

Effects of an Individual and Family Self-management Program for Gastrointestinal Symptom Cluster in Women with Breast Cancer Receiving Chemotherapy: A Quasi-Experimental Study

Kedsarin Pinrarot, Bualuang Sumdaengrit,* Apinya Siripitayakunkit

Abstract: Gastrointestinal symptom clusters are the most prevalent and persistent adverse effects experienced by women with breast cancer undergoing chemotherapy. Effective clinical management must target this entire symptom cluster comprehensively rather than treating isolated symptoms. While family involvement is vital for fostering sustainable symptom management, empirical research engaging families in this care context remains sparse in Thailand. This quasi-experimental study evaluated the effects of an individual and family self-management program on gastrointestinal symptom clusters, symptom management behaviors, and perceived family support among Thai women with breast cancer who received chemotherapy in a university hospital and lived with family members. Fifty-seven dyads in the purposive sample were sequentially assigned to the study groups. First, 28 dyads were selected for the control group to complete the baseline standard care protocol. Subsequently, 29 dyads were recruited into the experimental group to undergo the six-week individual and family self-management program. Data were collected at baseline, the four-week follow-up, and at one-week post-intervention using the Gastrointestinal Symptom Cluster Assessment Scale, the Symptom Management Behaviors Questionnaire, and the Family APGAR Questionnaire. Analysis was conducted using descriptive statistics and a linear mixed-effects model.

Results from the linear mixed-effects model indicated that the intervention group experienced a significantly lower severity of the gastrointestinal symptom cluster and significantly improved symptom management behaviors compared with the control group. However, the two groups did not differ significantly in perceived family support. In conclusion, the individual and family self-management program effectively reduces the severity of gastrointestinal symptom clusters and enhances adaptive symptom-management behaviors. This framework can be integrated into clinical oncology nursing to empower patients and families. However, future randomized controlled trials with longitudinal follow-ups are warranted to evaluate long-term behavioral sustainability.

Keywords: Breast cancer, Chemotherapy, Family support, Gastrointestinal symptom cluster, Oncology nursing, Self-management, Symptom management behavior

Received 11 May 2026; Revised 15 June 2026;
Accepted 15 June 2026

Introduction

Worldwide, breast cancer continues to be one of the major causes of mortality among the female population. In 2023, there were an estimated 2.3 million new diagnoses globally, and this number is projected to exceed 3.5 million in 2050.¹ Currently, chemotherapy treatment for breast cancer effectively reduces rates

Kedsarin Pinrarot, Master's student, Master of Nursing Science Program (Adult and Gerontological Nursing), Ramathibodi School of Nursing, Faculty of Medicine Ramathibodi Hospital, Mahidol University, Thailand. E-mail: kedsarin.pin@student.mahidol.ac.th, ORCID iD: 0009-0001-5178-1527

Correspondence to: Bualuang Sumdaengrit, * PhD, Associate Professor, Ramathibodi School of Nursing, Faculty of Medicine Ramathibodi Hospital, Mahidol University, Thailand. E-mail: bualuang.sum@mahidol.ac.th, ORCID iD: 0000-0002-3264-2644

Apinya Siripitayakunkit, PhD, Assistant Professor, Ramathibodi School of Nursing, Faculty of Medicine Ramathibodi Hospital, Mahidol University, Thailand. E-mail: apinya.sii@mahidol.ac.th, ORCID iD: 0000-0001-9001-8041

of recurrence and mortality.² Anthracycline-based drugs, which consist of Adriamycin® or doxorubicin and cyclophosphamide (known as the AC regimen), serve as a standard first-line therapy.² However, administering multiple cytotoxic agents often intensifies treatment-related side effects. Therefore, women with breast cancer frequently experience concurrent symptoms known as a “symptom cluster.”³⁻⁵ Among these, the gastrointestinal (GI) symptom cluster is the most prevalent and persistent.⁵

The GI symptom clusters have significant effects on the physical, psychological, and social well-being of women having chemotherapy for breast cancer.^{6,7} Physiologically, chemotherapy stimulates the emetic center and disrupts the autonomic nervous system, leading to nausea, vomiting, and subsequently anorexia or intestinal dysfunction that induces constipation or bloating⁸ and may lead to weight loss as they are unable to maintain a normal nutritional status.⁵ Women with breast cancer receiving the AC regimen typically manifest these GI symptoms within 5–7 days post-treatment.⁹ Increased severity of symptoms during chemotherapy often diminishes the effectiveness of self-management behaviors and psychosocial coping in such patients.¹⁰ Moreover, the symptoms that occur affect daily life and lead to role failure within their family.⁶

Previous studies have revealed that women undergoing their initial course of chemotherapy face multifaceted challenges. These include inadequate preparation, profound psychological distress, fear of treatment, and significant financial burdens; conversely, assets such as hope, faith, and inner courage are vital to sustaining treatment adherence.¹¹ Furthermore, independent self-management is frequently initiated by themselves to cope with side effects, alongside an expressed desire for nursing assistance to foster hope and enhance acceptance, psychological adjustment, and treatment adherence.^{6,11,12}

Women with breast cancer require comprehensive information to cultivate self-management and adaptive self-regulation skills, which serve as foundational components of successful behavioral modification.^{6,12} Beyond individual autonomy, they require emotional,

instrumental, and informational support from both nursing staff and family members, particularly through collaborative encouragement to address symptom clusters as they manifest.^{6,12} Consequently, enhancing clinical knowledge and self-management capabilities among such women requires actively integrating family members to support collaborative planning and the real-time management of concurrent symptom clusters.^{4,12}

Despite these recognized needs, the literature has predominantly focused on self-management and on partnerships between the individual and the healthcare team, leaving empirical research on family-based support systems limited.¹³⁻²⁰ Furthermore, contemporary intervention models frequently isolate individual symptoms rather than addressing symptom clusters holistically.¹³⁻²⁰ To address these critical gaps, this study evaluated the effectiveness of the Individual and Family Self-Management Program (hereafter the IFSMP or “the Program”) for GI symptom clusters among women with breast cancer receiving an AC chemotherapy regimen for the first time, to optimize self-management behaviors and mitigate the severity of GI symptom clusters.

Literature Review and Conceptual Framework

The Individual and Family Self-Management Theory (IFSMT) of Ryan and Sawin,²¹ and related literature on managing GI symptom cluster were used as a conceptual framework for this study. This theory views the family as a cohesive unit, not limited to biological families. It considers that a change affecting one person naturally impacts all other members and the system as a whole.²¹ There are three dimensions, including context, process, and outcome dimensions, with the process dimension that leads to engaging in the recommended health behaviors containing 1) individual knowledge and beliefs, 2) self-regulation skills and ability, like goal setting, decision-making, and self-evaluation, and 3) social facilitation, which encompasses social support, and collaborative partnerships between patients, families, and healthcare providers.²¹ Self-management is a complex, dynamic phenomenon whose contextual dimensions influence individual and family behaviors during the self-

management process and directly impact outcomes.²¹ When individuals have the knowledge to manage their own health, they are more likely to develop self-regulation skills to change their behaviors, and social facilitation further encourages them to adopt preventive health practices.²¹

Self-management programs enhance health outcomes for individuals with chronic illness,²¹ and are a crucial strategy for improving self-management behaviors in women with breast cancer.²² Providing knowledge about self-management, daily self-care, and training for self-monitoring significantly reduces the occurrence of symptoms,^{16-18,20,23} improves physical activity level, and leads to better clinical outcomes.²² Moreover, many nursing care coordination programs emphasize educational initiatives to improve self-management behaviors during chemotherapy. This approach integrates the coordination of nursing interventions, a critical domain of standard nursing services, to address patient needs and ensure the effective implementation of care.²²

