How does Education Regarding Stress Reduction Technique Activities Affect PHQ9 and GAD7

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ABSTRACT

Mental health conditions such as depression, anxiety, and PTSD are prevalent among home care patients and significantly impact quality of life. This Doctor of Nursing Practice (DNP) project aims to assess the impact of structured education on stress reduction techniques such as mindfulness-based stress reduction (MBSR), progressive muscle relaxation, cognitive reframing, and guided breathing on PHQ-9 and GAD-7 scores. A selected registered nurse at Home Healthcare Organization provided targeted education to eligible patients, using a teach-back method to ensure comprehension. PHQ-9 and GAD-7 assessments administered before and two weeks after the intervention. Data analyzed to determine if stress reduction education positively affects mental health outcomes. The goal is to demonstrate the efficacy of practical, evidence-based stress management techniques in home care, leading to measurable reductions in depression and anxiety symptoms.

INTRODUCTION

Education on stress reduction techniques is an essential intervention for improving mental health outcomes, particularly for individuals experiencing stress, depression, anxiety, and PTSD. Mindfulness-based stress reduction (MBSR) has been shown to positively impact mental health by improving emotional regulation, decreasing psychological distress, and enhancing overall well-being (Goldberg et al., 2018; Gotink et al., 2016). This DNP project examined how structured education on stress reduction techniques conducted by a registered nurse (RN) at Home Healthcare Organization influences PHQ-9 (Patient Health Questionnaire-9) and GAD-7 (Generalized Anxiety Disorder-7) scores.

The PHQ-9 and GAD-7 are validated tools for assessing depression and anxiety severity, respectively (Kroenke et al., 2010). Stress reduction interventions such as MBSR, including guided breathing exercises, cognitive reframing, and progressive muscle relaxation, have demonstrated significant improvements in emotional well-being and mental health outcomes (Hofmann et al., 2019; Kabat-Zinn, 1990). This project aims to empower patients with self-management tools that improve emotional health and reduce depression and anxiety symptoms.

Background and Significance

Depression, anxiety, and PTSD contribute to increased healthcare utilization, reduced adherence to medical regimens, and poor quality of life among home health patients. Many of these conditions are underrecognized and undertreated in community-based care. Education on stress reduction techniques is a cost-effective, non-pharmacologic approach that empowers patients and promotes self-management. Mindfulness-based interventions (MBIs), including breathing techniques and cognitive reframing, have shown efficacy in lowering psychological distress. The DNP project targets these challenges by providing structured education to patients receiving care from Home Healthcare Organization, reinforcing the importance of holistic, patient-centered care.

Needs Assessment of Home Healthcare Organization

Home Healthcare Organization serves a diverse population with complex physical and psychosocial needs. Preliminary observations reveal a significant number of patients reporting symptoms of stress, anxiety, and depression, yet few receive consistent mental health support. There is also limited use of non-pharmacologic stress reduction interventions. Interviews with nurses and case managers at the healthcare organization confirmed the need for practical mental health education and a structured intervention to reduce patient distress. This project bridged this gap by integrating simple, teachable stress reduction techniques into routine care.

Problem Statement

Despite the high prevalence of depression and anxiety among home health patients at the healthcare organization, there is a lack of structured, non-pharmacologic educational interventions targeting stress reduction. Without targeted education, patients may continue to experience avoidable psychological distress, resulting in poor outcomes. There is a need to evaluate whether nurse-led education on evidence-based stress reduction activities can significantly reduce PHQ-9 and GAD-7 scores.

Project Aims and Objectives

The primary aim of this Doctor of Nursing Practice (DNP) project is to evaluate the effectiveness of a structured, nurse-led educational intervention on stress reduction techniques in improving mental health outcomes among patients with symptoms of depression, anxiety, and post-traumatic stress disorder (PTSD). The project specifically assessed changes in standardized screening tools, the Patient Health Questionnaire-9 (PHQ-9) and the Generalized Anxiety Disorder-7 (GAD-7), as indicators of patient progress.

This project is grounded in the rationale that education on stress management is a critical, evidence-based component of comprehensive care for individuals dealing with mental health challenges. Patients living with depression, anxiety, and PTSD often experience chronic stress that exacerbates their symptoms and decreases their quality of life. Through targeted educational interventions, patients can learn and apply practical techniques such as guided breathing, cognitive reframing, and progressive muscle relaxation core components of mindfulness-based stress reduction (MBSR). These interventions have been well-documented in literature as effective tools for promoting psychological well-being.

The specific objectives of the project are to:

1. Deliver structured stress reduction education to selected patients through one-on-one sessions conducted by a trained registered nurse at Home Healthcare Organization.

2. Equip patients with realistic, evidence-based techniques such as guided breathing, cognitive reframing, and muscle relaxation to manage their symptoms.

3. Engage patients in active learning through verbalization, return demonstration, and teach-back methods to reinforce understanding and ensure retention of the material.

4. Measure mental health outcomes using pre- and post-intervention PHQ-9 and GAD-7 scores to assess the impact of the intervention.

5. Analyze changes in PHQ-9 and GAD-7 scores to determine whether the intervention leads to measurable improvements in depression and anxiety symptoms.

Aims:

1. **Reduce anxiety and depression** through structured education on stress reduction techniques.

2. **Evaluate the effectiveness of the intervention** using pre- and post-intervention PHQ-9 and GAD-7 scores.

3. **Assess staff feedback** on the feasibility and perceived benefits of the intervention through a structured survey.

Objectives:

- Implement structured education sessions focused on MBSR techniques.
- Measure patient improvement through changes in PHQ-9 and GAD-7 scores from baseline to post-intervention.
- Collect staff feedback using a survey to evaluate the intervention's impact and feasibility.

REVIEW OF LITERATURE

Mindfulness and education-based interventions have proven effective in improving psychological symptoms. Kabat-Zinn (1990) pioneered MBSR, which remains a foundational approach. Research supports the effectiveness of mindfulness-based stress reduction (MBSR) in managing symptoms of depression, anxiety, and PTSD. Kabat-Zinn's MBSR model has been widely used to teach patients how to regulate emotions, improve resilience, and reduce psychological distress (Khoury et al., 2013). Studies show that structured breathing exercises, progressive muscle relaxation, and cognitive reframing are associated with reductions in PHQ-9 and GAD-7 scores (Hoge et al., 2013; Cramer et al., 2016). Implementing these evidence-based strategies through cealth education provides a practical, scalable intervention for improving mental health outcomes. Additionally, Gordon et al. (2022) emphasized the importance of integrating non-pharmacological mental health treatments in home health settings.

