

Effectiveness of Gratitude Intervention Program on Gratitude, Self-Responsibility for Learning and Study Habits in Nursing Students: An Embedded Mixed-Method Study

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A quasi experimental study was conducted to assess the effectiveness of a Gratitude Intervention Program on gratitude, self-responsibility for learning and study habits in nursing students of Rajhistan, India. Further, qualitative data from focus group discussions was also obtained from the participants in experimental group to understand students' experiences of behavioral change after intervention. The experimental group (n = 53) received a structured 30-day Gratitude Intervention Program followed by 15 reinforcement sessions over one month, whereas the control group (n = 55) continued routine academic activities. Outcomes were assessed using validated self-structured questionnaires measuring gratitude, self-responsibility for learning, and study habits. Quantitative data were analyzed using repeated-measures mixed-design ANOVA. Significant group-by-time interactions were observed for gratitude. The experimental group showed a marked increase in estimated marginal mean scores from pretest to posttest and at follow-up, whereas the control group showed minimal change over time. Qualitative data from focus group discussions were analyzed using reflexive thematic analysis. Qualitative findings indicated that students experienced gratitude as a transformative process that increased positive emotions, self-awareness, internal responsibility, and academic focus.. Integrating gratitude-based practices into nursing education may strengthen positive learning behaviors and support professional development.

Keywords: gratitude; nursing students; learning; responsibility; study skills; education; nursing

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Introduction

Ensuring high-quality nursing education that prepares student nurses for a varied and rapidly evolving healthcare environment is a key responsibility of nurse educators. They are responsible for recording the results of educational programs and assisting pupils in their studies. Nurses need to be educated to be more intelligent, emotionally resilient, morally and spiritually powerful, and globally adaptable (Evans et al., 2013).

Prior studies have emphasized the effect of the educational environment, teaching methods, and personal traits on nursing students' learning (Cukljek et al., 2017). Students learn better when they are engaged in learning and taking ownership of it; when teachers provide the necessary scaffolding to develop self-directed learning skills (Carpenter & Pease, 2013).

In terms of the students' learning habits, the habits are the behavioral patterns developed by students in their learning activities and are indicators of students' learning effectiveness. The notion of effective study habits is manifested as consistency, discipline, and self-regulated behaviors in learning (Ayoub & Abd El-Aziz, 2018). Students' positive learning habits and their responsibility to learning are needed to make students more positive in taking responsibility for their learning. It is necessary to identify factors that have a negative impact on these behaviors and to use structured interventions to make the student's attitude towards these study behaviors positive (Yalcin, 2008).

Grammeters, teachers and experts are increasingly asserting that of the seven character traits (strength, enthusiasm, self-control, positivity, emotional awareness and creativity), gratitude is one that is most predictive of student success in academic environments (Seligman et al., 2009). Gratitude is defined as the recognition and appreciation of beneficial experiences and the acknowledgment that many positive aspects of life arise from sources beyond oneself (Emmons & Stern, 2013). The term "grateful" comes from the Latin word "gratus," which denotes a profound appreciation of others, the natural world, God, or the universe. This word suggests a personal experience that encompasses gratitude, awe, and appreciation (Emmons & McCullough, 2003).

Evidence suggests that cultivating gratitude may enhance concentration, resilience, and a positive outlook toward learning. A study investigated the effects of thankfulness practice on college students' capacity for concentration and fortitude under pressure. The data found that students who consciously exercised thankfulness after being reminded to do so toward learning reported greater levels of gratitude, improved

concentration in class, and greater resilience when learning proved to be more difficult. This improved concentration may be linked to a positive mindset towards learning and reduced stress (Wilson, 2016).