Additionally, previous studies have also demonstrated the effectiveness of mobile phone applications (apps) for monitoring women with breast cancer in managing symptoms during chemotherapy to improve self-management behaviors.²⁴ Such apps can encourage patients to manage symptoms and serve as a channel for them to seek help from the healthcare team for self-management after chemotherapy.^{13-17,20,23,25}

The IFSMT,²¹ suggests that self-management is successful when health professionals intervene at the individual, partner, or family level, utilizing family support and clinical collaboration to sustain long-term health behavior.^{12,21} Family support is a significant factor in helping patients manage treatment-related side effects,^{12,26} and in promoting resilience in managing chemotherapy-related side effects.²⁷ Additionally, previous studies have introduced interventions that included skill training for family members to assist in managing the symptoms of patients with cancer. These interventions have shown positive outcomes, including better preparation among family members to meet patients' care needs and improved quality of life for both patients and their families.²⁸ In Thailand, family members generally are the majority of caregivers for patients with cancer because they display sympathy, understanding, and willingness to take care of the patients.²⁹ Moreover, many studies suggest that family support plays a crucial role in empowering patients undergoing

chemotherapy to manage symptoms that occur and to engage in appropriate symptom management behaviors.^{12,26,27} Therefore, the research team was interested in applying Ryan and Sawin's self-management theory²¹ and other related literature to our IFSMP to manage GI symptom clusters.

Study Aim and Hypothesis

This study aimed to investigate the effect of the Individual and Family Self-Management Program for the GI symptom cluster in Thai women with breast cancer receiving chemotherapy on the severity of the symptom cluster, self-management behaviors, and perceived family support. It was hypothesized that participants in the intervention group, who received the IFSMP plus usual care, would exhibit: 1) significantly lower severity of the GI symptom cluster from Day 1 to Day 7 after receiving first and second of chemotherapy cycle (week 1 and week 4, respectively) than on Day 0, and that in the control group, 2) significantly higher mean scores for self-management behaviors at follow-up (week 4) or and at one-week post-intervention (week 7), and higher than that in the control group, and 3) perceived family support score at follow-up (week 4) and at one-week post-intervention (week 7) was significantly higher than at baseline (week 1) and that in the control group.

Methods

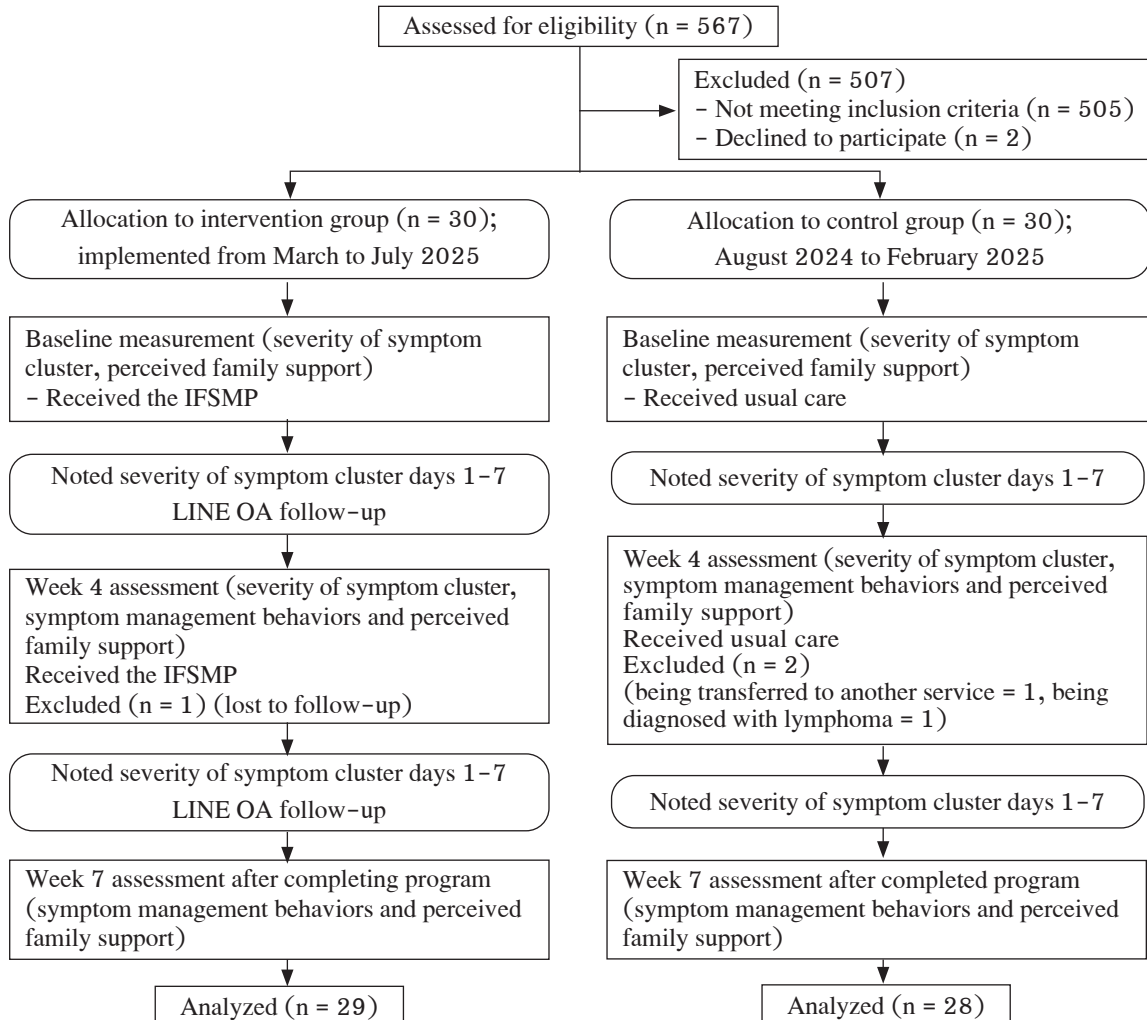
Design: This study used a quasi-experimental, two-group pretest-posttest design. This report follows the Transparent Reporting of Evaluations with Non-randomized Designs (TREND) checklist.

Sampling and Setting: The study setting was the outpatient surgery unit and the outpatient cancer center of a major hospital in Bangkok, Thailand. Participants were recruited via purposive sampling, and the inclusion criteria were: women with breast cancer who received chemotherapy for the first cycle of the AC regimen; aged 18 years or older; scoring > 3 on the Eastern Cooperative Oncology Group Performance Status (ECOG-PS)³⁰ as evaluated by a physician on every hospital visit; able to read and write in Thai; and could use the LINE application. Exclusion criteria included having gastrointestinal disease (such as gastritis or

intestinal disease), concurrent with other treatments such as radiation or hormone therapy, having acute heart failure or myocardial infarction from chemotherapy, and those who lost contact at least two times or more than 20% of the intervention. Inclusion criteria for family members were being at least 18 years old, able to read and write in Thai, and able to use LINE.

The sample size was determined by reviewing studies using the same variables.¹⁸ After that, it was calculated using the G*Power program version 3.1.9.6.³¹ with F test ANOVA, a power of 0.80, and a significance level of 0.05. Therefore, this study required a minimum sample size of 48 dyads, with a 20% attrition rate,³²

calculated as 60 in total, with 30 in each group. The control group was studied first, followed by the experimental group. During program implementation, three dyads were excluded. In the control group, one was transferred to a premium surgical clinic, and another was diagnosed with lymphoma based on additional immunohistochemistry pathology results. In the intervention group, one dyad was excluded due to more than two instances of loss to follow-up. The attrition rate was 6.67% in the control group and 3.33% in the intervention group. Consequently, 57 dyads remained for data analysis, including 28 from the control group and 29 from the intervention group (see **Figure 1**).