Method Overview

This project utilizes a quasi-experimental, one-group pretest-post-test design to examine the effect of stress reduction education on depression and anxiety symptoms. The intervention took place at Home Healthcare Organization, a community-based home healthcare organization that provides services to diverse patient populations.

This DNP project is a **quality improvement (QI) initiative** designed to evaluate the impact of structured education on stress reduction techniques on patient mental health outcomes, measured through changes in PHQ-9 and GAD-7 scores. Stress, depression, anxiety, and PTSD are significant public health concerns that affect emotional well-being and overall health. Research supports that structured mindfulness-based stress reduction (MBSR) and similar techniques improve mental health outcomes by enhancing emotional regulation, cognitive restructuring, and stress coping mechanisms (Gotink et al., 2016; Hofmann et al., 2019). The project aims to provide patients with realistic and practical tools to manage stress and improve emotional resilience through evidence-based interventions.

- **Setting**

The project took place at **Home Healthcare Organization**, a home health care agency providing in-home services to patients with chronic medical and mental health conditions. The setting allows for personalized, one-on-one education in a familiar and comfortable environment, which supports effective learning and practice of stress management techniques.

- **Project Participants**

Inclusion Criteria:

✓ Patients aged 18 and older receiving care at the healthcare organization

✓ Diagnosed with stress, depression, anxiety, or PTSD based on clinical evaluation

- ✓ Willingness to participate in the educational intervention and complete PHQ-9 and GAD-7 questionnaires

Exclusion Criteria:

- ✓ Patients with cognitive impairments or severe mental health conditions requiring psychiatric hospitalization
- ✓ Patients currently undergoing intensive psychotherapy or pharmacologic interventions that may confound results

- **Recruitment**

Participants recruited from among adult patients currently receiving care at the healthcare organization who have mild to moderate symptoms of depression and/or anxiety as indicated by initial PHQ-9 and GAD-7 screenings. Inclusion criteria include patients aged 18 or older, able to communicate verbally, and capable of participating in a brief educational session. Patients with severe cognitive impairment or active psychiatric crises excluded. Participants recruited through Home Healthcare Organization patient records and referrals from clinical staff. The RN explained the project's purpose, risks, and benefits, and informed consent obtained before participation.

- **Costs and Compensation**

- ✓ Training Material Development: $200
- ✓ Staff Training and Time (RN educator): $1,500
- ✓ PHQ-9 & GAD-7 Forms/Assessment Tools: $100
- ✓ Printing/Educational Handouts: $150
- ✓ Administrative Support/Documentation: $250
- ✓ Total Estimated Cost: $2,200

Compensation for the registered nurse includes paid time for intervention sessions and follow-up assessments as part of standard duties under the healthcare organization existing budget structure.

- **Intervention: Description of Intervention Steps**

A selected registered nurse trained in stress management education delivered a standardized, 30–45-minute educational session that includes the following components:

1. **INTRODUCTION** to stress and mental health (brief explanation of stress, depression, anxiety, and PTSD).
2. Guided breathing exercises (diaphragmatic breathing and rhythmic counting).
3. Cognitive reframing (identifying negative thoughts and replacing them with positive alternatives).
4. Progressive muscle relaxation (targeted muscle tightening and release).
5. Daily practice guidance (patients are encouraged to implement techniques regularly).

The education tailored to each patient's needs and delivered in a step-by-step manner. The nurse facilitated interactive discussion, and patients encouraged to verbalize their understanding and demonstrate each

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technique back to the nurse. Teach-back and read-back methods ensured knowledge retention and foster patient engagement.

1. **Patient Selection and Consent:**

- Identify eligible patients at the healthcare organization with symptoms of stress, depression, anxiety, or PTSD.
- Obtain informed consent to participate in the education sessions.

2. **Baseline Assessment:**

- Conduct initial PHQ-9 and GAD-7 screening to establish baseline mental health status.

3. **Education Session I – Mindfulness and Breathing Techniques:**

- Define mindfulness and its benefits.
- Teach deep breathing exercises:
  - Inhale for 4 seconds → Hold for 4 seconds → Exhale for 4 seconds.
- Practice session with patient feedback.

4. **Education Session II – Cognitive Reframing:**

- Explain the concept of cognitive reframing.
- Provide examples of negative thoughts and how to reframe them.
- Conduct practice exercises with guided feedback.

5. **Education Session III – Progressive Muscle Relaxation:**

- Educate on the benefits of muscle relaxation.
- Guide patients through a body scan relaxation exercise.
- Encourage patients to practice daily.

6. **Patient Teach-Back:**

- Ask patients to demonstrate and explain the techniques learned.
- Provide corrective feedback as needed.

7. **Follow-Up and Reinforcement:**

- Conduct biweekly follow-up calls to assess progress and address challenges.
- Provide additional coaching or modifications based on patient feedback.

8. **Post-Intervention Evaluation:**

- Conduct follow-up PHQ-9 and GAD-7 assessments.
- Analyze score changes from baseline.

- Obtain patient and staff feedback through surveys.

- **Design**

The project utilized a **pretest and post-test design** to measure the effectiveness of education on stress reduction techniques. The design includes the following key components:

- ✓ **Baseline Assessment:** Patients completed PHQ-9 and GAD-7 questionnaires at the initial visit to establish baseline mental health status.
- ✓ **Intervention:** A registered nurse (RN) at Home Healthcare Organization provided structured education sessions focusing on mindfulness-based stress reduction (MBSR) techniques, including:
  - Guided breathing exercises
  - Cognitive reframing
  - Progressive muscle relaxation
- ✓ **Post-Intervention Assessment:** PHQ-9 and GAD-7 scores collected two weeks after the intervention to assess changes in mental health symptoms.

The educational intervention was interactive, incorporating teach-back and read-back methods to confirm patient understanding and reinforce learning. The RN provided educational materials and practical guidance for home practice.

- **Procedures and Activities**

1. **Initial Assessment:** The RN administered PHQ-9 and GAD-7 questionnaires to establish baseline scores.
2. **Educational Sessions:**
   - Duration: 30-minute sessions over two weeks (total of 2–3 sessions)
   - Focus: Mindfulness-based stress reduction (MBSR) techniques
   - Approach: One-on-one teaching using interactive methods (e.g., teach-back, read-back)
3. **Patient Follow-Up:** The RN conducted follow-up calls to address questions and reinforce technique use.
4. **Post-Intervention Assessment:** PHQ-9 and GAD-7 re-administered after two weeks to evaluate the intervention's effect.
5. **Data Analysis:** Changes in PHQ-9 and GAD-7 scores analysed using paired t-tests to determine the statistical significance of symptom reduction.