Theoretical Background

In the present study, two complementary theories guided the study: Broaden and Build Theory and Self-Determination Theory. The Broaden-and-Build Theory suggests that positive emotions open up people's thought-action repertoire and contribute to the development of long-lasting psychological, social, and cognitive resources. The positive emotion of gratitude can expand students' thinking by encouraging them to focus on their resources, supports, and growth opportunities rather than focusing on their deficits and barriers. When students face academic challenges, this cognitive reframing can help to diminish stress, boost optimism, and improve resilience (Fredrickson, 2004).

Self-Determination Theory provides a behavioral explanation for how gratitude may influence learning. According to this theory, students are more likely to engage deeply in their studies when they experience autonomous motivation, perceived competence, and a sense of ownership over their learning process. Gratitude may enhance these motivational processes by increasing awareness of the support provided by parents, teachers, and peers and by fostering a desire to reciprocate through responsible and disciplined behavior. As students become more appreciative of educational opportunities, they may develop stronger self-responsibility for learning and greater commitment to their academic goals (Ryan & Deci, 2000).

Gratitude is an important component of soft skill that can influence cognitive level of students towards their learning which means the students need to have a sense of responsibility to learn and which in turn influence student's regularity in their studies. A pilot study conducted among nursing students revealed that 50 % of them exhibited low level of gratitude and study habits, while 37.5% showed low self-responsibility towards learning. These results highlight the importance of implementing focused interventions aimed at improving positive learning behaviors through gratitude-oriented approach (Thomas & Matur, 2021). Gratitude is one of the behavioral drivers that promote goal-oriented behavior and alignment with core life values such as discipline, concern for others, respect, self-esteem, and moral responsibility. As a key soft skill, gratitude can influence student's cognitive engagement in learning by fostering a sense of responsibility and commitment to their studies, thereby improving their regularity and study habits. In light of the above literature, there is a

paucity of research on gratitude intervention programs in the Indian context.

Rationale

Despite increasing recognition of gratitude as a positive psychological resource, most educational interventions in nursing have primarily focused on academic achievement, stress management, and clinical skills, with limited attention to gratitude as a factor influencing learning behaviors. Previous studies have reported that gratitude is associated with enhanced well-being, motivation, resilience, and positive academic outcomes. However, empirical evidence examining the relationship between gratitude, self-responsibility for learning, and study habits among nursing students remains scarce, particularly in the Indian context. The findings of the pilot study carried out by the researchers revealed that a significant percentage of nursing students showed low levels of gratitude, self-responsibility in learning and study habits, which in turn indicated a need for interventions that focus on these behavioral aspects. As responsible learning behaviors play an important role in academic and professional development, and gratitude appears to be a promising intervention to improve emotional and cognitive functioning, it is essential to engage in a study on gratitude-based learning interventions with nursing students. Integrating gratitude into nursing education may foster self-awareness, academic discipline, resilience, and professional attitudes that are essential for compassionate patient care. Hence, this study was undertaken to examine the impact of Gratitude Intervention Program on enhancing gratitude and positive learning behaviors such as self-responsibility to learn, and study habits among nursing students in India.

Objectives

1. To evaluate the effectiveness of Gratitude Intervention Program on gratitude, self-responsibility for learning, and study habits among nursing students.
2. To examine the relationships among gratitude, self-responsibility for learning, and study habits.
3. To explore students' experiences and perceived behavioral changes following participation in the Gratitude Intervention Program.

Hypotheses

On the basis of the previous discussion, we have formulated the following hypotheses:

1. There is significant mean difference in Gratitude score between Experimental and Control group before and after administration of

Gratitude Intervention Program across pretest, posttest, and follow-up assessments at 0.05 level of significance.

2. There is significant mean difference in Self-responsibility for learning score between Experimental and Control group before and after administration of Gratitude Intervention Program across pretest, posttest, and follow-up assessments at 0.05 level of significance.
3. There is significant mean difference in Study Habits score between Experimental and Control group before and after administration of Gratitude Intervention Program across pretest, posttest, and follow-up assessments at 0.05 level of significance.