Note. ISFMP = Individual and Family Self-management Program, LINE OA = LINE Official Account

Figure 1. Flowchart of participants' enrollment and allocation

Ethical Considerations: This study received ethical approval from the Institutional Review Board (IRB) of the Faculty of Medicine Ramathibodi Hospital, Mahidol University, IRB approval no. COA MURA2024/534; Ref. 2025/746; dated 05 August 2024. After that, the primary investigator (PI) registered the clinical trial with the Thai Clinical Trials Registry (project code: TCTR20250905012). The PI explained the study's aim, data collection procedures, research duration, the safety of participation, and participants' right to accept or decline participation, noting that participation or refusal would not affect nursing care or medical treatment. All participants and their families signed a consent form.

Research Instruments comprised those for data collection and the intervention. All instruments were evaluated for content validity by three experts: a specialist physician in breast and endocrine surgery, an advanced practice nurse specialist in breast cancer care, and a professor of nursing.

Data collection instruments:

A *demographic record form* was developed by the PI, containing three parts: 1) personal data of ages, marital status, religion, education level, occupation, medical care entitlements, and use of LINE; 2) disease and treatment information for participants including stage of cancer, chemotherapy protocol, and laboratory result; and 3) family data including income of family, character of family, relationships with the patients, and access of health resources.

The *Gastrointestinal Symptom Cluster Assessment Scale* (GSCAS) was developed in Thai by the PI and research team, based on a literature review of seven symptoms: nausea, vomiting, loss of appetite, constipation, bloating, diarrhea, and weight loss. It uses a numeric rating scale from 0 to 10 to rate the severity of each symptom.³³ Regarding nausea, for example, 0 indicates the symptom is not present, and 10 indicates a more severe symptom. The severity score of the GI symptom cluster is the total symptom

score divided by the total number of symptoms that occurred, on a scale of 0 to 10. A higher score indicated a higher symptom severity. The instrument yielded a content validity index (CVI) of 1.00. Reliability testing was conducted using a 7-day test-retest design, including the day of chemotherapy administration (baseline) and exactly 7 days post-treatment, with a pilot sample of 10 women with breast cancer to evaluate feasibility and preliminary reliability in a setting comparable to the main study population, yielding a Pearson's correlation coefficient of 0.80. In the main study, the test-retest reliability remained robust at 0.71.

The *Symptom Management Behavior for Gastrointestinal Symptom Cluster Questionnaires* (SMB-GSCQ) was developed in Thai by the PI and research team, based on the IFSMT²¹ and a literature review. It includes 26 items, covering GI symptom cluster management strategies, general management strategies during chemotherapy, and self-regulation skills. For example, "You followed the gastrointestinal symptom cluster management instructions when the symptoms occurred." The questionnaire uses a 4-point Likert scale: 1 = never; 2 = sometimes or some of the time; 3 = almost every day or almost always; and 4 = every day or always. A high score indicates high self-management behaviors, with scores ranging from 26 to 104. The CVI of 10 women with breast cancer was 0.98. Cronbach's alpha was 0.71 in the pilot study and 0.87 in the actual study.

The *Family APGAR Questionnaire* measures participants' satisfaction with the help and support from their family members. It was developed by Smilkstein et al.³⁴ and translated into Thai by Malathum.³⁵ It has five items comprising basic components of family functioning: adaptation, partnership, growth, affection, and resolve (1 item per function, e.g., "I am satisfied with the help that I receive from my family when something is troubling me"). It uses a 5-point Likert scale with the following options: 1 = never, 2 = hardly, 3 = some of the time,

4 = almost always, and 5 = always. A high score indicates high perceived family support. It had previously passed the construct validity testing when compared with Pless and Satterwhite's Family Function Index, with a moderate correlation ($r = 0.67$).³⁶ The Thai version of the Family APGAR showed a high alpha coefficient of reliability (0.91).³⁵ The Cronbach's alpha was 0.84 in our pilot study and 0.95 in the actual study.

The Individual and Family Self-Management Program (IFSMP or the Program)

The PI and the research team developed the Program based on the process dimension of the IFSMT,¹ to continuously support women with breast cancer undergoing chemotherapy and their families in managing the GI symptom cluster. This Program provides health education on symptom clusters, symptom management, and follow-up support at home via the LINE application to enhance symptom-management behaviors and reduce the severity of GI symptom clusters among women with breast cancer and their families. The Program consists of three main sessions delivered over 6 weeks by the PI through face-to-face meetings, with additional follow-up support through the LINE app using the LINE Official Account (LINE OA): 1) health education, including assessment of the severity of GI symptom clusters and self-management; 2) providing information and training for self-management to promote self-regulation skills throughout the GI symptom cluster. This includes goal setting, self-monitoring and reflective thinking, decision making and action, self-evaluation; and 3) encouraging continuous symptom management behavior that the PI follows up using the LINE OA on day 7 after receiving chemotherapy. This includes current symptoms and self-management at home, encouraging the family to help the patient manage the symptom cluster, and providing an opportunity to ask the PI questions. Three experts validated the Program for its clarity, accuracy, and comprehensiveness. After that, the PI revised the program according to

their recommendations and then pilot-tested it with three women with breast cancer and their family member, who had characteristics similar to those in the main study. All participants and their families understood the Program details and explanations and were able to follow the instructions correctly. The details and implementation of the Program are shown in **Appendix Table A1**.

Usual care includes patient education on self-management by a nurse and a pharmacist at the outpatient clinic, and follow-up by telephone if they have problems. All participants noted the severity of the symptom cluster on the diary record form.

Data Collection: This study was conducted from August 2024 to August 2025. Following IRB approval, the PI, under the supervision of registered nurses in the clinic, reviewed the records to identify patients who met the inclusion criteria. Subsequently, the PI met with potential participants and their family members on their scheduled appointment days.

After the participant and their family signed the informed consent form, they were assigned to the control or the intervention group. To prevent potential contamination between groups, data collection for the control group was conducted before implementing the intervention group. The intervention group received the program delivered by the PI, whereas the control group received usual care from a nurse or pharmacist at the outpatient clinic. Blinding was not feasible because the intervention had already been carried out and then the PI collected data from both groups.

All participants were assessed and followed for 6 weeks and completed the Family APGAR Questionnaire three times: baseline (week 1), follow-up (week 4), and one week post-intervention (week 7). The GSCAS was completed before chemotherapy administration (Day 0) and daily from days 1 to 7 after chemotherapy during week 1 and week 4. The intervention group recorded symptom severity using a handbook, whereas the control group recorded the information on the provided recording

form. Participants completed the SMB-GSCQ at week 4 and week 7 to assess changes in self-management practices over time.

Data Analysis: Statistical analyses were performed using Stata version 18 (StataCorp LLC), with significance defined as $p < 0.05$. To compare the groups, categorical variables were evaluated using Chi-square or Fisher's exact tests, whereas continuous variables were analyzed using independent t-tests or Mann-Whitney U tests. The linear mixed-effects model was used to analyze changes in the severity of the GI symptom cluster on days 1 to 7 after receiving chemotherapy at weeks 1 and 4, as well as self-management behaviors and perceived family support at weeks 4 and 7. All outcomes were included in the model as fixed effects and used to construct the compound symmetry matrix, whereas all

participants were included as a random effect. A linear mixed-effects model for all outcomes was presented as an interaction between group and time in the coefficient, with a 95% confidence interval.