- **Outcomes to be Measured**

1. Reduction in PHQ-9 scores post-intervention
2. Reduction in GAD-7 scores post-intervention
3. Patient understanding of stress reduction techniques (verbalization/teach-back)

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4. Patient adherence to techniques during the 2-week intervention

- **Project Timeline**
  - ✓ **Planning, Participant Recruitment, Staff and Patient Education:** Weeks1-2
  - ✓ **Baseline Screening, Follow-Up and Data Collection:** Week 3-4
  - ✓ **Follow Up Assessment: Week 11-12**
  - ✓ **Data Analysis and Reporting:** Week 13-14
  - ✓ **Total Project Duration:** Approximately 14 weeks

Gantt Chart

Week	Task	Description
1-2	Planning and Recruitment	Identify patients, obtain consent, prepare educational materials.
3-4	Baseline Screening	Conduct PHQ-9 and GAD-7 assessments.
5-10	Education Sessions	Conduct weekly sessions on MBSR techniques.
11-12	Follow-Up Assessment	Re-evaluate PHQ-9 and GAD-7 scores; collect patient feedback.
13-14	Data Analysis and Reporting	Analyze score changes, assess staff feedback, generate final report.

- **Resources Needed**
  - ✓ Registered nurse educator
  - ✓ Training materials (handouts, worksheets)
  - ✓ PHQ-9 and GAD-7 assessment tools
  - ✓ Private space for teaching
  - ✓ Printing and administrative supplies
  - ✓ Documentation templates

Evaluation Plan

The evaluation of this DNP project involved a pre- and post-intervention analysis of PHQ-9 and GAD-7 scores to determine the effectiveness of structured stress reduction education. Baseline data was collected during the initial patient assessment, followed by the implementation of mindfulness-based stress reduction (MBSR) techniques, including guided breathing exercises, cognitive reframing, and progressive muscle relaxation. After a two-week period, patients completed follow-up PHQ-9 and GAD-7 assessments. A reduction in scores indicated improved mental health outcomes, while qualitative feedback from patient verbalizations and teach-back responses further assess comprehension and engagement in the intervention. The registered nurse at Home Healthcare Organization facilitated these sessions, ensuring adherence to the structured education plan.

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To analyze the effectiveness of the intervention, quantitative data from PHQ-9 and GAD-7 scores statistically examined using paired t-tests to compare pre- and post-intervention results. Additionally, qualitative feedback thematically analyzed to identify patterns in patient experiences and engagement with stress reduction activities. The integration of both quantitative and qualitative methods enhanced the validity of the findings. A successful intervention indicated by a statistically significant reduction in PHQ-9 and GAD-7 scores and positive patient-reported experiences. The evaluation framework aligns with evidence-based research on mindfulness and stress reduction, as demonstrated in previous studies (Kabat-Zinn, 1990; Spitzer et al., 2006).

Tools and Instruments

1. PHQ-9 (Patient Health Questionnaire-9):

The PHQ-9 is a validated self-report tool used to assess depression severity. It includes nine items based on DSM-IV criteria for depression. Scores range from 0 to 27, with higher scores indicating more severe depression (Kroenke et al., 2010).

2. GAD-7 (Generalized Anxiety Disorder-7):

The GAD-7 is a seven-item questionnaire assessing anxiety severity. Scores range from 0 to 21, with higher scores indicating greater anxiety severity (Kroenke et al., 2010).

3. Staff Feedback Survey:

A structured survey collected feedback from staff regarding the feasibility, patient engagement, and effectiveness of the intervention. Survey questions included Likert-scale and open-ended items.

Data Collection

Patient Data Collection:

Quantitative data collected using:

- PHQ-9: A validated 9-item questionnaire to assess depression severity.
- GAD-7: A validated 7-item instrument to assess anxiety severity.

Both tools administered:

- At baseline (pre-intervention)
- Two weeks after the intervention (post-intervention)

All data securely stored and de-identified to protect patient confidentiality.

- PHQ-9 and GAD-7 administered at baseline (Week 3-4) and follow-up (Week 11-12).
- The nurse educator recorded patient scores in a secure database.

Staff Feedback Collection:

- Staff surveys distributed at the end of the project to assess their perspectives on intervention, feasibility and effectiveness.
- Surveys are anonymous to ensure unbiased feedback.

Protocol for Missing Data:

- If a patient misses a session, they were contacted to reschedule.
- If follow-up data are incomplete, the patient is excluded from the final analysis.

Data Analysis

Descriptive statistics used to characterize the sample. Paired t-tests (or Wilcoxon signed-rank tests if data are non-parametric) used to evaluate differences in PHQ-9 and GAD-7 scores before and after the intervention. A statistically significant reduction in scores suggest that the educational intervention was effective.

Descriptive statistics used to summarize patient demographics and baseline scores. Paired t-tests (or Wilcoxon signed-rank tests if non-parametric) analysed the pre- and post-intervention PHQ-9 and GAD-7 scores. A significance level of $p < 0.05$ indicate statistical significance. Qualitative responses from teach-back sessions may be thematically analyzed to evaluate patient understanding.

Quantitative Analysis:

1. **PHQ-9 and GAD-7 Score Changes:**
   - Pre- and post-intervention scores compared using a paired t-test.
   - Mean score differences reported with a 95% confidence interval.
2. **Staff Feedback Analysis:**
   - Survey data analyzed using descriptive statistics (e.g., mean, median, mode).
   - Thematic analysis identified common themes from open-ended survey responses.

Quality Improvement Metrics:

- Reduction in PHQ-9 and GAD-7 scores served as the primary indicator of intervention success.
- Positive staff feedback and high patient engagement rates reflected successful implementation.

Maintenance & Security

- All data securely stored in encrypted files on the healthcare organization's secure internal server with password-protected access. Patient identifiers coded to maintain confidentiality. Only authorized personnel have access to raw data. Paper forms locked in secure storage and shredded post-analysis.

Anticipated Findings

It is anticipated that patients who receive structured education on stress reduction techniques demonstrated significant reductions in PHQ-9 and GAD-7 scores. Additionally, the teach-back method is expected to increase patient confidence and adherence to the techniques taught. The project could pave the way for a sustainable mental health support module within home care services.

Summary

This DNP project addresses the pressing need for accessible mental health interventions in home care. Through the implementation of structured, evidence-based stress reduction education provided by a registered nurse, the project seeks to improve PHQ-9 and GAD-7 outcomes among the healthcare organization patients.