Method

Research Design

An embedded experimental mixed-methods design was adopted in this study, in which qualitative data were embedded within a quantitative experimental framework (Figure 1). The quantitative strand employed a quasi-experimental nonequivalent control group pretest-posttest-follow-up design. The experimental group received the Gratitude Intervention Program, while the control group continued with the routine activities and did not receive the intervention during the study period.

The qualitative strand adopted a qualitative descriptive approach which was embedded within the experimental arm of the study and was conducted only with participants from the experimental group. The purpose of the qualitative strand was to explore students' experiences of practicing gratitude and their perceived behavioral changes resulting from the Gratitude Intervention Program; therefore, only those who received the intervention were invited to participate in focus group discussions. Students in the control group did not receive the intervention and therefore, were not included in the qualitative inquiry. Their role was limited to providing quantitative comparison data at pretest, posttest, and follow-up assessments. The integration of quantitative and qualitative methods enabled both evaluation of intervention effectiveness and exploration of the processes through which change occurred. The study was reported in

accordance with the TREND (Transparent Reporting of Evaluations with Nonrandomized Designs) statement.

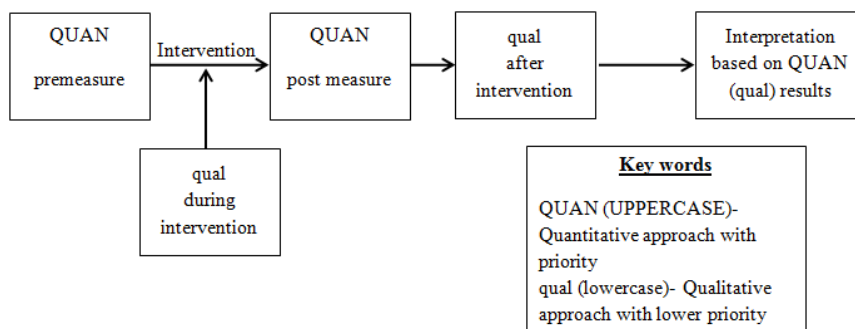


Figure 1: Schematic Diagram of Embedded Experimental Mixed Design

Sample and Sampling Strategy

Third and fourth year B.Sc. Nursing students from two selected nursing colleges in Rajasthan were recruited for the study. Third and fourth year B.Sc. Nursing students were selected because they had greater exposure to academic and clinical learning, higher levels of expected autonomy, and increased academic responsibilities, making them well suited for an intervention designed to enhance gratitude, self-responsibility for learning, and study habits. The allocation of participants followed an institutional cluster-based approach in which one institution was assigned as the experimental group and the other as the control group to minimize cross- contamination. Nonprobability consecutive sampling technique was used to recruit the participants in which all eligible students who were present during the data collection period and consented to participate were included in the study. A total of 108 students were enrolled, including 53 in the experimental group and 55 in the control group. Because consecutive sampling is a nonprobability sampling method in which all accessible and eligible participants are included, conventional sample size estimation formulas based on probability sampling assumptions were not applied. Instead, the final sample size was determined by the total number of students who met the inclusion criteria and consented to participate during the study period. Students receiving treatment for a major mental illness were excluded. During follow-up, two students in the experimental group and three students in the control group were irregular in attendance; however, all participants were retained in the analysis using an intention-to-treat approach.