Results

In total, 57 women with breast cancer and 57 family members completed the study, with 28 dyads in the control group and 29 dyads in the intervention group. No significant differences were found in any characteristics data, disease and treatment information, and family data between the two groups ($p > 0.05$). At baseline (week 1), for the GI symptom cluster before receiving chemotherapy in the first cycle (Day 0), and the perceived family support, there was no significant difference between the two groups ($p > 0.05$) (Table 1).

Table 1. Characteristics of participants between control and intervention groups (N = 57)

Characteristics	Control group (n = 28)	Intervention group (n = 29)	Statistics	p-value
Age, mean (SD)	53.11 (9.93)	51.62 (9.14)	0.58	0.56 ^a
Marital status, n (%)				
Had partner	17 (60.7)	19 (65.5)	0.14	0.71 ^b
No partner	11 (39.3)	10 (34.5)		
Education, n (%)				
< Bachelor's degree	13 (46.4)	13 (44.8)	0.01	1.00 ^b
≥ Bachelor's degree	15 (53.6)	16 (55.2)		
Using LINE application, n (%)				
< 3 days/week	6 (21.4)	5 (17.2)		0.74 ^c
≥ 3 days/week	22 (78.6)	24 (82.8)		
Family type, n (%)				
Nuclear family	21 (75.0)	18 (62.1)	1.10	0.30 ^b
Extended family	7 (25.0)	11 (37.9)		
Family income, n (%)				
Adequate	24 (85.7)	27 (93.1)	0.42 ^c	
Inadequate	4 (14.3)	2 (6.9)		
Family caregiver, n (%)				
Spouse	9 (32.1)	14 (48.3)	1.61	0.45 ^b
Mother/father/child	11 (39.3)	8 (27.6)		
Relative/friend	8 (28.6)	7 (24.1)		
Stage of disease, n (%)				
Stage I	4 (14.3)	7 (24.1)	2.51	0.30 ^b
Stage II	17 (60.7)	19 (65.5)		
Stage III	7 (25.0)	3 (10.4)		

Table 1. Characteristics of participants between control and intervention groups (N = 57) (Cont.)

Characteristics	Control group (n = 28)	Intervention group (n = 29)	Statistics	p-value
Chemotherapy regimen, n (%)				
AC	13 (46.4)	10 (34.5)	0.84	0.36 ^b
AC-T/AC-TH	15 (53.6)	19 (65.5)		
ECOG score, n (%)				
ECOG 0	26 (92.9)	27 (93.1)	1.00 ^c	
ECOG 1/ ECOG 2	2 (7.1)	2 (6.9)		
Severity of GI symptom cluster, median (IQR)	1.54 (2.13)	1.00 (1.70)	322.50	0.17 ^d
Perceived family support, median (IQR)	20 (2.75)	20 (3.00)	403.50	0.96 ^d

Note. AC = Doxorubicin and cyclophosphamide, T = Taxol[®]/paclitaxel, TH = Taxol[®]/paclitaxel and Herceptin[®]/trastuzumab, ECOG = Eastern Cooperative Oncology Group, IQR = interquartile range; ^aIndependent t-test, ^bChi-square test, ^cFisher's exact test, ^dMann-Whitney U test

Severity of gastrointestinal (GI) symptoms

After program implementation, the intervention group experienced significantly lower mean severity of the GI symptom cluster than the control group ($p < 0.05$). Specifically, the mean severity scores were significantly lower in the intervention group on days 2 and 4 of the first chemotherapy cycle ($p < 0.05$) and on

days 2 and 6 of the second cycle ($p < 0.05$). Summary statistics and group comparisons are provided in **Table 2**. These trends are visually summarized in **Figures 2(a) and 2(b)**, which track group-level changes in the mean severity of GI symptom clusters over time during weeks 1 and 4 of the program.

Table 2. Comparison of the difference in the severity of gastrointestinal symptom cluster (N = 57)

Week /Time	Intervention Mean (SE)	Control Mean (SE)	Coefficient	SE	z	p-value	95% CI (lower to upper)
1 Day 0	1.14 (0.28)	1.67 (0.29)	-0.53	0.40	-1.31	0.19	(-1.32 to 0.26)
Day 1	1.83 (0.28)	2.37 (0.29)	-0.54	0.41	-1.32	0.18	(-1.35 to 0.26)
Day 2	1.85 (0.28)	3.08 (0.29)	-1.23	0.41	-2.99	< 0.01	(-2.04 to -0.42)
Day 3	1.63 (0.28)	2.91 (0.29)	-1.27	0.41	-3.08	< 0.01	(-2.08 to -0.46)
Day 4	1.53 (0.28)	2.56 (0.29)	-1.03	0.41	-2.50	0.01	(-1.84 to -0.22)
Day 5	1.37 (0.28)	1.99 (0.29)	-0.61	0.41	-1.50	0.13	(-1.42 to 0.20)
Day 6	1.10 (0.28)	1.51 (0.29)	-0.41	0.41	-1.00	0.32	(-1.22 to 0.40)
Day 7	1.17 (0.28)	1.47 (0.29)	-0.30	0.41	-0.73	0.46	(-1.10 to 0.51)
4 Day 0	1.26 (0.30)	1.50 (0.31)	-0.23	0.43	-0.52	0.60	(-1.08 to 0.63)
Day 1	1.93 (0.30)	2.57 (0.32)	-0.64	0.44	-1.46	0.14	(-1.50 to 0.22)
Day 2	1.81 (0.30)	2.75 (0.32)	-0.94	0.44	-2.15	0.03	(-1.81 to -0.08)
Day 3	1.73 (0.30)	2.67 (0.32)	-0.94	0.44	-2.13	0.03	(-1.80 to -0.07)
Day 4	1.48 (0.30)	2.68 (0.32)	-1.19	0.44	-2.72	< 0.01	(-2.06 to -0.34)
Day 5	1.09 (0.30)	2.35 (0.32)	-1.26	0.44	-2.88	< 0.01	(-2.13 to -0.40)
Day 6	0.88 (0.30)	1.95 (0.32)	-1.07	0.44	-2.44	0.01	(-1.94 to -0.21)
Day 7	0.83 (0.30)	1.61 (0.32)	-0.78	0.44	-1.77	0.07	(-1.64 to 0.08)

Note. Analyses used a linear mixed effects model; SE = Standard error, CI = Confidence interval

