo, & Yusuf, 2009) there are less emphasis on GPE among Nigerian cancer patients. The purpose of this study is therefore to investigate the effectiveness of an 8-week GPE on anxiety, depression and self-esteem among Nigerian women with diagnosis of breast cancer.

We therefore hypothesized that:

1. Participants who received GPE will significantly differ from the control group (CG) on anxiety, such that they will have significant reduction in anxiety scores compared to the CG.

2. Participants who received GPE will significantly differ from the control group on depression, such that they will have significant decrease in depressive symptoms relative to the CG.

3. Participants who received GPE will significantly differ from the control group on SE, such that they will have significant increase in SE compared to the CG.

Method

Participants

Women with breast cancer diagnosis (N=38) attending oncology clinic at the Lagos University Teaching Hospital (LUTH) were recruited using purposive sampling method. The women were eligible for the study if they had: ability to speak and understand English; breast cancer diagnosis (stages I to III) and achieved a significant cut off score in anxiety (10) and depression (8) in HADS scale (Moorey & Greer, 2002). They were excluded from the study if diagnosed with any severe mental health condition (e.g. Psychotic disorders), co-morbid health condition (e.g. hypertension, diabetes) and are taking any anti-depressant or/and anxiolytic drugs as it may influence their mood and thus confound study results. The mean age of the women were 42.47, (SD= 9.28) for the treatment group (TG) and 47.36, (SD= 9.31) for the control group (CG). Most of them were married (TG = 78.9%; CG = 69.2%). Other baseline demographics and clinical characteristics of the study participants for both CBT and control groups are depicted in Table 1 (see page 16).

Measures

Hospital Anxiety and Depression Scale (HADS)

HADS (Zigmond & Snaith, 1983) is a 14-item self-report questionnaire designed to measure anxiety and depression for use in non-psychiatric hospital settings and in outpatient hospital departments. The 14 item is split evenly between the two mood states (anxiety-7 items and depression-7 items) and the 4-point rating scales for each item. Stern (2014) maintains that scores of 8–10 display mild anxiety or depression, 11–14 display moderate anxiety or depression, whereas scores of 15–21 indicate extreme anxiety or depression. The Cronbach's alpha for HADS as reported by the developers (Zigmond & Snaith, 1983) are 0.83 and 0.82 for anxiety and depression respectively. Onyedibe et al. (2020) reported Cronbach's alpha coefficients of 0.77 for anxiety and 0.74 for depression subscales in a sample of Nigerian breast cancer patients.

Self-esteem Scale (SES)

The SES (Rosenberg, 1965) is a 10 item unidimensional measure that assesses overall feelings of self-worth or self-acceptance. The SES are scored on a four-point likert scale ranging from 1= strongly agree to 4=strongly disagree. Five of the items are scored in the reversed direction. Scores range from 0 to 30 with higher scores suggesting higher self-esteem. The Cronbach alpha coefficient of internal consistency given by

Table 1. Baseline demographic and clinical characteristics of study participants

Characteristics	Treatment Group (N= 19)		Control Group (N= 19)		X ² /t	p
	N	%	N	%		
Age	(28-58years) M:42.47, SD: 9.28		(29-60years) M: 47.36, SD:9.31		-1.62	.11
Marital Status						
Married	15	78.9%	13	69.2%	.54	.46
Single	4	21.1%	6	31.6%		
Education						
Secondary	11	57.9%	15	78.9%	2.43	.29
Tertiary	8	42.1%	4	21.1%		
Cancer Stage						
Stage 1	4	21.1%	7	36.8%	1.18	.55
Stage 11	7	36.8%	6	31.6%		
Stage 111	8	42.1%	6	31.6%		
Cancer Duration						
1-5 years	11	57.9%	13	68.4%	3.47	.08
6-10 years	8	44.1%	6	31.6%		
Previous Treatment						
Chemotherapy						
No	4	21.1%	2	10.5%	.79	.37
Yes	15	78.9%	17	89.5%		
Radiotherapy						
No	7	36.8%	12	63.2%	2.63	.10
Yes	12	63.2%	7	36.8%		
Surgery						
No	12	63.2%	9	47.4%	.96	.33
Yes	7	36.8%	10	52.6%		

Note: N= number, M= Mean, SD= Standard deviation

Rosenberg (1965) was 0.78. We obtained a Cronbach α of 0.82 for the present study.