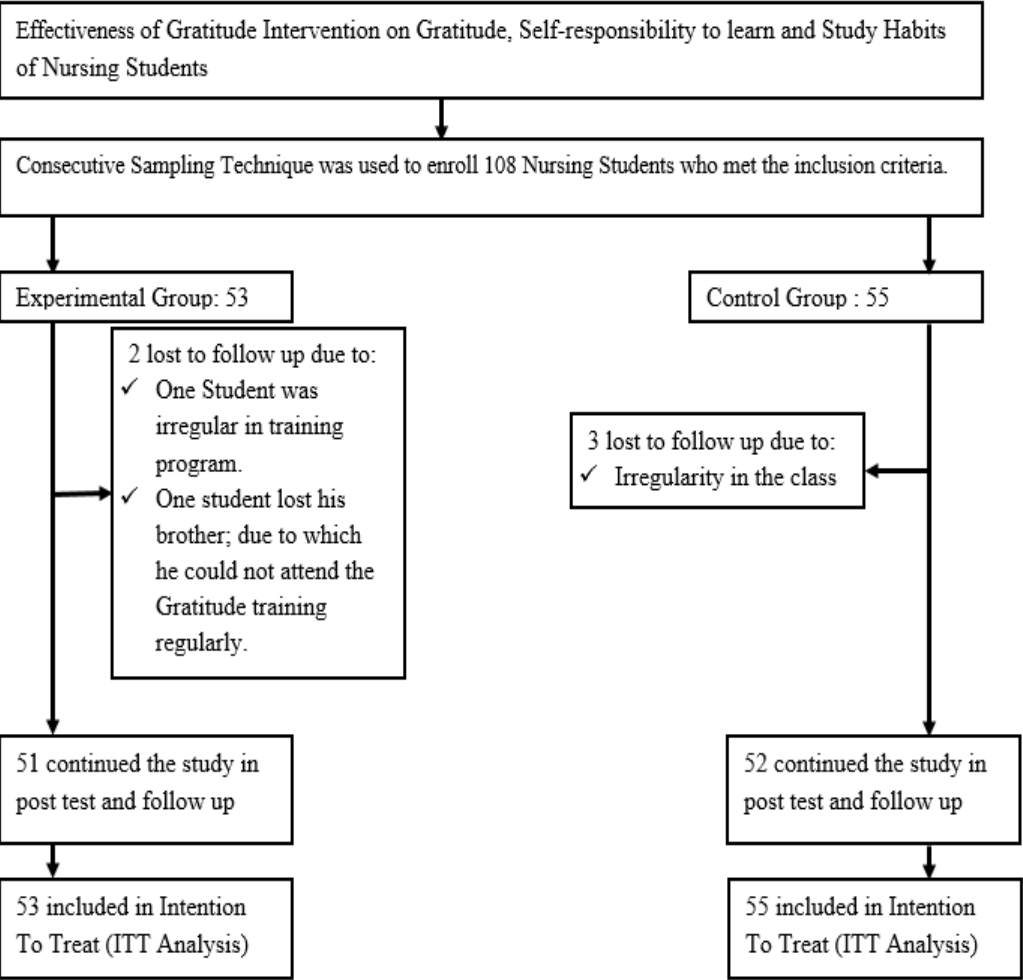


Figure 2: TREND Participant Flow Diagram

Table 1
Sample Characteristic Table

Baseline Data	Experimental Group (n=53) Frequency (percentage)	Control Group (n=55) Frequency (percentage)
Age in years		
20-22	36 (67.9%)	23 (41.8%)
>22	17 (32.1%)	32 (58.2%)
Gender		
Male	30 (56.6%)	22 (40%)
Female	23 (43.4%)	33 (60%)

Baseline Data	Experimental Group (n=53) Frequency (percentage)	Control Group (n=55) Frequency (percentage)
Education of Mother		
No formal education	24 (45.3%)	40 (72.7%)
Below 10 th standard	10 (18.9%)	10 (18.2%)
11 th -12 th standard	6 (11.3%)	5 (9.1%)
Diploma/technical education	1 (1.9%)	0
Graduation	10 (18.9%)	0
Post-Graduation and above	2 (3.8%)	0
Education of Father		
No formal education	5 (9.4%)	12 (21.8%)
Below 10 th standard	12 (22.6%)	26 (47.3%)
11 th -12 th standard	14 (26.4%)	7 (12.7%)
Diploma/technical education	1 (1.9%)	6 (10.9%)
Graduation	13 (24.5%)	4 (7.3%)
Post-Graduation and above	8 (15.1%)	0

Instrument

A self-structured questionnaire was developed to assess gratitude, self-responsibility to learn, and study habits. Content validity was established by experts from clinical psychology, psychiatric nursing, and soft skills training. Reliability was determined using Cronbach's alpha (ranging from 0.88 to 0.90).