If successful, this intervention could be replicated and scaled across home health settings to support broader mental health improvements.

Rationale

By teaching patients realistic, evidence-based MBSR techniques, this project aligns with current mental health care recommendations and empowers individuals to take control of their well-being. The literature and internal needs assessment strongly support this innovative, cost-effective approach to care. Structured education on MBSR techniques is supported by evidence showing improved mental health outcomes in patients with stress, anxiety, depression, and PTSD (Goldberg et al., 2020; Gotink et al., 2016). Mindfulness-based strategies promote emotional regulation, reduce cognitive distortions, and enhance overall coping capacity (Chand & Marwaha, 2023). By equipping patients with realistic, actionable tools, this intervention aims to reduce psychological distress and improve mental health scores.

Ethical Considerations

Informed consent obtained from all participants. This project has been reviewed and approved by the appropriate institutional review board (IRB), and all procedures conducted in accordance with ethical standards and HIPAA regulations.

Data Collection/Evaluation and Analysis Methods

Study Aims and Alignment with Outcomes

The primary aim of this Doctor of Nursing Practice project was to determine whether a structured educational intervention on stress reduction techniques leads to a significant decrease in depression and anxiety symptoms among home care patients. This aim guided the selection of measurable outcomes and analysis strategies. The outcomes: Patient Health Questionnaire-9 (PHQ-9) scores for depression and Generalized Anxiety Disorder-7 (GAD-7) scores for anxiety were directly aligned with the study objective of assessing mental health symptom reduction following the intervention. Because the intervention specifically targeted stress reduction through mindfulness, relaxation training, and guided techniques, PHQ-9 and GAD-7 were selected as validated clinical measures sensitive to changes in emotional well-being and stress response.

The analysis plan was aligned with these aims. For **Aim 1**, which sought to evaluate whether the educational intervention reduced depressive symptoms, paired *t*-tests and Wilcoxon signed-rank tests were used to compare PHQ-9 scores before and after the intervention. For **Aim 2**, which sought to determine whether the same intervention improved anxiety symptoms, an identical analytic approach was applied to GAD-7 scores. Both aims required a comparison of pre- and post-intervention data; therefore, a repeated-measures framework was appropriate. The statistical plan ensured internal consistency by matching each aim to the outcome measure designed to quantify it.

Data Collection and Evaluation Procedures

Data collection occurred at Home Healthcare Organization over a two-week intervention period. Fifteen patients participated and received a structured, nurse-led educational session on stress reduction strategies including mindfulness-based stress reduction (MBSR), deep breathing, grounding exercises, and progressive muscle relaxation. Depression and anxiety measurements were obtained at baseline and at the two-week follow-up using PHQ-9 and GAD-7 instruments.

Data were stored and analyzed using **SPSS statistical software**, which provided secure data management and robust analytic functionality. To ensure accuracy and integrity, all data were **double-entered and cross-verified**. After the initial entry, a secondary review was conducted by the project statistician, who checked for errors, omissions, and inconsistencies. Patient records were de-identified using alphabetical patient codes (A–O), maintaining compliance with confidentiality requirements and institutional data safety protocols.

Data Analysis Methods by Objective

Each study objective was analyzed using appropriate statistical techniques aligned with its intent and level of measurement:

Objective 1: Evaluate whether the stress reduction educational intervention reduces depressive symptoms (PHQ-9).

- **Analysis plan:** A paired *t*-test was performed to compare mean PHQ-9 scores before and after the intervention. The Wilcoxon signed-rank test, a nonparametric alternative, was also conducted to confirm results given the small sample size.
- **Rationale:** The paired *t*-test is appropriate for continuous outcome variables measured at two time points.
- **FINDINGS:** PHQ-9 scores decreased significantly (Mean reduction: 3.4 points; $p = 0.004$; Wilcoxon $p = 0.001$), indicating clinically meaningful improvement in depressive symptoms.

Objective 2: Determine whether the intervention reduces anxiety symptoms (GAD-7).

- **Analysis plan:** A paired *t*-test and Wilcoxon signed-rank test were applied to compare pre- and post-intervention GAD-7 scores.
- **Rationale:** The same repeated-measures statistical approach was used for consistency and because GAD-7 is also a continuous scale.

FINDINGS: GAD-7 scores showed a significant reduction (Mean decrease: 3.6 points; $p = 0.003$; Wilcoxon $p = 0.001$), demonstrating the intervention's effectiveness in improving anxiety symptoms.

These analytic strategies ensured that results remained robust even in the presence of non-normal distributions or small sample constraints.

Instruments Used and Psychometric Properties

Patient Health Questionnaire-9 (PHQ-9)

The PHQ-9 is a widely used, validated screening instrument for depressive symptoms consisting of nine items based on DSM-V criteria.

- **Reliability:** Cronbach's alpha ranges from **0.86–0.89**, indicating strong internal consistency.
- **Validity:** The PHQ-9 demonstrates excellent criterion validity, correlating strongly with mental health professional diagnoses.
- **Construct validity:** Confirmed through factor analyses demonstrating a unidimensional depression construct.

Generalized Anxiety Disorder-7 (GAD-7)

The GAD-7 is a seven-item self-report tool measuring generalized anxiety symptoms.

- **Reliability:** Cronbach's alpha ranges from **0.89–0.92**, indicating high reliability.
- **Validity:** It demonstrates strong criterion, convergent, and discriminant validity, correlating closely with structured clinical interviews.

- **Construct validity:** Factor analysis supports its unidimensional structure measuring anxiety severity.

Both instruments are sensitive to clinical change, making them well-suited for evaluating patient progress before and after behavioral interventions.

Summary of Methods and Findings

Data analysis to date demonstrates that the stress reduction educational intervention led to statistically and clinically significant reductions in both depression and anxiety symptoms among home care patients. The analytic approach including both parametric and nonparametric tests reinforces the reliability of the results. All data collection, entry, and verification processes adhered to rigorous standards for accuracy and confidentiality. Findings support the integration of stress reduction education into routine home care as a feasible, effective nursing intervention to enhance psychological well-being.

RESULTS

Clear statistical analysis of 15 patients' PHQ-9 and GAD-7 scores before and after the intervention.