Procedure

Between November 2018 and January 2019, seventy seven (77) breast cancer patients who attended oncology clinic as outpatients at the LUTH and who agreed to participate in the study were recruited. Participants signed the consent form prior to the initial assessment. Forty (40) participants met the inclusion criteria for the study. Thirty seven (37) women were excluded from the study. Among these 37 participants, 8 declined to participate, 25 did not meet the inclusion criteria (for the following reasons: 4 had severe mental health conditions, 11 had language difficulties because they could not understand English, and 10 were too ill to participate in the study), whereas 4 had other personal reasons. The 40 participants who met the inclusion criteria were randomly assigned to two groups: treatment group (TG, N=20) and control group (CG, N=20). The TG had 8 sessions of one session per week, lasting between 60 and 90 minutes. Whereas the control group was presented with a booklet providing information on cancer and cancer treatment strategies, psychological problems and how to cope effectively with cancer. Both groups were assessed at baseline, immediately after the intervention (post-test) and 2-months follow-up. By the end of the 8 weeks of GPE, a total of 16 participants completed the full session of GPE, post-test and 2month-follow-up assessment. Three participants discontinued the intervention (GPE) and one participants was lost to follow-up. For the CG, 15 participants completed the post-test and 2-month follow-up. Four participants did not complete the post-test while one participants was lost to follow-up. The full flow

of the participant can be found in Figure 1.

Intervention

Two therapists conducted the GPE: a clinical psychologist with M.Sc. Clinical Psychology and 8 years of experience in group therapy for cancer patients and a medical doctor / consultant in radiation oncology with 10 years of experience in oncology and management. The medical doctor/consultant was involved in topics involving extensive teaching about cancer, causes and risk factors as well as different treatment options in oncology.

The GPE was a closed 8-week group psychotherapy. The primary aim of psycho-education was to provide participants with information about cancer and cancer management techniques, psychosocial causes of cancer, such as stress, depression, anxiety, self-esteem and cancer coping mechanisms. Participants were educated on interpersonal relationship issues, with emphasis on basic skills for successful communication between family and friends. Finally, information on nutrition and cancer was also provided to them with a focus on the value of good nutrition and a healthy diet. This psycho-education technique has been used in a variety of studies (Capozzo et al., 2010).

The first and second sessions consisted of introductory aspect (general information about the sessions) and experience sharing: women were allowed to share their feelings and experiences of living with cancer. In session three, participants were extensively educated about cancer, risk factors, cancer treatment methods and its associated side effects. Session four was aimed at educating the participants on psycho-social factors (anxiety, depression, self-esteem) in cancer. The fifth session was aimed at discussing coping in cancer. Sub-topics

covered include stress, signs of stress, coping with stress, factors affecting or facilitating coping with cancer. Session six addressed issues related to interpersonal relationships and the following sub-topics were addressed: cancer and family communication, basic skills for effective communication, and factors that hinder relationships with others. Session 7 focused on the value of good nutrition, healthy diet and nutritional factors that contribute to and protect against cancer. The purpose of the 8th session, which marked the end of the entire psycho-education program, was to review the entire program.

Self-expression is at the heart of all group therapy as participants were able to share their thoughts and related emotions within the group during the 8 sessions. Specifically, the therapist and other participants addressed any concerns posed by the participants and offered an effective coping strategy. Homework was a central component of the group sessions as participants were given homework at the end of each session. Each session usually began with a recapitulation of the previous sessions as well as a summary of the homework of the participant. The homework was very helpful because it helped participants better understand how to deal with cancer.

Design and statistics

The study utilized Randomized Control-Group Pre-Test Post-Test Model. The participants were randomized either to the treatment group or to the control group. During the study, the participants remained in the assigned treatment and control groups. Participants were tested both before and after the intervention. Statistical analysis was carried out using version 25 of the SPSS. The baseline demographic and clinical characteristics of the TG and the CG were compared with the Chi square for the categorical or dichotomous variable (e.g. marital status) and the t-test for the continuous variables (e.g. age). For the key outcome variables, the independent sampled t-test was used to assess the difference between TG and CG in anxiety and depression for pre-test, post-test and 2-month follow-up. Standard mean difference (SMD) and 95 percent confidence interval were used to estimate the effect size.