Baseline Data of student

It includes age, gender, academic year of study, education of the parents.

Self-structured questionnaire to assess self- responsibility to learn

This 20-item self-structured questionnaire assessed four domains: academic and learning activities, autonomy and control of learning, cooperation and classroom behavior, and attitude towards study. Responses were rated on a 3-point scale (0 = not applicable, 1 = somewhat applicable, 2 = applicable). Scores were categorized as low, moderate, or high. The Content Validity Index (CVI) was 0.81 and Cronbach's α was 0.90.

Self-structured questionnaire to assess students study habits

It included 16 items assessing core study habits, study procedures, and barriers to study. Arbitrary scoring was applied, and results were classified into low, moderate, and high categories. The CVI was 0.85 and Cronbach's α was 0.88.

Self-structured Gratitude Questionnaire

This self-structured questionnaire comprised of 14 closed-ended items and 7 open-ended questions assessing domains such as recognizing/perceiving gratitude, expressing gratitude, attitude related to gratitude, taking action as a return of gratitude, harmonizing with self and people, humbleness and coping and gratitude as a mechanism to identify with the people. There were no right or wrong answers; scores were grouped as low, moderate, and high. The CVI was 0.82 and Cronbach's α was 0.90.

Intervention (Gratitude Intervention Program)

The intervention was developed by the principal investigator based on prior training in Universal Human Values and Personality Development, Values in Health Care and Spiritual Approach, Facilitator Training course on Mindfulness based Gratitude Therapy. Based on the review of literatures, training program modules and need identified from the pilot study, the Gratitude Intervention program was developed and intervention was planned to conduct for 30 days to evaluate its effectiveness. The content of the training program was validated by the experts from the same field. The intervention was delivered face-to-face in a classroom setting to the entire experimental group ($n = 53$) under the supervision of the principal investigator. Each session was about 60 minutes long, with the storytelling, gratitude meditation, reflective journaling, group discussion, sharing of personal experiences, and practical exercises. The intervention was organized as a two phase program: (a) 30-day intensive core intervention and (b) structured reinforcement phase for the next month. The two phases were deemed to be part and parcel of the intervention protocol.

Phase 1 Core Gratitude Intervention

A world-leading scientific expert on gratitude, Emmons (2013) created a 21 day program about gratitude and published his book, *Gratitude Works!* in which he talked about how one could create emotional prosperity by practicing gratitude over a 21 day period. Likewise, another study using a three week (21-day) gratitude program found that this intervention resulted in a significant increase in participants' state gratitude and positive affect among ages of 18–36 (Lai & O'Carroll, 2017). From these evidence-based models, it was decided that the intervention should be expanded to 30 days, giving students enough time to internalize abstract concepts, through storytelling, situational learning, and reflection. The total intervention program was for 45 sessions (approximately 45 contact hours). The core intervention consisted of four weekly modules: Week 1: introduction to gratitude and awareness of positive aspects of life; Week 2: gratitude to parents, teachers, peers and others; Week 3: gratitude during difficult times and positive reinterpretation;

and Week 4: the integration of gratitude into study habits, relationships, and professional nursing practice. A session-by-session roadmap is provided in Table 2. The extra days provided opportunities for students to share their stories, express their emotions and think about their feelings about gratitude in regard to their own and others.