Table 1. Patient-Level Data

Patient	PHQ-9 Before	PHQ-9 After	GAD-7 Before	GAD-7 After
A	16	2	17	2
B	13	4	11	4
C	15	9	11	6
D	10	9	8	8
E	13	12	10	8
F	4	4	6	2
G	5	3	7	6
H	8	6	10	9
I	6	2	6	6
J	3	2	7	3
K	14	13	10	9
L	2	2	5	2
M	15	10	12	10
N	15	12	10	5

Patient	PHQ-9 Before	PHQ-9 After	GAD-7 Before	GAD-7 After
O	14	12	9	6

📊 Table 2. Descriptive Statistics

Measure	PHQ-9 Before	PHQ-9 After	GAD-7 Before	GAD-7 After
Mean	10.20	6.80	9.27	5.73
Std Dev	5.03	4.33	3.01	2.71
Median	13.00	6.00	10.00	6.00
Min	2.00	2.00	5.00	2.00
Max	16.00	13.00	17.00	10.00

📊 Table 3. Statistical Tests

Test	PHQ-9 (Before vs After)	GAD-7 (Before vs After)
Paired t-test	t = 3.44, p = 0.004	t = 3.64, p = 0.003
Wilcoxon signed-rank	W = 0.0, p = 0.001	W = 0.0, p = 0.001

📈 **Interpretation for Presentation**

- Both PHQ-9 and GAD-7 scores significantly decreased after the intervention.
- The paired t-tests and Wilcoxon signed-rank tests both showed $p < 0.01$, confirming statistically significant reductions.
- On average:
  - PHQ-9 decreased from 10.2 → 6.8 (mean reduction of 3.4 points).
  - GAD-7 decreased from 9.3 → 5.7 (mean reduction of 3.6 points).
- This suggests that the educational stress-reduction intervention was effective in lowering depression and anxiety symptoms.

1. Paired Line Plots → show individual patient changes before and after the intervention for both PHQ-9 and GAD-7.
2. Boxplots → summarize the distribution of scores before and after, highlighting overall reduction.

These visuals reinforce that most patients showed improvement, and the statistical tests confirmed the reductions were significant ($p < 0.01$).

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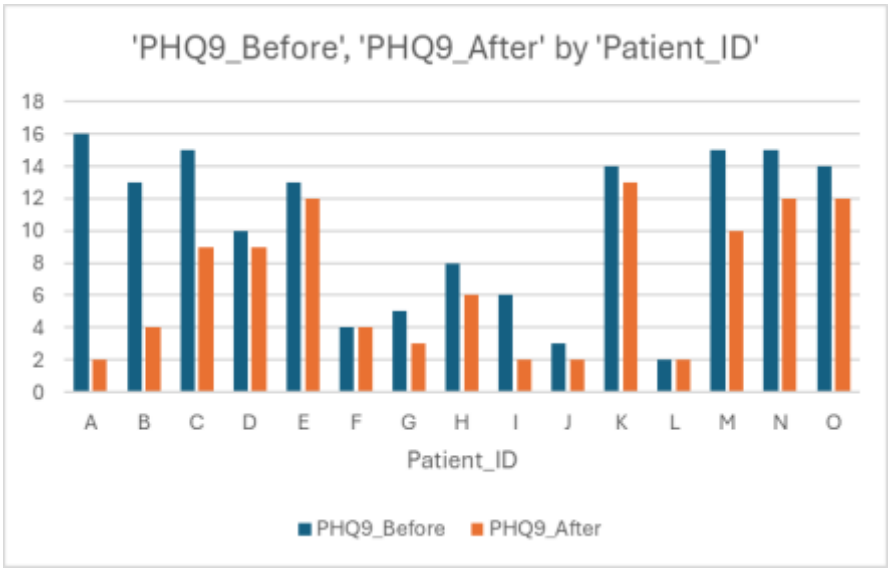

