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Effectiveness of a brief psychological intervention on stress and coping among newly diagnosed breast cancer patients: Results from a randomized controlled trial conducted at a tertiary care center in India

Abhishikha Abhishikha
All India Institute of Medical Sciences
Yumnam Surbala Devi
surshaikhom@gmail.com
All India Institute of Medical Sciences
Vijaya Prasad Barre
All India Institute of Medical Sciences
Anita Dhar
All India Institute of Medical Sciences
Manju AK Rajora
All India Institute of Medical Sciences
Atul Batra
All India Institute of Medical Sciences

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Abstract

Introduction:

Breast cancer is the most prevalent cancer in the world. Literature suggests that breast cancer patients are highly distressed, especially early in the cancer- journey. Coping is found to be one of the defining factors to manage this stress. Thus, there is a need to provide newly diagnosed cancer patient with psycho-oncological support as early as possible to manage their stress and improve coping.

Materials & Methods

A randomized controlled trial was conducted among 70 newly diagnosed breast cancer patients. Using stratified block randomization in a 1:1 ratio with the SNOSE technique, patients were grouped into intervention and control groups. 4 weekly 20–25 minutes individual session based on psychoeducation and MBCT (brief psychological intervention) was administered to the intervention group while the control group received treatment as usual. Baseline clinic-demographic, stress, and coping were assessed using Subject data sheet, QSC-R23, and Brief- COPE respectively. Post-tests of stress and coping were taken at 4 and 8 weeks after enrolment. A logbook was maintained to assess patients' compliance with BPI. Appropriate statistical analysis was done using Stata MP18 and SPSS.

Results

The findings revealed that there was statistically significant stress reduction (p-value = 0.004) and all its domains with moderate to large effect size (□2 = 0.1–0.4) and improvement of coping i.e. more utilization of adaptive (p-value = 0.004) and problem focused coping (p-value < 0.001) and less utilization of maladaptive (p-value < 0.001) and avoidant (p-value < 0.001) coping with large effect size (□2 = 0.39–0.58) in the intervention group as compared to the control group at 8 weeks from baseline. There was a significant negative association of stress at 8 weeks in the intervention group to compliance with BPI (p-value = 0.015).

Conclusion

This study concludes that brief psychological intervention was effective in reducing stress and improving coping among newly diagnosed breast cancer patients.

Introduction

Breast cancer is the second most common cancer and the fourth leading cause of cancer-related deaths worldwide, with 2.3 million morbidities and 0.66 million deaths globally in 2022 (1, 3). It is one of the most prevalent cancers and the leading cause of mortality for women globally (1, 2). Similar statistics can be observed in the Southeast Asia Region (SEARO), where breast cancer ranked first in incidence and second in cause of fatality among all cancers, with an incidence of 0.31 million, a 5-year prevalence of 0.9 million and mortality of 0.14 million (3, 4).

With advancements in medical science and technology, the number of breast cancer survivors is on the rise. As a result, healthcare is transitioning towards a more holistic and promotive approach to health, in addition to traditional curative methods. There is an increasing emphasis on enhancing the overall quality of life for cancer patients. Health-related quality of life (HRQoL) is a multifaceted concept that encompasses the psychological, social, and physical components of patients' daily lives. One of the identified determinants of improved quality of life is the level of stress and its effective management through the utilization of adaptive or problem-solving coping strategies (5).

It is a well-established fact that psychological and psychosocial problems such as distress, depression, social support/function, anxiety, problems related to relationships and impact on family and fear of recurrence are prevalent among all cancer patients (6–8).

Recent studies show breast cancer patients are highly distressed compared to other cancer diagnostic groups (9–12). One in every five women with breast cancer experiences severe distress during treatment (13). Stress is identified as the most common (83.41%) among all psychological comorbidities among breast cancer patients, and it is inversely related to the time of diagnosis (14).