Phase 2 Reinforcement Training

Reinforcement training was used to establish and maintain attitudes and behaviors acquired in the core intervention. Reinforcement sessions were scheduled every other day for 1 month (15 sessions) and each session lasted about 60 minutes. The behavioral goal of the reinforcement phase was to strengthen the internalization and continued application of gratitude practices in daily life and academic activities. Sessions revisited all domains of gratitude and encouraged participants to share experiences, discuss challenges, and monitor changes in their attitudes and study behaviors. Reinforcement was included because value based and behavioral changes are gradual processes that require repeated practice and reflection to become integrated into students' routines.

Table 2

Summary of Gratitude Intervention

Objectives	Phase	Behavioral Goal	Duration & Frequency	Activities/ Approaches
1. To recognize / perceive gratitude by students	Core Gratitude Intervention	Develop awareness and practice of gratitude	30 days Daily, 60 minute / session	* Reflection exercises
2. To explain benefits of gratitude				* Video session on gratitude
3. Expressing gratitude towards areas such as Parents, Teachers, Siblings, Relatives, Friends, Neighborhood , Higher beings(God), Nature etc				* Sharing Gratitude stories/ examples
				* Group discussions
				* Brain storming sessions
				* Writing gratitude diary (in each specific areas)
				* Gratitude journaling
				* Life thankfulness review
				* Writing thank you letter and card
				* Counting of blessings
				* Making gratitude jar

Objectives	Phase	Behavioral Goal	Duration & Frequency	Activities/ Approaches
4. To internalize gratitude as a quality				* Preparing gratitude tree
5. To help students to take action as a repay of gratitude				* Planning of gratitude visit
				* Gratitude diary reflection
				* Bucket filling
6. To understand gratitude as an intentional act				* Group energizer games
				* Practical exercises
7. To express Gratitude as a mechanism to identify with the people				* Worksheet preparation
				* Role play
	Reinforcement Training	Consolidate and sustain gratitude-based behaviors	1 month, alternate days, 15 sessions, 60 min/ session	Review of concepts, experience sharing, reflective exercises

Procedure

Data were collected over a period of three months. Both the experimental and control groups completed the same quantitative assessments at three time points: baseline (pretest), posttest, and follow-up. At baseline, all participants completed the Baseline data, Gratitude Questionnaire, Self-Responsibility for Learning Questionnaire, and Study Habits Questionnaire. Following the pretest, the experimental group received the Gratitude Intervention Program, which consisted of two integrated phases: (a) a 30-day core intervention involving daily 60-minute sessions conducted from August 16 to September 15, 2021, and (b) a reinforcement phase comprising 15 alternate-day sessions over the subsequent month, each lasting approximately 60 minutes. The reinforcement phase was added to the intervention as a necessary component to maintain and reinforce gratitude related attitudes and behaviors. The non-intervention group engaged in regular school work without being given any particular intervention. Both groups completed the posttest 7 days after completion of the core intervention and the follow-

up assessment at the end of the reinforcement phase which was on October 22, 2021.

Following the follow-up assessment, qualitative data were collected through two focus group discussions with a purposive subsample of students from the experimental group only (8–10 participants per group). Because the purpose of the qualitative component was to explore participants' experiences of practicing gratitude and their perceived behavioral changes, only students who received the intervention were invited to participate; the control group served solely as a quantitative comparison group. Each discussion lasted 60 to 90 minutes and was guided by semi-structured questions such as: "How did practicing gratitude influence your thoughts and feelings?", "What changes did you notice in your approach to learning and studying?", and "Which aspects of the program were most helpful in changing your behavior?" Discussions were audio recorded with participants consent and transcribed verbatim for analysis.

Ethical Considerations

The study was approved by Institutional Ethics committee. The research was carried out in accordance with the ethical standards outlined in the Declaration of Helsinki. Prior to initiating data collection, formal permission was secured from the Principals of selected Nursing Colleges and written informed consent was obtained from all participants. Participant confidentiality and anonymity were strictly maintained throughout the study. No significant issues were encountered during the data collection process.