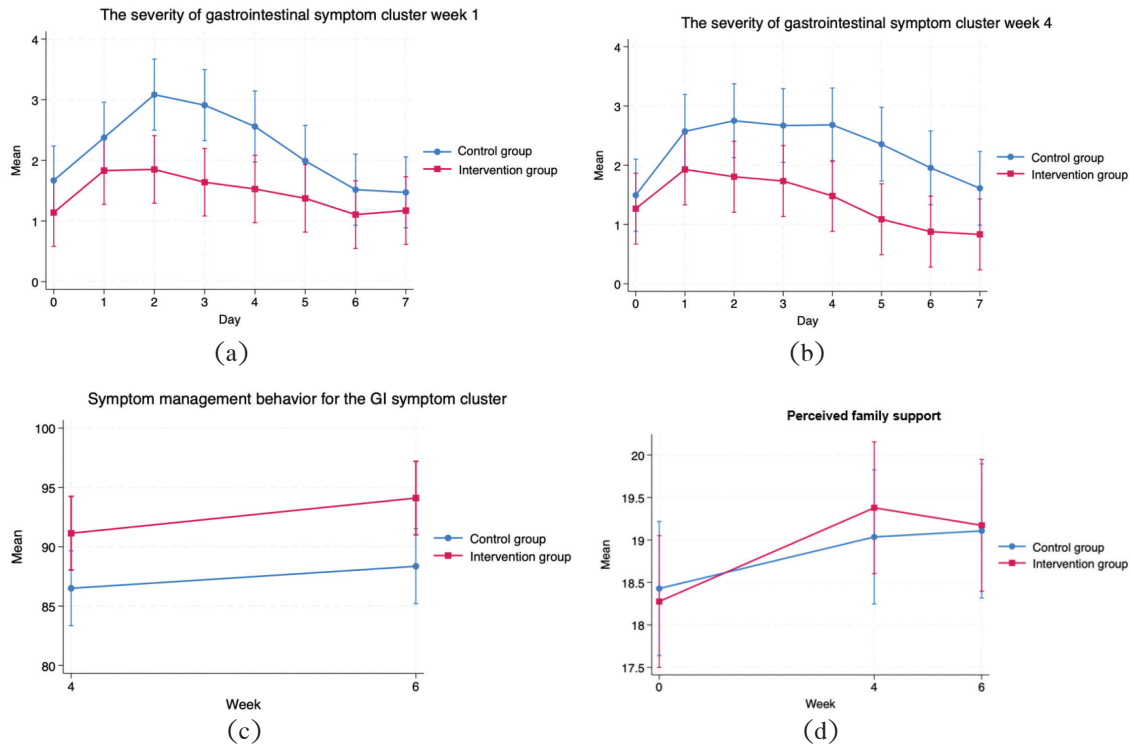


Figure 2.

- (a) Mean severity of the GI symptom cluster at week 1 in both groups
- (b) Mean severity of the GI symptom cluster at week 4 in both groups
- (c) Mean symptom management behavior for the GI symptom cluster in both groups across two time points
- (d) Mean perceived family support among women with breast cancer in both groups across three time points

Symptom management behaviors

The results showed that at weeks 4 and 7, the overall mean score for self-management behaviors in the intervention group was significantly higher than in the control group ($p < 0.05$). Furthermore, in week 4, the intervention group had significantly higher mean scores for each subscale of self-management behaviors than the control group ($p < 0.05$). This group also showed significantly higher specific self-management and self-regulation skill scores than the control group in week 7 ($p < 0.05$) (Table 3). Figure 2(c) shows a slight increase in self-management

behavior scores in both groups, although the intervention group increased more than the control group.

Perceived family support

At baseline, mean perceived family support scores did not differ significantly between groups. After entering the program, mean perceived family support scores increased from baseline in both groups, although the intervention group showed a slight decrease at week 7, while the control group showed a steady increase, as shown in Figure 2 (d). However, there was no statistically significant difference between the two groups at either time point (week 4 or week 7) ($p > 0.05$) (Table 3).

Table 3. Comparison of the difference in symptom management behaviors for the gastrointestinal symptom cluster and the perceived family support (N = 57)

Time Behavior	Intervention group Mean (SE)	Control group Mean (SE)	Coefficient	SE	z	p-value	95% CI (lower to upper)
Week 4							
Total Score	91.13 (1.58)	86.5 (1.61)	4.63	2.26	2.05	0.04	(0.21 to 9.06)
Nutritional	37.82 (0.74)	36.78 (0.75)	1.04	1.06	0.98	0.32	(-1.03 to 3.12)
Hygiene	9.96 (0.28)	9.92 (0.29)	0.03	0.41	0.09	0.93	(-0.76 to 0.84)
Exercise	6.58 (0.22)	6.17 (0.22)	0.41	0.32	1.28	0.19	(-0.21 to 1.03)
Environment	7.34 (0.17)	7.00 (0.18)	0.34	0.25	1.36	0.17	(-0.15 to 0.84)
Specific self-management	10.58 (0.30)	9.71 (0.31)	0.87	0.44	1.99	0.04	(0.01 to 1.73)
General management	7.65 (0.12)	7.64 (0.12)	0.01	0.18	0.07	0.94	(-0.34 to 0.36)
Self-regulation	11.17 (0.35)	9.25 (0.36)	1.92	0.51	3.78	< 0.01	(0.92 to 2.91)
Perceived family support	19.38 (0.40)	19.03 (0.40)	0.34	0.56	0.61	0.54	(-0.76 to 1.45)
Week 7							
Total Score	94.10 (1.58)	88.36 (1.61)	5.75	2.26	2.55	0.01	(1.32 to 10.17)
Nutritional	39.37 (0.74)	37.35 (0.75)	2.02	1.06	1.91	0.06	(-0.05 to 4.10)
Hygiene	10.51 (0.28)	10.07 (0.29)	0.44	0.41	1.09	0.27	(-0.36 to 1.25)
Exercise	6.34 (0.22)	6.17 (0.22)	0.16	0.31	0.52	0.60	(-0.46 to 0.78)
Environment	7.65 (0.17)	7.28 (0.18)	0.37	0.25	1.45	0.14	(-0.13 to 0.86)
Specific self-management	11.03 (0.30)	10.10 (0.31)	0.92	0.44	2.11	0.03	(0.06 to 1.78)
General management	7.58 (0.12)	7.42 (0.12)	0.16	0.18	0.87	0.38	(-0.19 to 0.51)
Self-regulation	11.58 (0.35)	9.92 (0.36)	1.66	0.51	2.55	0.01	(0.66 to 2.65)
Perceived family support	19.17 (0.40)	19.11 (0.40)	0.06	0.56	0.12	0.90	(-1.04 to 1.17)

Note. Analyses used a linear mixed effects model; SE = Standard error, CI = Confidence interval

Discussion

This study evaluated the effect of the Individual and Family Self-management Program for the GI symptom cluster among women with breast cancer undergoing chemotherapy. The researchers recommended both non-pharmacological and pharmacological interventions based on the symptoms that occurred, including nutrition management, personal care hygiene, physical activity and exercise, specific self-management, general management during chemotherapy, and self-regulation skills.

Additionally, the program promoted skills and the ability of self-regulation to encourage self-man-

agement behavior change during chemotherapy such as setting goals to reduce symptom cluster severity and modify self-care behavior, monitoring the occurrence and severity of symptom cluster after receiving chemotherapy, deciding on a self-management method, and following up on symptoms after the management method was implemented, and used telephone follow-up with a LINE OA, which continuously encouraged symptom cluster self-management behavior in the participants and their family member. As a result, participants had significantly lower GI symptom cluster severity. This finding was consistent with previous studies showing that promoting knowledge and training on self-management during chemotherapy

can reduce the severity of treatment-related symptoms.^{13,14,16–20,23} Similarly, this study can promote self-management behaviors during chemotherapy, which aligns with previous studies.^{13–15,23} Unlike previous studies that focused on a single symptom, this study addressed the management of the GI symptom cluster as a whole, recognizing that women with breast cancer often experience two or more concurrent GI symptoms during chemotherapy.^{3–5} Moreover, this study intervention included patients and a family member; families are a key factor in supporting patients during chemotherapy.

Furthermore, within seven days of receiving chemotherapy, the PI followed up with participants and their families via LINE OA to provide social support and advise them on symptoms that occurred at home, based on the social facilitation of the process dimension of the IFSMT. In addition, social support and social facilitation through mobile applications for monitoring symptoms of women undergoing chemotherapy for breast cancer can encourage them to manage symptoms and help them seek and channel help from the healthcare team for self-management after chemotherapy.^{24,25,37} Our findings are consistent with previous studies, which showed that follow-up and knowledge promotion through phone applications can reduce the severity of chemotherapy side effects,^{14–16,23,25} encourage ongoing management of treatment side effects, and reduce symptom severity.^{13,15–18,23}

No difference in perceived family support was found between the two groups. In the follow-up phase of the program, the PI observed that most participants had family members accompanying them to chemotherapy appointments as scheduled by the doctor. Furthermore, the family data between the two groups indicated that the primary caregivers were spouses, fathers, mothers, or children. From the Thai context, family members are the majority of caregivers for patients with cancer and are considered more understanding and able to provide better care than non-family members.²⁹ Furthermore, family caregivers help patients feel

comfortable physically and mentally, as well as with activities of daily living.²⁹ This encourages family members to help plan for self-management, as the family is considered an important supportive factor that enables patients to manage side effects resulting from treatment^{12,26} and increases their resilience in managing chemotherapy-related side effects.²⁷

In summary, this study found that promoting self-management behaviors and self-regulation skills, and adapting mobile phone or mobile application follow-up and monitoring for patients undergoing chemotherapy can reduce the severity of GI symptom clusters and support continuous symptom management as symptoms occur.