Research indicates that psychosocial interventions are both effective and cost-efficient. While there is limited research specifically in psycho-oncology, studies show similar results in other populations, highlighting the fact that after receiving effective psychological support, there is a reduction in visits to primary care providers. It has also been noted that multiple psychological symptoms may be treated concurrently by psychological therapies that target inappropriate coping mechanisms in breast cancer patients. While strategies to promote wellness and lessen cancer-related distress are increasingly recognized as vital components of cancer care, there remains a pressing need for innovative approaches to mitigate stress early in the cancer journey. While many psychological therapies (cognitive-based therapy, psychoeducation-based intervention, individualized psychological intervention, hope therapy, mindfulness-based approaches) have been studied to manage psychological issues related to breast cancer, mindfulness-based cognitive therapy has shown the most promising results. Thus, there is a crucial need to provide every cancer patient with psycho-oncological support as early as possible (10, 14–27)

Breast cancer patients in India face unique psychosocial challenges shaped by cultural beliefs, stigma, and limited mental health resources, underscoring the need for culturally sensitive psychoeducational interventions to prevent and manage distress (43). Psychological interventions incorporating psychoeducation, stress management, and counselling have not only been identified as essential components of supportive cancer care but have also demonstrated significant reductions in stress and improvements in quality of life among breast cancer patients (10, 12). Randomized controlled trial evidence further supports that structured psychoeducation reduces distress and improves coping strategies, with adaptive coping increasing and avoidant coping decreasing significantly following psychoeducational interventions in women with breast cancer (41–42). Taken together, this evidence highlights the potential of brief, culturally adapted psychoeducational interventions delivered at diagnosis to address the psychological burden of breast cancer in Indian clinical settings.

Mindfulness-based cognitive therapy is a type of psychological intervention that combines cognitive behavior therapy with mindfulness-based stress reduction (28). This therapy is widely utilized for the management of psychological problems and diseases (stress, depression, and anxiety) and results in the improvement of mental health as well as overall quality of life (16). This treatment is also frequently used for patients with breast cancer and has been shown to enhance their physical, mental, and spiritual well-being (17).

Considering such enormous benefits of mindfulness cognitive-based therapy and psychoeducation, the researcher would like to evaluate their combined effectiveness among newly diagnosed patients as these studies have either focused on later stages of treatment—the rehabilitative phase or are performed in isolation. The clinical effects of MBCT with psychoeducation on newly diagnosed breast cancer have not been conclusive. The present study aimed to explore the effectiveness of a brief psychological intervention on stress and coping among those newly diagnosed with breast cancer.

Methodology

The present study employs a quantitative approach and a parallel-group, non-blinded, randomized controlled trial design. It follows CONSORT Guidelines (29). It was carried out at the IRCH and Surgical Block, AIIMS, New Delhi, from August 2024 to January 2025. The population of the study is newly diagnosed breast cancer patients enrolled using a consecutive sampling technique, meeting the following requirements:

Inclusion criteria: (i) Patients who have been newly diagnosed with breast cancer (within the previous month), already diagnosed by a consultant with a histopathological examination report. (ii) Patients aged 18 years and older; (iii) patients who can read English or Hindi, or are accompanied by attendants who can read English or Hindi.

Exclusion criteria: (i) Have a history of pre-existing psychiatric illness; (ii) are currently receiving any psychotherapy or counselling; (iii) are physically unfit for this study's interventions (ECOG PS >3).

Human Ethics and Consent to Participate declarations:

The present study was conducted in accordance with the Declaration of Helsinki. The Ethics Committee of AIIMS (Institute Ethics Committee for PG Research, AIIMS New Delhi), New Delhi, issued ethical clearance for the present study with reference number *AIIMSA00891/21.03.2024.*

Clinical trial registration was done on 24.05.2024 with the number *CTRI/2024/05/067890 at Clinical Trial Registry- India (ICMR - NIMS)*

Informed consent was obtained from the patients who were willing to take part in the present study. Confidentiality and anonymity of the data collected from newly diagnosed breast cancer patients were maintained.

Sample size calculation:

The sample size is calculated based on the pilot study data obtained. The minimum sample size required for a significant difference in both primary variables between the intervention group and the control group at 6 weeks is the basis for calculating the sample size.

Using the formula for a statistically superior trial, n= 2*[(z1-α/2+ z1- β)/δ2]2 *s2

1. Based on mean stress scores at 6 weeks in the pilot study:

Estimated sample sizes: n = 64 (32 in each group)

2. Based on the mean maladaptive coping score at 6 weeks in the pilot study:

Estimated sample sizes: n = 58 (29 in each group)

Thus, in the present study, the sample size is taken as n = 64. Considering 10% attrition, the sample size is taken as 70 for the study, 35 in each group.