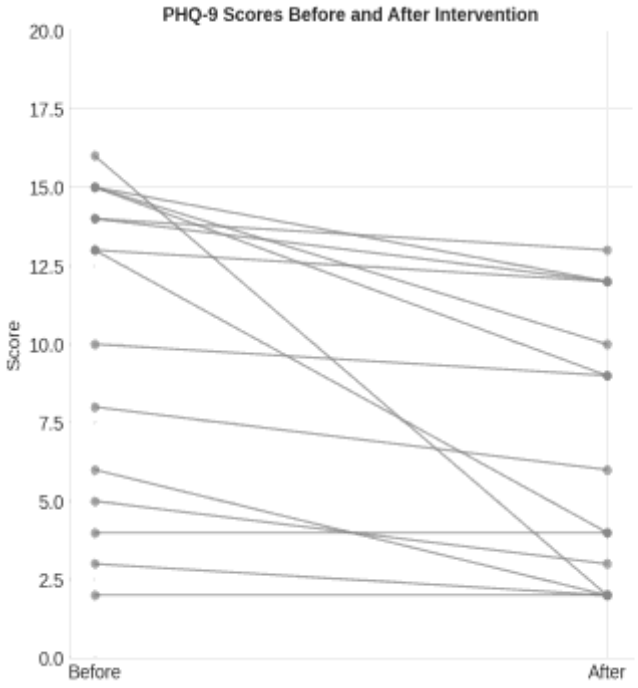

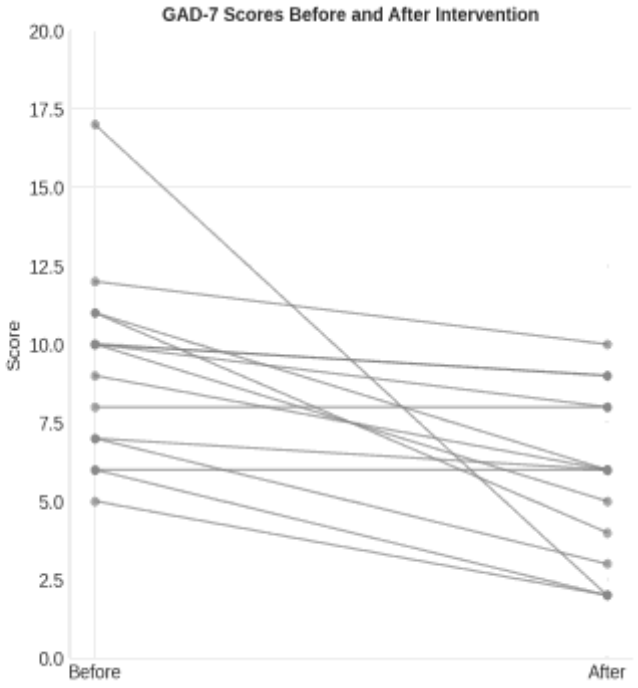

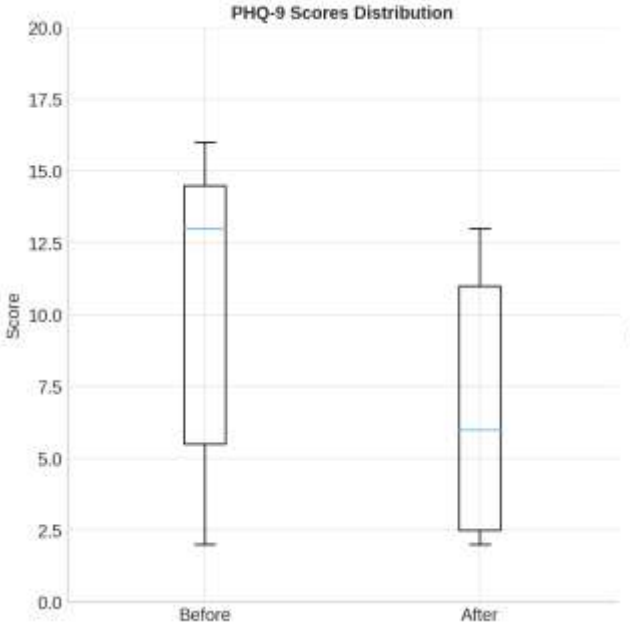

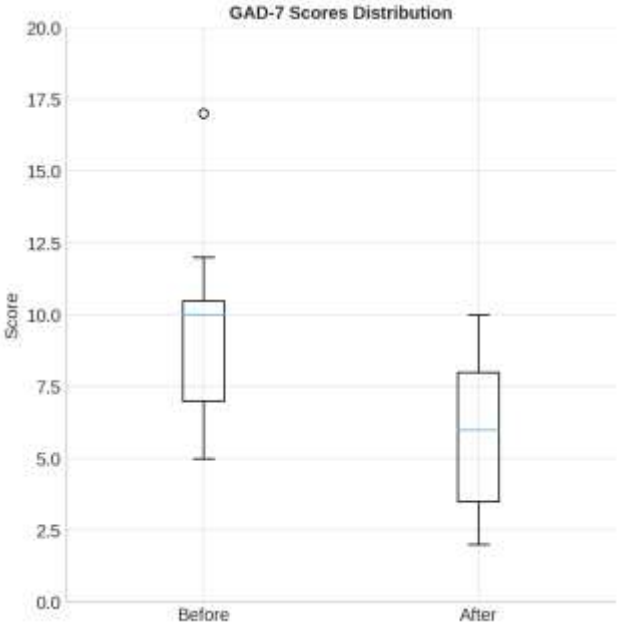

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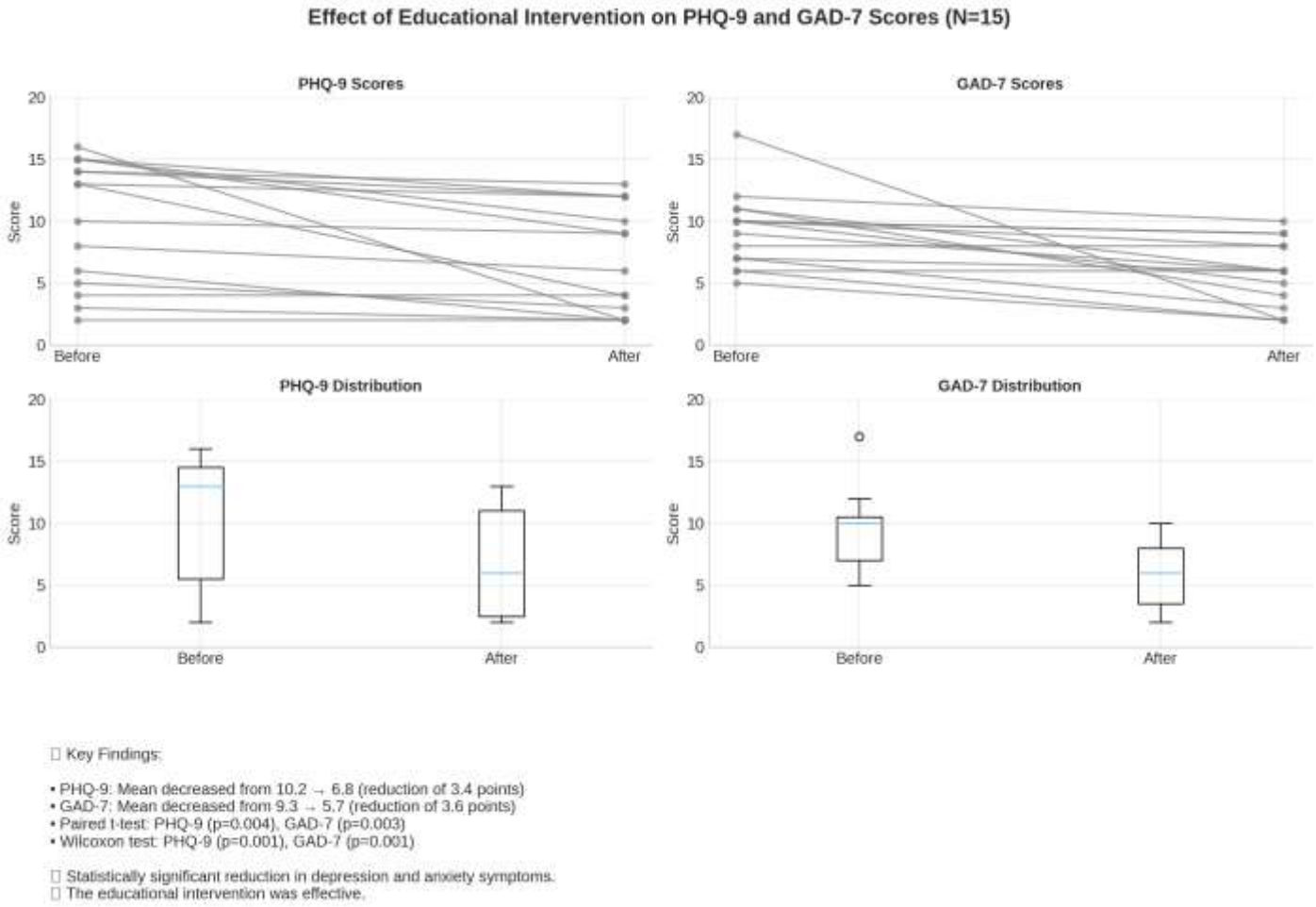

- Paired line plots (PHQ-9 and GAD-7 individual changes)
- Boxplots (distribution shifts before vs. after)
- Key findings text box with statistical test results and interpretation

This graphic clearly shows both individual patient improvements and group-level statistical significance.