Limitations and Recommendations

Several potential limitations must be acknowledged when evaluating these findings. Firstly, this study used a non-randomized, quasi-experimental design. Because data collection periods differed between the two study arms, it was not possible to fully control for external historical or environmental factors that may have co-influenced patient outcomes.

Secondly, blinding was not feasible because the same investigator delivered the self-management intervention and collected subsequent outcome data. This design constraint introduces a potential risk of social desirability bias among participants. Thirdly, the lack of randomization may have introduced selection bias, thereby limiting the study's internal validity. Furthermore, because data collection was restricted to a single university hospital, the findings may not be generalized to healthcare institutions with different clinical contexts, operational structures, or patient demographics. Fourthly, the evaluation was confined to the short-term; proximal outcomes were measured immediately after the program concluded. The data, therefore, reflect only the immediate severity of the GI symptom cluster and short-term symptom-management behaviors.

Directions for Nursing Research

To build upon these foundational findings and address the identified limitations, future nursing research should prioritize the following areas:

1) Employ randomized controlled trials (RCTs) to establish definitive causal attribution, minimize selection bias, and enhance overall internal validity;

2) Use longitudinal follow-up periods to evaluate the long-term sustainability of improved self-management behaviors, as well as use established theoretical frameworks to determine distal, macro-level outcomes such as quality of life, overall well-being, and healthcare-related costs, including both direct medical expenditures and indirect societal costs;

3) Investigate the efficacy of our program on other concurrent symptom clusters experienced by women with breast cancer undergoing diverse chemotherapy regimens;

4) Fully assess the long-term sustainability of self-management behaviors. Further research should evaluate the impact of the program on GI symptoms in women with breast cancer over the full course of four chemotherapy cycles; and

5) Develop and validate dedicated mobile health (mHealth) applications designed to monitor symptoms in real time. This digital approach would provide accessible, remote support to help women with breast cancer and their families systematically manage chemotherapy-induced symptoms from home.

Conclusion and Implications for

Nursing Practice

This study confirms the effect of a program based on the IFSMT, alongside a literature review on managing GI symptom clusters that focuses on strategies for managing symptom clusters rather than a single symptom during chemotherapy. This program should be adapted as a nurse-led program for symptom cluster management, guided by an advanced practice nurse, including a pre-chemotherapy consultation and telephone follow-up during chemotherapy, to support

self-management according to individual patient needs after chemotherapy and to encourage family participation in self-management in clinical practice.

Acknowledgement

We sincerely thank all study participants.

Author Contributions

Study conceptualization and design: KP, BS, AS

Data collection: KP

Data analysis: KP, BS, AS

Study supervision: BS, AS

Manuscript writing: KP, BS, AS

Critical revisions for important intellectual content: BS, AS

Approval of final manuscript: KP, BS, AS

Funding

We thank the Graduate School Alumni Association and the Graduate School of Mahidol University for their partial scholarship support of this study.

Declaration regarding Conflict of Interest

The authors declare no conflict of interest.

Declaration of AI used for Scientific

Writing

We used Grammarly, ChatGPT, and Gemini to improve the clarity and grammar of this paper.

References

1. GBD 2023 Breast Cancer Collaborators. Global, regional, and national burden of breast cancer among females, 1990–2023, with forecasts to 2050: a systematic analysis for the Global Burden of Disease Study 2023. *Lancet Oncol.* 2026;27(3):302–26. doi: 10.1016/S1470-2045(25)00730-2.

2. National Comprehensive Cancer Network. NCCN clinical practice guidelines in oncology breast cancer version 4.2022 [Internet]. 2022 [cited 2025 Feb. 22]. Available from: https://www.nccn.org/professionals/physician_gls/pdf/breast_basic.pdf.
3. Sullivan CW, Leutwyler H, Dunn LB, Cooper BA, Paul SM, Levine JD, et al. Stability of symptom clusters in patients with breast cancer receiving chemotherapy. *J Pain Symptom Manage*. 2018;55(1):39–55. doi: 10.1016/j.jpainsymman.2017.08.008.
4. Kwekkeboom KL. Cancer symptom cluster management. *Semin Oncol Nurs*. 2016;32(4):373–82. doi: 10.1016/j.soncn.2016.08.004.
5. Luo R, Chen H, Liu Y, Sun H, Tang S, Chen Y. Symptom clusters among breast cancer patients in relation to chemotherapy cycles: a longitudinal study. *Support Care Cancer*. 2023;31(10):573. doi: 10.1007/s00520-023-08038-1.
6. Liu L, Wu Y, Cong W, Hu M, Li X, Zhou C. Experience of women with breast cancer undergoing chemotherapy: a systematic review of qualitative research. *Qual Life Res*. 2021;30(5):1249–65. doi: 10.1007/s11136-020-02754-5.
7. Wang YF, He RJ, Yuan XJ, Wang XM, Liang T, Cui ZQ, et al. Dynamic changes and correlation between symptoms and quality of life in patients with breast cancer during chemotherapy. *Technol Health Care*. 2023;31(4):1365–73. doi: 10.3233/THC-220657.
8. He Y, Zheng J, Ye B, Dai Y, Nie K. Chemotherapy-induced gastrointestinal toxicity: pathogenesis and current management. *Biochem Pharmacol*. 2023;216:115787. doi: 10.1016/j.bcp.2023.115787.
9. Yeo W, Ngai NTY, Yip CCH, Mo FKF, Yeo VA, Ko JWH, et al. Risk factors associated with chemotherapy-induced nausea and vomiting among women with breast cancer receiving highly emetogenic chemotherapy: individual patient-based analysis of three prospective antiemetic Trials. *Cancer Manag Res*. 2024;16:283–97. doi: 10.2147/CMAR.S447546.
10. Javan BA, Raoofi S, Rafiei S, Pashazadeh KF, Kazerooni M, Bagheribayati F, et al. Global quality of life in breast cancer: systematic review and meta-analysis. *BMJ Support Palliat Care*. 2024;13(3):528–36. doi: 10.1136/bmjspcare-2022-003642.
11. Anarado AN, Ezeome ER, Ofi OB, Nwaneri AC, Ogbolu Y. Experiences and desired nursing assistance of women on out-patient breast cancer chemotherapy in Southeastern Nigeria. *Psychooncology*. 2017;26(3):385–91. doi: 10.1002/pon.4034.
12. Magalhães B, Fernandes C, Lima L, Martinez-Galiano JM, Santos C. Cancer patients' experiences on self-management of chemotherapy treatment-related symptoms: a systematic review and thematic synthesis. *Eur J Oncol Nurs*. 2020;49:101837. doi: 10.1016/j.ejon.2020.101837.
13. Kim SM, Kim DS, Jang Y, Kim MK, Yu ES, Han DH, et al. Evaluating the effectiveness of a mobile app for breast cancer self-management on self-efficacy: nonrandomized intervention trial. *JMIR Mhealth Uhealth*. 2025;13:e63989. doi: 10.2196/63989.
14. Grašič KC, Gortnar Cepeda T, Kovač T, Kukar M, Ružić GN. Mobile app for symptom management and associated quality of life during systemic treatment in early stage breast cancer: nonrandomized controlled prospective cohort study. *JMIR Mhealth Uhealth*. 2020;8(8):e17408. doi: 10.2196/17408.
15. Mohammadzadeh Z, Eghtedar S, Ayatollahi H, Jebraeily M. Effectiveness of a self-management mobile app on the quality of life of women with breast cancer: a study in a developing country. *BMC Womens Health*. 2022;22(1):446. doi: 10.1186/s12905-022-02020-5.
16. Fjell M, Langius-Eklöf A, Nilsson M, Wengström Y, Sundberg K. Reduced symptom burden with the support of an interactive app during neoadjuvant chemotherapy for breast cancer – a randomized controlled trial. *Breast*. 2020;51:85–93. doi: 10.1016/j.breast.2020.03.004.
17. Seven M, Paşalak Ş, Bağcivan G, Ozkasap O, Selçukbirick F. A mobile application for symptom management in patients with breast cancer. *Oncol Nurs Forum*. 2022;49(5):409–20. doi: 10.1188/22.ONF.409–420.
18. Sajai K, Kitsripisarn S, Bannasaan B. The effects of a self-management promotion program on the oral behavior and oral mucositis of cancer patients receiving chemotherapy. *Med J Sakon Nakhon Hosp*. 2018;21(2):42–56 (in Thai).
19. Kinjo T, Kanda K, Fujimoto K. Effects of a self-monitoring intervention in breast cancer patients suffering from taste alterations induced by chemotherapy: a randomized, parallel-group controlled trial. *Eur J Oncol Nurs*. 2021;52:101956. doi: 10.1016/j.ejon.2021.101956.