Randomization

This study used stratified permuted block randomization, stratifying trial participants according to their treatment group (surgery or chemotherapy). An allocation sequence was generated via computer-generated random numbers. SNOSE techniques (Sequentially Numbered Opaque Sealed Envelope) were used to randomly assign newly diagnosed breast cancer patients to an intervention and a control group using a 1:1 allocation ratio and block randomization.

Intervention

Brief psychological intervention is prepared specifically in-house for the current research based on mindfulness-based cognitive therapy and psychoeducation under the guidance of guides and co-guides. The intervention is validated by a group of 5 experts (2 psychologists and 3 nursing faculty members). The researcher had 3 months of training under a clinical psychologist to develop efficiency in delivering the intervention.

The intervention includes four weekly sessions, each of duration 20-25 minutes, and was administered to participants in the intervention group while participants in the control group received treatment as usual. The sessions include one-time psychoeducation and the use of mindfulness and cognitive therapy derived from MBCT as shown in Table 1. The complete Brief Psychological Intervention (BPI) is available in supplementary file 1. Audio recordings of various mindfulness exercises were also shared with participants, and a weekly logbook (available in supplementary file 3) was maintained to assess compliance. The sessions were administered face-to-face or telephonically, based on participants' convenience and availability. The study's outcomes were assessed three times: pre-intervention (t0), immediately after the intervention (t1), and 4 weeks after the intervention (t2).

Table 1 Brief Psychological Intervention across 4 weeks

Time of week	Topics	Content
Week 1	Psycho-education and introducing the therapy	Session starts with familiarization with the help of a leaflet (supplementary file 2). Psychoeducation includes debunking breast cancer related myths and explaining about cancer, stress and coping mechanisms and how these factors interplay. Introducing the therapy, its components and goals. Explaining mindfulness and performing mindfulness meditation and eating.
Week 2	Mindfulness exercises	Explaining and training regarding body scanning, mindfulness stretching and three- minute breathing space.
Week 3	Coping and acceptance	Training involves recognizing automatic reactions, identifying common cognitive distortions related to cancer and learning techniques to respond to negative automatic thoughts. Discuss various coping mechanisms such as adaptive and maladaptive mechanisms.
Week 4	Termination phase	Teaching to practice mindfulness in day-to-day life. Paying attention to reactions when faced with problems and its effect on the body and the mind, perform breathing exercises to calm and relax. Terminating the intervention, reflect on the experience and obtain feedback from the participants.

Outcome Measures:

Sociodemographic and clinical data were collected using a researcher-developed Subject Data Sheet, which captured age, gender, marital status, residential area, education, occupation, socioeconomic status (assessed using the Modified Kuppuswamy Scale), cancer staging, planned/received treatment, health comorbidities, ECOG Performance Status, and prior mindfulness experience.

Psychological stress was assessed using the Questionnaire on Stress in Cancer Patients – Revised Version (QSC-R23), a validated 23-item cancer-specific tool scored on a 5-point Likert scale (range 0–115; higher scores indicating greater stress) across five domains: psychosomatic complaints, fears, information deficit, everyday life stressors, and social strain (reliability r = 0.89).

Coping was assessed using the Brief-COPE, a validated 28-item self-report instrument scored on a 4-point Likert scale, measuring adaptive, maladaptive, problem-focused, emotion-focused, and avoidant coping strategies (test-retest reliability 0.50–0.90). All tools were translated into Hindi using a forward-backward translation method, and consensus between both versions was ensured.

Pilot study

Before the main trial, a pilot study was conducted to assess the feasibility of the intervention protocol in the study setting. Twelve patients were enrolled and randomized equally into intervention (n = 6) and control (n = 6) groups. The pilot followed the same protocol as the present study, with the exception of a shorter follow-up period of 6 weeks rather than 8 weeks. The pilot confirmed the feasibility of recruitment, randomization, intervention delivery, and data collection procedures within the tertiary care oncology setting. Given the small sample size, no formal statistical analysis was performed on the pilot data, and the data remain unpublished.

Data collection procedure

All newly diagnosed breast cancer patients were approached, screened, and 70 patients who met the inclusion criteria and were willing to participate were enrolled in the present study. The participant information sheet was read and handed over to the participants. Informed written consent was taken from the participants.