Results

Comparing the baseline demographic and clinical characteristics between groups.

The result showed no significant difference in baseline demographic and clinical characteristics between the treatment group (TG) and the control group (CG) (see Table 1). In the case of categorical variables, the Chi square showed that the participants in TG and CG did not differ significantly in demographic variables (marital status, education) and clinical characteristics (cancer stage, duration of cancer diagnosis and previous treatment type). With respect to the demographic continuous variable (age), the independent sampled t-test revealed that there was no significant age difference between TG and CG. This indicates that both groups are similar in terms of their baseline demographic and clinical characteristics prior to intervention.

Comparing the pre-test outcome variables (anxiety, depression and self-esteem) between groups (TG and CG)

Pre-test result showed that there was no significant difference between treatment group and the control group on anxiety, $t(36) = -.08, p = .93$; depression, $t(36) = -.98, p = .33$ and self-esteem, $t(36) = -.10, p = .91$. This indicates that both groups were equivalent prior to administration of group psycho-educational intervention.

Comparing the post-treatment and 2-month follow-up outcome variables (anxiety and depression) between groups (TG and CG)

For post-test, the result showed a significant difference between participants in TG and CG on anxiety, $t(36) = -4.39, p = .000, CI = -3.92, -1.44, ES = -1.16$; such that participants who received PE intervention had significant lower mean scores ($M = 9.67, SD = 1.23, n = 19$) compared to the CG ($M = 12.36, SD = 2.36, n = 19$). The significant improvement was sustained even 2-months after the intervention, $t(36) = -4.90, p = .000, CI = -4.46, -1.85, ES = -1.25$; with participants in TG exhibiting significant reduced anxiety, $M = 9.93, SD = 1.77, n = 19$ compared to the CG ($M = 13.09, SD = 2.17, n = 19$). This showed that GPE was effective in reducing anxiety among Nigerian breast cancer patients.

There was however, no significant difference between participants in TG and CG on depression both for post-test, $t(36) = -1.55, p = .13, CI = -2.46, .32$ and 2-month follow-up, $t(36) = -1.95, p = .058, CI = -2.84, .05$. This indicates that participants in TG did not experience a significant reduction in depression relative to the CG, suggesting that the GPE may not significantly alleviate depression in this study.

The result also showed a significant difference in self-esteem (SE) between the TG and the CG, $t(36) = 3.05, p = .005, CI = .48, 2.47, ES = 1.48$; for post-test, such that the participants in the TG had significant increase in SE scores ($M = 24.23, SD = 1.88, n = 19$) compared to the CG ($M = 22.37, SD = 1.49, n = 19$). The significant improvement was sustained at 2-month follow-up, $t(36) = 3.05, p = .005, CI = .48, 2.47, ES = 1.48$, with TG having significant higher SE mean scores ($M = 24.15, SD = 1.63, n = 19$) relative to CG ($M = 22.40, SD = 1.07, n = 19$).

Discussion

Our findings showed that group psycho-education (GPE) proved effective in significantly reducing anxiety among breast cancer patients. This is in line with previous studies (Capozzo et al., 2010; Liao et al., 2014; Schulman-Green & Jeon, 2015; Wu et al., 2018) which found that GPE significantly reduces anxiety among participants in the treatment group compared to the participants in the control group. The positive effect of GPE on anxiety was sustained even at 2-month follow-up. This is also supported by other studies (Liao et al., 2014) which specifically showed that group PE significantly reduced anxiety at 1-month and 3-month follow-up. Psycho-education in form of teaching participants about their illness as well as ways of coping with it seems to be beneficial in reducing anxiety among breast cancer.

Table 2: Effect of group psycho-educational intervention on anxiety, depression and self-esteem.