Statistical Analysis

Quantitative data were analyzed using SPSS version 16. An intention-to-treat (ITT) approach with the last observation carried forward method was used to retain all enrolled participants in the analysis and to minimize attrition bias (Gupta, 2011) (Figure 2). Normality was assessed using the Kolmogorov–Smirnov test. Repeated-measures mixed-design analysis of variance was used to examine group-by-time effects for gratitude, self-responsibility for learning, and study habits. When the assumption of sphericity was violated, Greenhouse–Geisser corrections were applied. Pearson's correlation coefficient was used to assess relationships among the study variables, and statistical significance was set at $p < .05$.

Qualitative data were analyzed using reflexive thematic analysis following the six-phase approach described by Braun & Clarke (2006): familiarization with the data, generation of initial codes, development of

candidate themes, review of themes, definition and naming of themes, and preparation of the final report. Quantitative and qualitative findings were integrated during interpretation to provide a comprehensive understanding of the effects of the Gratitude Intervention Program.

Results

At baseline, the experimental and control groups were comparable on major baseline variables and pretest scores. In Baseline data, among Experimental group, majority (67.9%) belonged to age group 20-22 years, where as in Control group, majority (58.18%) were belonged to age group of more than 22 years. Maximum students were from 3rd year BSc Nursing in both the group. In Experimental group, number of male students (56.6%) were more than female students (43.4%) whereas in Control group, maximum (60%) were females. Regarding education of mothers, in Experimental group, majority of the mothers, i.e. 24 (45.3%) of the student had no formal education. In Control group also maximum number of mothers i.e. 40 (72.7%) had no formal education. About the education of fathers of students, the number of person with no formal education in Experimental group was very less (9.4%), similarly only 21.8% of fathers in the control group had no formal education. As most of the students are from local areas, their socio-demographic variables are mostly common. This commonality may have influence on their responses to the items in the study tools (Table 1). Baseline equivalence testing indicated no statistically significant differences in pretest scores of gratitude, self-responsibility for learning, and study habits ($p > .05$), suggesting adequate homogeneity of the two institutional groups.

Table 3:

Comparison of mean 'Gratitude' Scores at three different time points (Pretest, Post test and Follow up) using Repeated Measures Mixed design ANOVA with Greenhouse-Geisser

n=108			
Gratitude score	Experimental Group (Mean±SD)	Control Group (Mean±SD)	F, df(time * Group, error), p value
Pretest	10.9 ±8.82	11.14 ± 8.93	141. 867 (1.19, 126.99)
Post test	25.79 ±6.41	12.52 ± 8.69	<.001
Follow up	30.66 ± 4.64	13.40 ± 8.43	

Note: Greenhouse-Geisser correction was applied as Mauchly's test of Sphericity assumption violated as $P<.001$

Table 3 presents the comparison of gratitude scores between the experimental and control groups across three assessments (pretest, posttest, and follow-up). Repeated-measures mixed-design ANOVA with Greenhouse–Geisser correction demonstrated a statistically significant group-by-time interaction, $F(1.19, 126.99) = 141.867$, $p < .001$. The experimental group showed a marked increase in estimated marginal mean scores from pretest to posttest and at follow-up, whereas the control group showed minimal change over time.