The pretest was conducted at baseline (T0). The intervention group received a four-week Brief Psychological Intervention, while the control group continued with treatment as usual. The four individual sessions were delivered either face-to-face or via telephone, based on the patients' convenience and availability. The first session was either planned in the same week of enrolment or delivered at the time of enrolment. Subsequent sessions were scheduled to align with patients' hospital appointments. The intervention sessions were conducted in a serene and calm environment. A weekly logbook was maintained to monitor progress and document

any issues encountered by patients in the intervention group. Patients were called and post-test was collected after 4 weeks (T1) and 8 weeks (T2) of enrolment.

After the study, patients in the control group were provided with psychoeducation. They received information and education about psychological health and coping strategies. Additionally, they were given access to the audio material of the Brief Psychological Intervention, enabling them to benefit from the intervention post-study.

All data were collected using CSPro software from 1st September 2024 to 8th January 2025.

Blinding

The characteristics of the intervention precluded blinding of participants and research personnel. Nevertheless, measures were implemented to minimize potential bias by ensuring that the statistician remained unaware of participants' allocation status throughout the analytical process.

Data analysis

Data was extracted from CSpro Software in suitable formats (.xlsx, .sav and. dta). Data analysis was done using appropriate descriptive statistics and inferential statistics. P-value <0.05 is considered statistically significant.

Stata MP18 and SPSS-20 were used for the analysis of data. Shapiro-Wilk test is used to ascertain the normality of data collected, and it was found to be normally distributed ($P > 0.05$). Pearson Chi2 test, Fisher's exact test and independent t-test were used to ascertain homogeneity of sociodemographic and clinical information between groups at baseline. Repeated-measure ANOVA is used to compare changes in outcome variables of both groups over 3-time points. Post hoc Bonferroni correction was applied to adjust for multiple comparisons. The group × time interaction effect was assessed to determine the effectiveness of the intervention over time. Partial eta squared ($\eta 2$) was used to measure the effect size for significant interaction effects [20]. Assumptions necessary for conducting RM-ANOVA were checked and confirmed. For all the outcome variables, assumption of sphericity was measured using Mauchly's test. Greenhouse–Geisser correction was applied for the variables which did not meet the sphericity assumption.

Results

Figure 1 depicts the CONSORT diagram for the present research. After excluding 23 patients, 70 eligible participants were recruited. There was no loss to follow-up, and thus, per protocol analysis was carried out in the present research.

Section I: Baseline sociodemographic and clinical information of participants

Table 2 shows the sociodemographic and clinical information of participants. The mean age of patients was 46.5 ± 8.9 years in the intervention group and 46.9 ± 10.5 years in the control group. Most participants were female in both the intervention (100%) and control (97.1%) groups. Among the patients, 82.9% in the intervention group and 91.4% in the control group were married. The majority were urban residents in both the intervention (65.7%) and control (60.0%) groups. Most patients in both groups had primary or no formal education (57.1% intervention; 54.3% control) and were unemployed (80.0% intervention; 71.4% control). The socioeconomic status of most patients in both groups was lower middle class (54.3% intervention; 51.4% control).

Regarding clinical characteristics, there was an equal distribution of patients diagnosed with stage 1, 2, and 3 cancers in the intervention group (28.6% each), while in the control group most patients were diagnosed with stage 3 cancer (48.6%). The majority of patients had no previous experience with mindfulness in both groups (88.6% intervention; 85.7% control).

Both groups were found to be homogeneous and comparable at baseline across all sociodemographic and clinical variables ($p > 0.05$).

Section II: Effect of BPI on stress scores of newly diagnosed breast cancer patients

Figure 2 shows that the trajectory of the mean stress score in both groups is comparable at baseline. Stress scores increased in both groups at 4 weeks follow-up ($p < 0.001$), followed by a steep decline at 8 weeks in both groups ($p < 0.001$).

Repeated measures ANOVA revealed a significant group × time interaction effect for total stress ($F = 52.4$, $p < 0.001$, $\eta^2 = 0.4$), indicating that the trajectory of stress reduction differed meaningfully between the two groups over time (Table 3). Similar patterns were observed across all stress domains — psychosomatic complaints, fears, information deficit, everyday life stressors, and social strain — with significant group × time interaction effects ($p = 0.001$ to < 0.001) and moderate-to-large effect sizes ($\eta^2 = 0.1–0.4$). At 8 weeks, the intervention group had significantly lower stress scores compared to the control group in total stress and most of its domains, with the exception of everyday life stressors ($p = 0.22$).