20. Lai XB, Ching SSY, Wong FKY, Leung CWY, Lee LH, Wong JSY, et al. A nurse-led care program for breast cancer patients in a chemotherapy day center: a randomized controlled trial. *Cancer Nurs*. 2019;42(1):20-34. doi: 10.1097/ncc.0000000000000539.
21. Ryan P, Sawin KJ. The Individual and Family Self-Management Theory: background and perspectives on context, process, and outcomes. *Nurs Outlook*. 2009;57(4):217-25.e6. doi: 10.1016/j.outlook.2008.10.004.
22. Trisyani Y, Nuraeni A, Anna A, Priambodo AP, Sugiharto F. Nursing interventions for symptom management in breast cancer: a systematic review. *Int J Womens Health*. 2026;18:573338. doi: 10.2147/ijwh.S573338.
23. Tawfik E, Ghallab E, Moustafa A. A nurse versus a chatbot – the effect of an empowerment program on chemotherapy-related side effects and the self-care behaviors of women living with breast cancer: a randomized controlled trial. *BMC Nurs*. 2023;22(1):102. doi: 10.1186/s12912-023-01243-7.
24. Trisyani Y, Nuraeni A, Anna A, Priambodo AP, Sugiharto F. Telehealth approach in breast cancer care: a systematic review of models and outcomes. *Int J Womens Health*. 2025;17:2759-75. doi: 10.2147/IJWH.S549643.
25. Wanchai A, Anderson EA, Armer JM. A systematic review of m-health apps on managing side effects of breast cancer treatment. *Support Care Cancer*. 2022;31(1):86. doi: 10.1007/s00520-022-07464-x.
26. Kuo CY, Liang SY, Tsay SL, Wang TJ, Cheng SF. Symptom management tasks and behaviors related to chemotherapy in Taiwanese outpatients with breast cancer. *Eur J Oncol Nurs*. 2015;19(6):654-9. doi: 10.1016/j.ejon.2015.03.012.
27. Aprilianto E, Lumadi SA, Handian FI. Family social support and the self-esteem of breast cancer patients undergoing neoadjuvant chemotherapy. *J Public Health Res*. 2021;10(2):2234. doi: 10.4081/jphr.2021.2234.
28. Alfaro-Diaz C, Svavarsdottir EK, Esandi N, Klinke ME, Canga-Armayor A. Effectiveness of nursing interventions for patients with cancer and their family members: a systematic review. *J Fam Nurs*. 2022;28(2):95-114. doi: 10.1177/10748407211068816.
29. Meecharoen W, Northouse LL, Sirapo-ngam Y, Monkong S. Family caregivers for cancer patients in Thailand: an integrative review. *Sage Open*. 2013;3(3):1-10. doi: 10.1177/2158244013500280.
30. Azam F, Latif MF, Farooq A, Tirmazy SH, AlShahrani S, Bashir S, et al. Performance status assessment by using ECOG (Eastern Cooperative Oncology Group) score for cancer patients by oncology healthcare professionals. *Case Rep Oncol*. 2019;12(3):728-36. doi: 10.1159/000503095.
31. Faul F, Erdfelder E, Buchner A, Lang AG. Statistical power analyses using G*Power 3.1: tests for correlation and regression analyses. *Behav Res Methods*. 2009;41(4):1149-60. doi: 10.3758/BRM.41.4.1149.
32. Sakpal TV. Sample size estimation in clinical trial. *Perspect Clin Res*. 2010;1(2):67-9. PMID: 21829786.
33. Weigl K, Forstner T. Design of paper-based visual analogue scale items. *Educ Psychol Meas*. 2021;81(3):595-611. doi: 10.1177/0013164420952118.
34. Smilkstein G, Ashworth C, Montano D. Validity and reliability of the family APGAR as a test of family function. *J Fam Pract*. 1982;15(2):303-11. PMID: 7097168.
35. Malathum P. A model of factors contributing to perceived abilities for health –promoting self –care of community-dwelling Thai older adults [dissertation]. [Austin (TX)]: The University of Texas at Austin; 2001. 294 p.
36. Good MJD, Smilkstein G, Good BJ, Shaffer T, Arons T. The Family APGAR Index: a study of construct validity. *J Fam Pract*. 1979;8(3):577-82.
37. Tian L, Wen Y, Li T, Liu C, Fan J. Effects of using app-based interventions on quality of life among breast cancer patients: a systematic review with meta-analysis. *Ann Med*. 2025;57(1):2499027. doi:10.1080/07853890.2025.2499027.

Appendix

Appendix Table A1. Summary of content of research protocol

Week/ time	Session	Activities	Instrument
Week 1 (hospital) Cycle 1 (60 mins)	Session 1: Education about symptom cluster and its management	- Introduction: Explain the objective and details of the program to participant and their family members - Educate about the GI symptom cluster occurring after the first cycle of chemotherapy - Empower participants to live with the physiological and psychological changes from the symptom cluster, including strengthening families to support participants for symptom cluster management - Provide information for symptom cluster management following nutrition management, personal hygiene care, physical activity and exercise, environment management, specific symptom management, and general management during chemotherapy treatment - Provide a handbook and tools for information review	- Handbook: “The GI symptom cluster management for women with breast cancer undergoing AC regimen of chemotherapy” - Infographic: “The GI symptom cluster achievement”
	Session 2: Symptom cluster management plan and symptom cluster self-management with family	Encourage self-management of symptom cluster by themselves and promote self-regulation skills of managing GI symptoms by: - Goal setting with the participant and their family to reduce the severity of the symptom cluster, - Self-monitoring and reflective thinking, decision making, and action, self-evaluation by these activities; determining the level of symptom severity by diary log usage. If low-level, use self-care.	- Infographic: “Self-regulation achievement” using the resources from the Line OA to monitor and manage

Appendix Table A1. Summary of content of research protocol (Cont.)