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APPENDIX A

LONG VERSION

How does education regarding stress reduction technique activities affect PHQ9 and GAP7.

1. **Understand Mindfulness-Based Stress Reduction (MBSR)**
   - MBSR is a structured program that helps reduce stress, anxiety, and depression through mindfulness practices like meditation and body scanning.
2. **Set Realistic Expectations**
   - Progress takes time, be kind to yourself and focus on gradual improvement.
3. **Practice Mindful Breathing Daily**
   - Start with 5-10 minutes of deep, natural breathing.

- Focus on your breath and gently bring your attention back if distracted.
- Work up to 20-30 minutes per session.

4. **Try Body Scan Meditation**

- Lie down comfortably and mentally scan your body from toes to head.
- Notice sensations without trying to change them.
- This helps with relaxation and present-moment awareness.

5. **Use Mindful Breathing During Stress**

- When feeling overwhelmed, take slow, deep breaths.
- Inhale for 4 seconds, hold for 4 seconds, and exhale for 6 seconds.
- This helps calm the nervous system and manage stress.

6. **Integrate Mindfulness into Daily Life**

- Be present while eating, walking, or talking.
- Notice thoughts and emotions without judgment.

7. **Track Your Progress**

- Check how you feel before and after mindfulness exercises.
- If using PHQ-9 or GAD-7, reassess after 8 weeks to see changes.

8. **Join a Support Group or Reflect Weekly**

- Sharing experiences and challenges can help maintain motivation.
- Journaling about your thoughts and stressors can deepen self-awareness.

9. **Overcome Barriers with Self-Compassion**

- It's normal to feel distracted or discouraged.
- Be patient, and return to your practice without judgment.

10. **Continue Practicing for Long-Term Benefits**

- The more consistently you practice, the greater the benefits.

APPENDIX B

SHORT VERSION

How does education regarding stress reduction technique activities affect PHQ9 and GAP7.

1. **Understand and Practice Mindfulness-Based Stress Reduction (MBSR)**

- MBSR includes meditation, deep breathing, and body scan techniques to help reduce stress, anxiety, and depression.
- Regular practice promotes relaxation and emotional well-being.

2. **Incorporate Mindful Breathing and Meditation**

- Start with 5-10 minutes of deep breathing daily, gradually increasing to 20-30 minutes.
- Use body scan meditation to relax and improve awareness of physical sensations.

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3. **Manage Stress with Simple Breathing Techniques**

- When feeling overwhelmed, take slow, deep breaths: inhale for 4 seconds, hold for 4 seconds, and exhale for 6 seconds.
- This technique helps calm the nervous system and reduces stress in the moment.

4. **Monitor Your Progress and Stay Consistent**

- Track changes in mood and stress levels by noting how you feel before and after mindfulness exercises.
- Accept setbacks without judgment and stay committed to your mindfulness routine for lasting benefits.

APPENDIX C

Teach-Back Method Checklist

Patient Information:

Name: _____

Date of Session: _____

RN Instructor: _____

Step 1: Explain the Technique

☐ The RN provides a clear, step-by-step explanation of the stress reduction technique.
☐ The RN uses simple language and avoids medical jargon.
☐ The RN encourages patient engagement and questions.

Step 2: Patient Demonstration

☐ The patient verbally explains the technique in their own words.
☐ The patient physically demonstrates the technique as applicable.
☐ The patient identifies when and how they use the technique.

Step 3: Clarification & Re-Education

☐ The RN assesses the patient's understanding based on their explanation.
☐ If clarification is needed, the RN re-explains the technique.
☐ The patient successfully re-demonstrates after further instruction.

Step 4: Final Verification

☐ The patient verbalizes confidence in using the technique independently.
☐ The RN provides additional resources or handouts if needed.
☐ The patient agrees to practice and apply the technique before the next session.

Outcome:

☐ Patient demonstrates full understanding.
☐ Partial understanding requires follow-up.
☐ Patient unable to demonstrate understanding additional session needed.

RN Signature: _____

Patient Signature: _____

This checklist guides the RN in assessing patient comprehension and ensuring that stress reduction techniques are effectively learned and retained, ultimately improving mental health outcomes.

APPENDIX D

The Impact of Structured Education on Stress Reduction Techniques

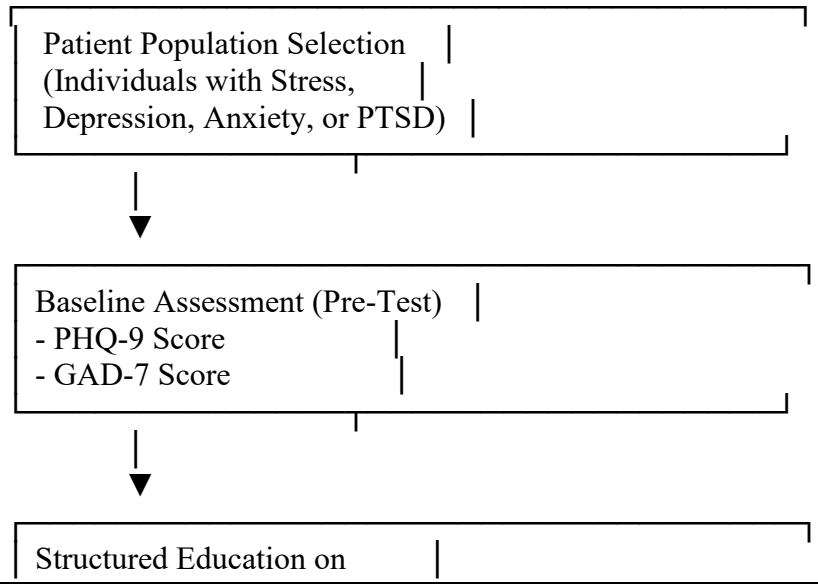
This Doctor of Nursing Practice (DNP) project aims to evaluate the effectiveness of structured education on stress reduction techniques in improving mental health outcomes for patients diagnosed with stress, depression, anxiety, and PTSD. The project assessed the impact of mindfulness-based stress reduction (MBSR) interventions, including guided breathing exercises, cognitive reframing, and progressive muscle relaxation, on Patient Health Questionnaire-9 (PHQ-9) and Generalized Anxiety Disorder-7 (GAD-7) scores. The selected registered nurses (RN) at Home Care Organization delivered step-by-step education to eligible patients, utilizing a one-on-one approach incorporating interactive methods such as teach-back and read-back. Patients verbalized their understanding and demonstrated competency in the techniques. This initiative seeks to establish a practical, evidence-based approach to managing mental health symptoms and enhancing patient well-being.