Pairwise comparisons (Supplementary Table 1) revealed that from baseline to 8 weeks, the intervention group showed significant declines across total stress and all its domains. In contrast, the control group showed significant increases in total stress and most of its domains, with the exception of a decrease in information deficit.

At 8 weeks, the distribution of stress levels differed significantly between groups ($p = 0.037$; Supplementary Table 2). All patients in the intervention group fell within the low or average stress categories, with none in the above-average range, compared to 17.1% of control group patients who remained in the above-average stress category.

Section III: Effectiveness of BPI on Coping among Newly Diagnosed Breast Cancer Patients

At baseline, no significant differences were observed in any coping domain between groups ($p > 0.05$), confirming comparability (Table 4).

Repeated measures ANOVA revealed significant group × time interaction effects for adaptive ($F = 60.4$, $p < 0.001$, $\eta^2 = 0.47$), maladaptive ($F = 95.4$, $p < 0.001$, $\eta^2 = 0.58$), problem-focused ($F = 44.0$, $p < 0.001$, $\eta^2 = 0.39$), and avoidant coping ($F = 78.7$, $p < 0.001$, $\eta^2 = 0.54$), all with large effect sizes, indicating that the two groups followed meaningfully different coping trajectories over time. Emotion-focused coping did not yield a significant group × time interaction ($F = 0.8$, $p = 0.4$).

At 4 weeks, the only significant between-group difference was in self-distraction, a subdomain of avoidant coping, with the control group utilizing it more than the intervention group ($p = 0.02$). No other domain differed significantly at this time point.

At 8 weeks, significant between-group differences were observed across all major coping domains except emotion-focused coping (Table 4). The intervention group demonstrated significantly higher adaptive coping ($p = 0.004$) and problem-focused coping ($p < 0.001$). Maladaptive coping ($p < 0.001$) and avoidant coping ($p < 0.001$) were significantly lower in the intervention group. While overall emotion-focused coping did not differ significantly between groups ($p = 0.7$), two of its subdomains showed significant differences: acceptance was higher ($p = 0.02$) and self-blame was lower ($p < 0.001$) in the intervention group compared to the control group.

Within-group comparisons (Supplementary Table 3-4) showed that the intervention group demonstrated consistent and progressive improvement in coping across all three time points. Adaptive and problem-focused coping increased significantly across all time point ($p < 0.001$), while maladaptive and avoidant coping showed significant and sustained decreases across the same comparisons ($p < 0.001$), reflecting steady improvement in coping mechanism of intervention group over 8 weeks. Emotion-focused coping remained stable throughout with no significant within-group change at any time point.

In contrast, the control group showed no significant within-group change in adaptive, maladaptive, problem-focused, or avoidant coping across any time point. The only notable within-group change in the control group was a significant increase in emotion-focused coping from baseline to 8 weeks ($p = 0.032$).

The BPI was effective in improving adaptive, problem-focused, maladaptive, and avoidant coping among newly diagnosed breast cancer patients, with emotion-focused coping remaining unaffected.

Figure 3 shows the compliance of participants in the intervention group to the BPI at 8 weeks. The majority of patients (74.3%) demonstrated good compliance, with a mean compliance duration of 41.9 ± 6.6 days. Poor compliance was observed in 25.7% of patients. Additionally, compliance was significantly associated with stress outcomes at 8 weeks ($p = 0.015$), with highly compliant patients experiencing significantly lower stress compared to those with poor compliance.

Discussion

The present study found that the BPI was effective in reducing stress and improving coping among newly diagnosed breast cancer patients at 8 weeks, with moderate-to-large effect sizes. These findings are in concordance with Barre et al. (2016) where a combined medical and psychological intervention incorporating psychoeducation, relaxation techniques, and cognitive therapy produced significant reductions in stress [t(29) = 22.85, P < 0.01, effect size = 4.55] alongside quality of life improvements [t (29) = 15.87, P < 0.01, effect size = 2.16] in breast and head and neck cancer patients.

Both groups showed a transient increase in stress at 4 weeks compared to baseline, followed by a steep decline at 8 weeks. This rise can be attributed to the initiation of the first course of treatment — chemotherapy or surgery — among newly diagnosed patients.