Variable and Time Point	GPE (N=19) Mean (SD)	Control (N=19) Mean (SD)	t	p	95% CI	Between Group ES
Anxiety						
Pre-test	11.47 (2.11)	11.52 (1.74)	-.08	.93	-3.92, 1.22	-.02
Post-test	9.67 (1.23)	12.36 (2.36)	-4.39	.000	-3.92, -1.44	-1.16
2-months Follow-up	9.93 (1.77)	13.09 (2.17)	-4.90	.000	-4.46, -1.85	-1.25
Depression						
Pre-test	9.89 (2.07)	10.63 (2.49)	-.98	.33	-2.24, .77	-.32
Post-test	9.86 (1.75)	10.93 (2.43)	-1.55	.13	-2.46, .32	-.49
2-months Follow-up	9.66 (1.81)	11.06 (2.52)	-1.95	.058	-2.84, .05	-.61
Self esteem						
Pre-test	22.42 (1.60)	22.37 (1.49)	-.10	.91	-.97, 1.07	.05
Post-test	24.23 (1.88)	22.76 (1.02)	3.05	.005	.48, 2.47	1.48
2-months Follow-up	24.15 (1.63)	22.40 (1.07)	3.82	.001	.80, 2.61	1.62

Note: SD: Standard Deviation, GPE = Group psycho-education, ES= Effect size

Since the diagnosis of cancer and its treatment give rise to a greater degree of anxiety among patients, GPE during this period may reduce the anxiety that triggers cancer reactions.

On the contrary, the study found that GPE was not effective in significantly reducing depression among breast cancer patients. Although some studies (Fawzy & Fawzy, 1994; Schulman-Green & Jeon, 2015; Wu et al., 2018) found that GPE significantly reduced depression in the treatment group compared to the CG, previous evidence in support of non-significant difference between the GPE and CG on emotional distress have been documented (Coleman et al., 2005; Yates et al., 2005). Moreover, with this controversial findings on the effectiveness of GPE in the management of emotional distress, Wu et al. (2018) recommended for more study on the effectiveness of GPE on the management of emotional distress. Thus this present study have contributed to the literature confirming that GPE may not be very effective in the management of depression among breast cancer patients.

In addition, our findings showed that GPE was effecting in enhancing self-esteem among our participants. Although, this study appears to be the first study in Nigeria to utilize GPE in enhancing self-esteem among breast cancer patients. Other studies utilizing different group psychotherapeutic techniques in improving SE had been documented (Kovačić, & Kovačić, 2011; Qui et al., 2013; Sh et al., 2019; Wu et al., 2018). These findings corroborate the assertion that psychosocial support therapy (Spiegel, 1999) is the most researched and acceptable psychological intervention for improvement of SE, due to the assumption that shared experiences of emotional and social support are associated with enhanced self-esteem.

This study had important clinical implications for the psychosocial treatment of cancer patients, especially women with breast cancer. Since the group psycho-educational intervention had been found to significantly reduce anxiety and

enhance SE, there is need to incorporate psychosocial intervention in the management of cancer patients for better HRQoL, reduced mortality and higher survival rate in breast cancer, particularly in Nigeria with low survival and higher mortality rate. Psychosocial treatment may not be feasible without sufficient psychosocial evaluation of patients, and it is therefore necessary to include a comprehensive psychological assessment of cancer patients (National Comprehensive Cancer Network, 2016) for effective psychological intervention.

Limitations and suggestions for future research

While the results of this study showed a positive impact of psycho-educational intervention in the reduction of anxiety and improvement of SE among breast cancer patients, a number of limitations are worth noting. The study had relatively smaller number of participants compared with other studies. This may limit its generalization to the entire population of breast cancer in Nigeria. Potential research may include higher number of participants, as this would improve the validity of the results in the study. In addition, the research was performed at one hospital in the southwest of Nigeria. It could also restrict generalization to the entire population with breast cancer in Nigeria. Future researchers may recruit patients from different hospitals in Nigeria's six geopolitical zones for better generalization.

Ethical Compliance Statement.

The study was approved by the Health Research Ethical Committee LUTH, South-West Nigeria (NO: ADM/DCST/HREC/APP/2664).

Conflict of interest: The authors declare that they have no conflict of interest.

Informed Consent: Informed consent was obtained from all individual adult participants included in the study.

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