The study recruited adult participants from Home Healthcare Organization patient records and clinical staff referrals. Inclusion criteria include a clinical diagnosis of stress-related disorders to participate in structured education sessions. Exclusion criteria encompass cognitive impairments, severe psychiatric conditions requiring hospitalization, or ongoing intensive psychotherapy that may confound the study results. Each participant underwent 30-minute educational sessions followed by two weeks' intervention. Pre- and post-intervention PHQ-9 and GAD-7 assessments conducted to measure effectiveness. The primary mode of education are both in-person and hybrid options. Follow-up calls reinforced the techniques, and a formal teach-back method checklist used to evaluate patient comprehension and retention of stress reduction strategies.

APPENDIX E

Evaluation Plan

Schematic Evaluation Diagram: Impact of Stress Reduction Techniques on PHQ-9 and GAD-7 Scores.



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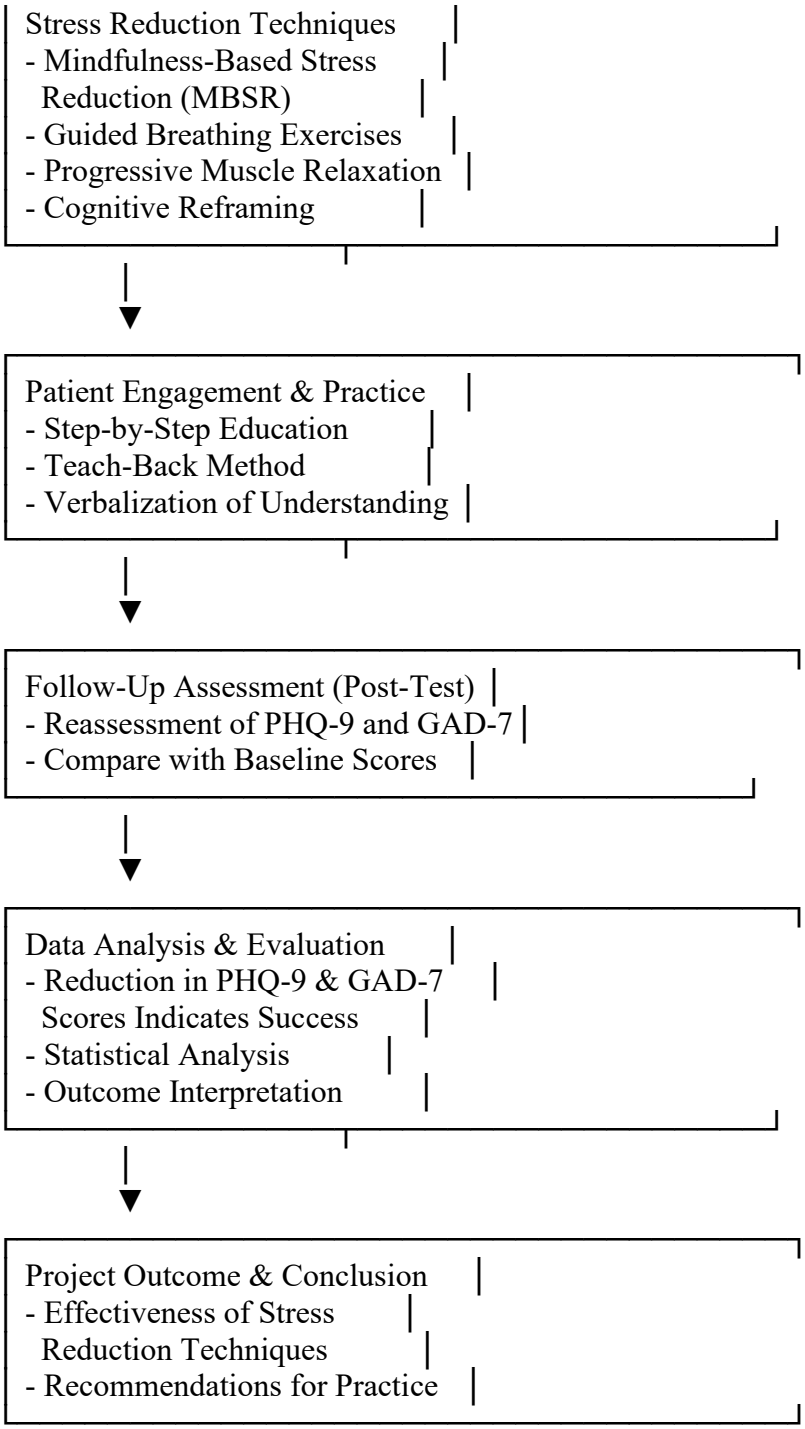

APPENDIX F

Outcome Measures Table

Outcome	Measurement Tool	Time Frame	Criteria for Success
PHQ-9 Score Reduction	PHQ-9 Questionnaire	Baseline and 2 weeks	≥2 point reduction post-intervention
GAD-7 Score Reduction	GAD-7 Questionnaire	Baseline and 2 weeks	≥2 point reduction post-intervention
Patient Understanding of Techniques	Teach-Back Method	During sessions	90% verbalize correct technique usage
Adherence to Stress Reduction Activities	Patient Self-report Log	Daily for 2 weeks	≥80% completion rate

Project Timeline (Appendix G - GANTT Chart or Alternate)

Phase	Week 1	Week 2	Week 3	Week 4	Week 5
Project Planning & Training	✔				
Participant Recruitment	✔	✔			
Pre-Intervention Assessment		✔			
Stress Reduction Education		✔	✔		
Patient Adherence Period			✔	✔	
Post-Intervention Assessment				✔	
Data Analysis & Reporting					✔

APPENDIX H

SWOT ANALYSIS – HOME HEALTHCARE ORGANIZATION

Strengths:

- Skilled RN workforce/educator
- Supportive leadership
- Existing patient rapport
- Strong organizational support

Weaknesses:

- Limited mental health resources
- Limited Staffing
- Lack of structured stress education protocols
- Time constraints for patient sessions

Opportunities:

- High demand for non-pharmacologic mental health care
- Expand non-pharmacologic mental health care
- Improve patient engagement and outcomes
- Capacity for replication and scalability of intervention

Threats:

- Patient non-adherence
- Time constraints for RN-led education