The psychoeducational component of the BPI, which addressed myths and misconceptions surrounding breast cancer and explained the interplay between cancer, stress, and coping, likely reduced catastrophic illness appraisal. Younis et al. (2021), in a double-blinded RCT among 200 women with breast cancer, reported that psychoeducation significantly increased adaptive coping and decreased avoidant coping, with the intervention group demonstrating significantly higher adaptive coping at 12 weeks (B = 0.921, p < 0.001). Koizumi et al. (2023), in a multicentre RCT, similarly reported that the O! PEACE psychoeducation therapy significantly reduced distress (p = 0.011, ηp^2 = 0.089) and improved stress-coping strategies (p = 0.018, ηp^2 = 0.074) in women with early breast cancer. These effects are comparable in direction and magnitude to those observed in the present study.

The mindfulness-based components of the BPI further reinforced these gains. Park et al. (2020) demonstrated that an 8-week MBCT program produced significantly lower psychological distress (p < 0.001) in breast cancer patients, with effects sustained at 12 weeks. A meta-analysis by Wang et al. (2023) of 11 RCTs confirmed that mindfulness-based interventions significantly reduced perceived stress (MD = − 1.46, 95% CI = − 2.53 to − 0.38, p = 0.03) and improved coping strategies (MD = 1.26, p = 0.03) in breast cancer patients. The present BPI achieved comparable effects within a condensed 4-week format. These findings are consistent with Burgess et al. (2021), who demonstrated that a 5-week abbreviated MBCT protocol produced significant reductions in acute distress (t(53) = 6.98, p < 0.001, d = 0.95) and improvements in overall well-being (t(53) = − 7.26, p < 0.001, d = 0.99) with large effect sizes in a clinical sample.

Present findings are, however, in disagreement with Ding et al. (2024), who reported that cognitive-behavioural stress management alone could not significantly lower perceived stress, anxiety, or depression in breast cancer patients. The divergence can be attributed to the fact that BPI has integrated both cognitive-behavioural and mindfulness components, which, through complementary mechanisms such as reduced rumination, enhanced present-moment awareness, and improved emotional regulation, gave the present results.

The progressive within-group improvement in coping across all three timepoints in the intervention group, in contrast to the absence of significant change in the control group, further points to the efficacy of the intervention. The stability of emotion-focused coping in the intervention group against a significant increase in the control group (p = 0.032). This suggests the BPI prevented the dysregulation of emotional coping that tends to occur when patients face a diagnosis without any structured support.

Adherence to BPI among the intervention group was high, indicating that a brief and personalized programme is not only effective but better tolerated and accepted by the breast cancer patients. Greater compliance was significantly associated with lower stress at 8 weeks (p = 0.015), suggesting that better compliance led to better outcomes.

Strengths

This study is a pioneer in evaluating the effect of a novel intervention, adapted from psychoeducation and mindfulness-based cognitive therapy, in newly diagnosed cancer patients in India. This intervention is made to focus on and prioritize patients' comfort through telephonic communication activities and their convenience. The shorter length of the intervention that aligns with the patient's timeline for treatment further enhances compliance and cooperation on the patient’s end.

The study utilizes standardized, cancer-specific tools, thereby strengthening its outcomes.

Due to the moderate to large effect size of the intervention for stress and coping and the inclusion of males with breast cancer, this study has good generalizability.

Limitations

This study had many limitations. Firstly, the follow-up period was limited to 8 weeks in this research. So, the long-term effects of intervention could not be assessed. Secondly, stress, coping, and compliance were assessed using self-reported measures. Thus, limiting the reliability of data. Additionally, the study was conducted at a single centre, limiting the generalizability of the findings. Additionally, the mechanisms through which the BPI achieves its effects, whether through cognitive restructuring, psychoeducation, relaxation training, or their combination, could not be isolated in the present design, and future dismantling studies would be valuable.

The mode of delivery of the intervention was also not systematically compared in this study. While it was ensured that at least the first two sessions were conducted face-to-face, subsequent sessions may have been delivered telephonically, introducing potential variability within the intervention group. Whether in-person and telephonic delivery are equivalent in therapeutic effects remains an open question, which can be answered by the future studies.

Implications

Nurses can include the present intervention (BPI) in the psychological rehabilitation of patients with breast cancer. A multicentric study with a large sample size can be carried out to generalize the study's findings. Additional research could validate the efficacy of the intervention by assessing stress biomarkers and may also include more and longer follow-ups. Further research may focus on a subgroup population that has a higher level of stress or maladaptive coping through screening to yield better and more targeted results. This intervention (BPI) can also be studied for patients with other long-term chronic diseases in order to mitigate stress and improve coping.