Week/ time	Session	Activities	Instrument
		In cases of higher symptom severity, ask nurses for help. The nurse researcher provided a variety of self-care management strategies based on symptom severity level.	
	Session 3: Encourage symptom cluster self-management behaviors continuously	– Provide information on how to access and use the menu bar on the LINE OA in this channel, which provides information on symptom management for participants and their families, as well as a chatbot to ask questions, get help, and receive support.	– Handbook – Infographic: “Social facilitator (Line OA)” – Line OA
Week 2 Telephone follow-up by using Line OA (10–15 mins)	Session 3: Continuously encourage symptom cluster self-management behaviors	– Follow-up on day 7 after receiving chemotherapy included (1) Symptoms occurring at home; (2) Management while symptom(s) occurred.	– Line OA
Week 4 (hospital) Cycle 2 (30 mins)	Session 2: Symptom cluster management plan and self-management with family members.	– Reassessment of the remaining information for symptom cluster management – Discussion with the participant and their family member about symptoms occurring at home and adapting the management plan to suit the problem	– Handbook – Infographic: “Self-regulation achievement.”
Week 5 Telephone follow-up using Line OA (10–15 mins)	Session 3: Continuously encourage symptom cluster self-management behaviors	– Follow-up on day 7 after receiving chemotherapy	– Line OA
Week 7 (hospital) Cycle 3 (30 mins)	Outcome assessment post completed implementation	– Reminded participants to complete all questionnaires before program completion. – Then, the researcher informed participant dyads to terminate the program.	

ผลของโปรแกรมการจัดการด้วยตนเองและครอบครัวสำหรับกลุ่มอาการระบบทางเดินอาหารในสตรีที่เป็นมะเร็งเต้านมและได้รับการรักษาด้วยเคมีบำบัด : การวิจัยแบบกึ่งทดลอง

เกศรินทร์ ปิ่นระโรจน์ บัวหลวง สำแดงฤทธิ์* อภิญญา ศิริพิทยาคุณกิจ

บทคัดย่อ: กลุ่มอาการระบบทางเดินอาหารเป็นกลุ่มอาการที่พบได้บ่อยและเกิดขึ้นอย่างต่อเนื่องในสตรีที่เป็นมะเร็งเต้านมและอยู่ระหว่างการได้รับเคมีบำบัด การจัดการอาการทางคลินิกที่มีประสิทธิภาพควรให้ความสำคัญกับวิธีการจัดการเป็นกลุ่มอาการมากกว่าการจัดการอาการใดอาการหนึ่ง ในขณะที่สมาชิกครอบครัวมีบทบาทสำคัญในการช่วยให้การจัดการอาการมีความยั่งยืน ประกอบกับงานวิจัยที่เกี่ยวข้องกับบริบทที่มีจำกัดในประเทศไทย การวิจัยแบบกึ่งทดลองนี้มีวัตถุประสงค์เพื่อประเมินประสิทธิผลของโปรแกรมการจัดการด้วยตนเองและครอบครัวต่อกลุ่มอาการระบบทางเดินอาหาร พฤติกรรมการจัดการอาการ และการรับรู้แรงสนับสนุนจากครอบครัวในสตรีไทยที่เป็นมะเร็งเต้านมซึ่งได้รับการรักษาด้วยเคมีบำบัดในโรงพยาบาลสังกัดมหาวิทยาลัยและอาศัยอยู่กับสมาชิกครอบครัว กลุ่มตัวอย่างได้รับการคัดเลือกแบบเฉพาะเจาะจงจำนวน 57 คู่ ได้รับการคัดเลือกเข้ากลุ่มการศึกษาตามลำดับ โดยอันดับแรกได้รับการคัดเลือกผู้ร่วมวิจัยจำนวน 28 คู่ เข้ากลุ่มควบคุมที่ได้รับการดูแลแบบมาตรฐาน หลังจากนั้นคัดเลือกเข้าร่วมวิจัยจำนวน 29 คู่ เข้ากลุ่มทดลองเพื่อได้รับโปรแกรมการจัดการด้วยตนเองและครอบครัวเป็นระยะเวลา 6 สัปดาห์ เก็บรวบรวมข้อมูลระยะก่อนการทดลอง ระยะติดตามสัปดาห์ที่ 4 และหนึ่งสัปดาห์หลังสิ้นสุดการทดลอง โดยใช้แบบประเมินความรุนแรงของกลุ่มอาการระบบทางเดินอาหาร แบบสอบถามพฤติกรรมการจัดการกลุ่มอาการระบบทางเดินอาหาร และแบบสอบถามการได้รับการสนับสนุนจากครอบครัว วิเคราะห์ข้อมูลโดยใช้สถิติการวิเคราะห์บรรยายและแบบจำลองผลกระทบผสมเชิงเส้น (linear mixed-effects model)

ผลการวิจัยพบว่า กลุ่มทดลองมีความรุนแรงกลุ่มอาการระบบทางเดินอาหารน้อยกว่ากลุ่มควบคุมและมีพฤติกรรมการจัดการกลุ่มอาการมากกว่ากลุ่มควบคุมอย่างมีนัยสำคัญทางสถิติ แต่การรับรู้แรงสนับสนุนจากครอบครัวของทั้งสองกลุ่มไม่มีความแตกต่างกันอย่างมีนัยสำคัญ โดยสรุป ผลการวิจัยแสดงให้เห็นถึงผลของโปรแกรมการจัดการด้วยตนเองและครอบครัวมีประสิทธิผลในการลดความรุนแรงของกลุ่มอาการและช่วยส่งเสริมพฤติกรรมการจัดการอาการ ซึ่งโปรแกรมจากการศึกษานี้พยาบาลสามารถนำไปบูรณาการในการดูแลผู้ป่วยมะเร็งในคลินิกเพื่อส่งเสริมพลังอำนาจผู้ป่วยและครอบครัวในการจัดการอาการ การศึกษาในอนาคตควรมีการศึกษาวิจัยแบบสุ่มที่มีกลุ่มควบคุม รวมทั้งมีการติดตามผลในระยะยาวเพื่อคงไว้ซึ่งพฤติกรรมการจัดการอาการอย่างยั่งยืน

Pacific Rim Int J Nurs Res 2026; 30(4) 978-994

คำสำคัญ: มะเร็งเต้านม เคมีบำบัด แรงสนับสนุนจากครอบครัว กลุ่มอาการระบบทางเดินอาหาร การพยาบาลผู้ป่วยมะเร็ง การจัดการด้วยตนเอง พฤติกรรมการจัดการอาการ

เกศรินทร์ ปิ่นระโรจน์ นักศึกษาหลักสูตรพยาบาลศาสตรมหาบัณฑิต สาขาวิชาการพยาบาลผู้ใหญ่และผู้สูงอายุ โรงเรียนพยาบาลรามาธิบดี คณะแพทยศาสตร์โรงพยาบาลรามาธิบดี มหาวิทยาลัยมหิดล
E-mail: kedsarin.pin@student.mahidol.ac.th,
ORCID iD: 0009-0001-5178-1527
ติดต่อที่ : บัวหลวง สำแดงฤทธิ์* รองศาสตราจารย์ โรงเรียนพยาบาลรามาธิบดี คณะแพทยศาสตร์โรงพยาบาลรามาธิบดี มหาวิทยาลัยมหิดล
E-mail: bualuang.sum@mahidol.ac.th, ORCID iD: 0000-0002-3264-2644
อภิญญา ศิริพิทยาคุณกิจ ผู้ช่วยศาสตราจารย์ โรงเรียนพยาบาลรามาธิบดี คณะแพทยศาสตร์โรงพยาบาลรามาธิบดี คณะแพทยศาสตร์โรงพยาบาลรามาธิบดี มหาวิทยาลัยมหิดล E-mail: apinya.sii@mahidol.ac.th,
ORCID iD: 0000-0001-9001-8041