Conclusion

This study concludes that brief psychological intervention was effective in reducing stress and improving coping among newly diagnosed breast cancer patients. Thus, brief psychological intervention can be utilized to manage stress and improve coping among newly diagnosed breast cancer patients.

Declarations

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Author Contributions: All authors contributed to the study conception and design. Material preparation, formulation of intervention, data collection and analysis were performed by A.A., Y.S.D., and V.B.P. A.D. and A.B. guided the process of data collection and interpretation. The first draft of the manuscript was written by A.A., and all authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

Ethics approval: This study was performed in line with the principles of the Declaration of Helsinki. Ethical Approval was granted by the Institute Ethics Committee for Postgraduate Research (IEPG), All India Institute of Medical Sciences, New Delhi. with reference number *AIIMSA00891/21.03.2024*.

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

Consent for publication: All authors consent for publication in the Supportive Care in Cancer.

Data availability: The data from the findings of this study are not openly available due to sensitivity reasons but are available from the corresponding author upon reasonable request.

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Tables

Tables 1 to 4 are available in the supplementary files section

Figures

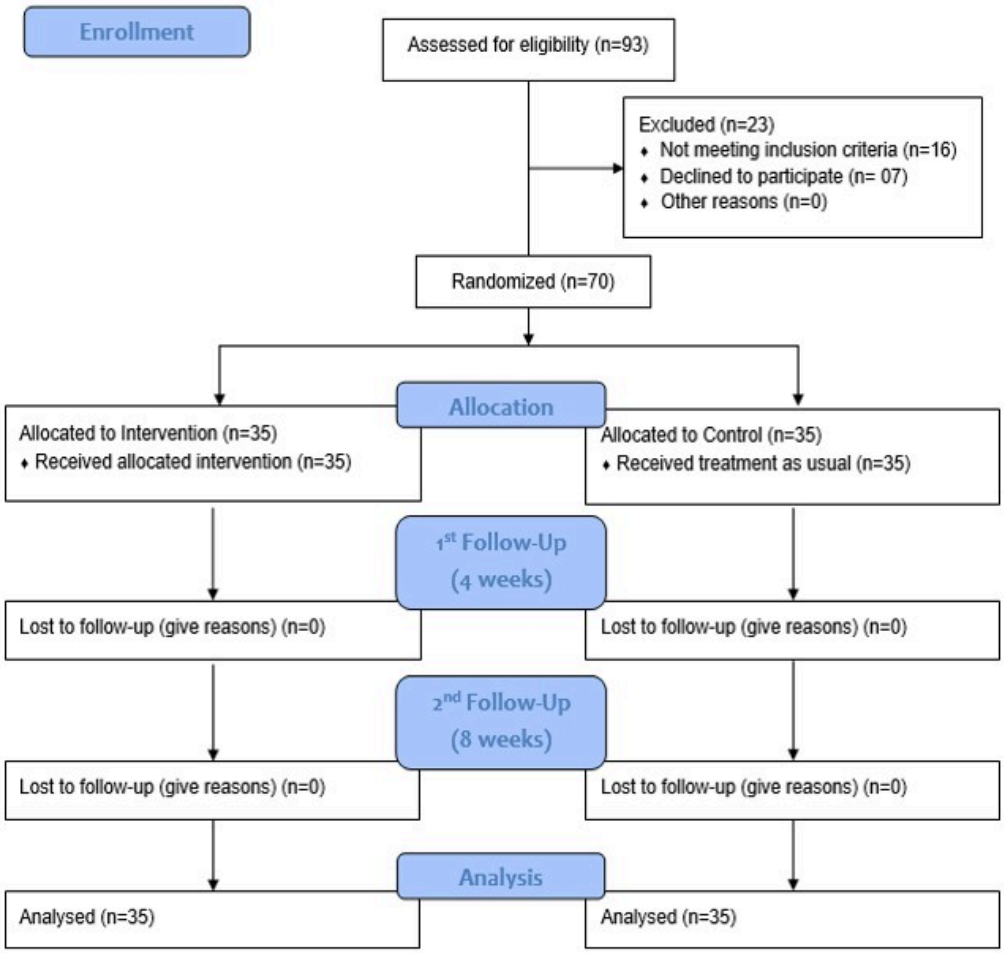


Figure 1

CONSORT diagram showing the procedure of data collection.

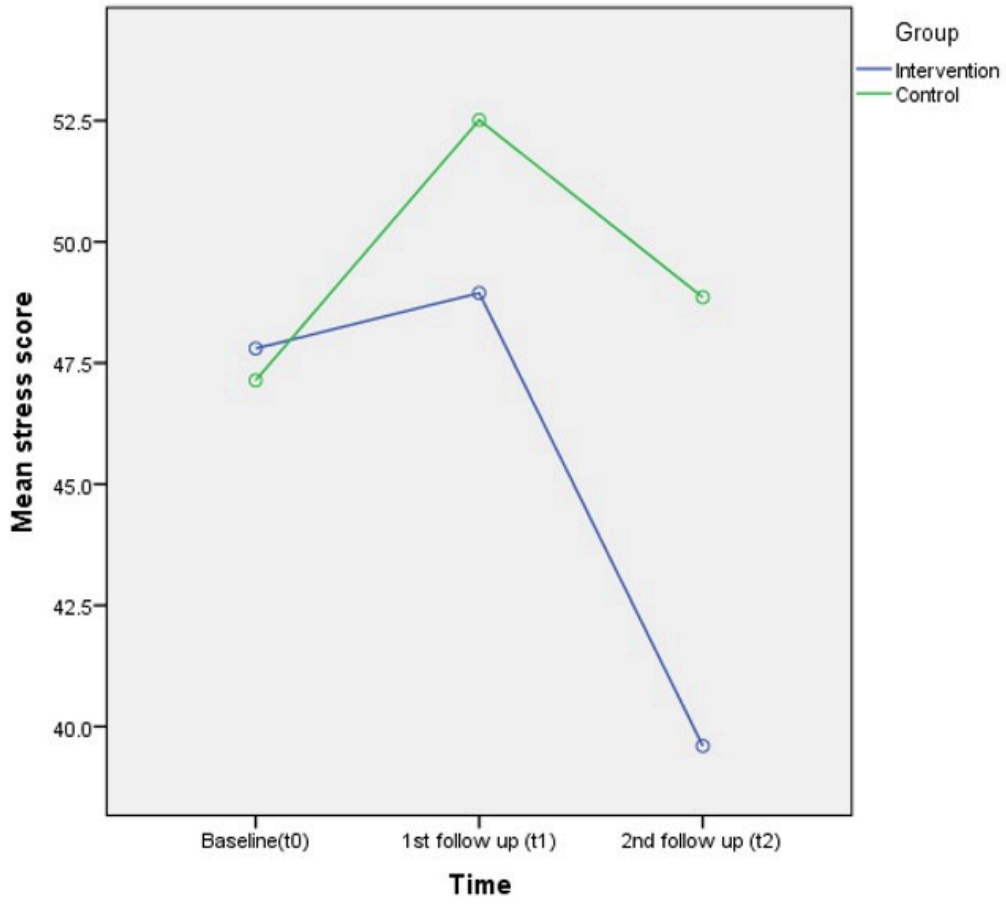


Figure 2

Line graph showing change in total stress scores of intervention and control group over 3 time points.

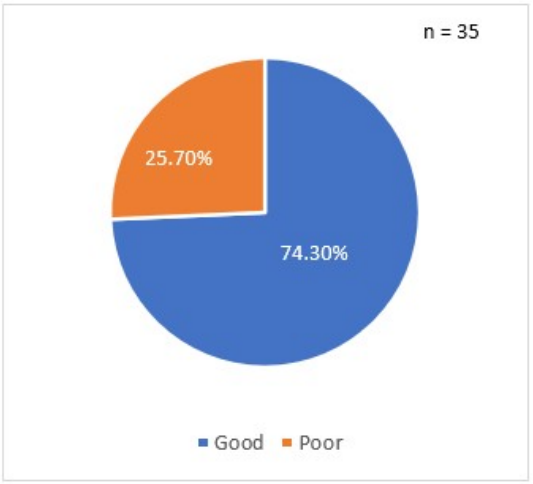


Figure 3

Pie Chart showing Compliance with Brief Psychological Intervention

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- Table1.docx
- Table2.docx
- Table3.docx
- Table4.docx
- BriefPsychologicalIntervention.docx
- Handoutthefinal2.pdf
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