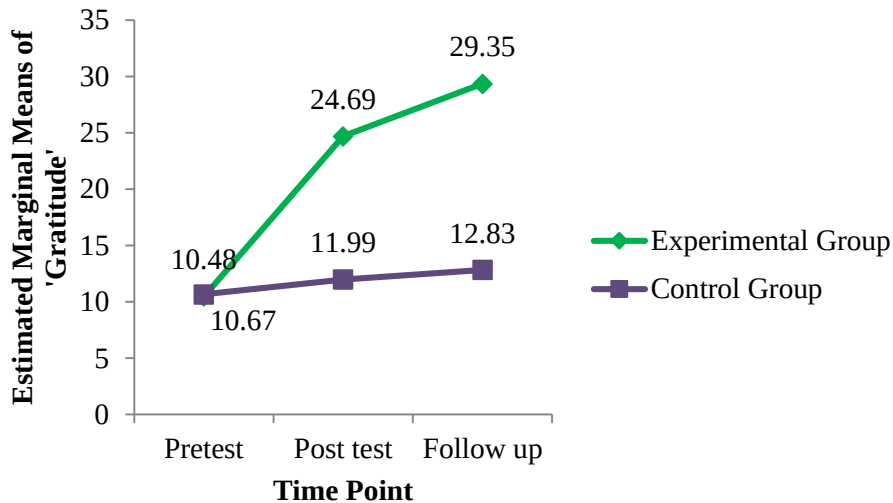


Figure 3: Estimated Marginal Means of 'Gratitude' Score in Experimental and Control group at three Time point

These findings indicate that the Gratitude Intervention Program produced substantial and sustained improvements in students' gratitude (Figure 3).

Table 4

Comparison of mean 'Self- Responsibility to learn' Scores at three different time points (Pretest, Post test and Follow up) using Repeated Measures Mixed design ANOVA with Greenhouse-Geisser

Self-Responsibility to learn score	Experimental Group (Mean±SD)	Control Group (Mean±SD)	F, df(time * Group, error), p value
Pretest	14.26 ± 3.87	14.58 ± 3.75	203.805 (1.27, 135.402) <.001
Post test	28.45 ± 4.25	16.14 ± 5.00	
Follow up	30.35 ± 4.05	17.03 ± 4.84	

#Greenhouse-Geisser correction was applied as Mauchly's test of Sphericity assumption violated as $P < .001$

As shown in Table 4, self-responsibility for learning also differed significantly between groups over time, $F(1.27, 135.402) = 203.805$, $p < .001$. The experimental group's estimated marginal mean scores increased from 12.07 at pretest to 23.55 at posttest and 25.12 at follow-up, while scores in the control group remained relatively stable. This pattern suggests that practicing gratitude enhanced students' sense of ownership, accountability, and autonomy in their learning (Figure 4).

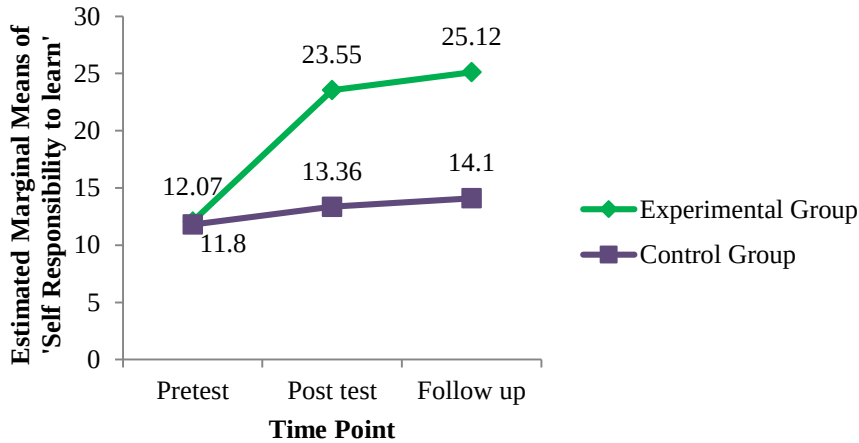


Figure 4: Estimated Marginal Means of 'Self-Responsibility to learn' Score in Experimental and Control group at three Time point

Table 5

Comparison of mean 'Study Habits' Scores at three different time points (Pretest, Post test and Follow up) using Repeated Measures Mixed design ANOVA with Greenhouse-Geisser

Study Habits score	Experimental Group (Mean±SD)	Control Group (Mean±SD)	n=108
			F, df(time * Group, error), p value
Pretest	15.30 ± 10.56	15.49 ± 10.33	86.168 (1.15, 122.464) <.001
Post test	31.54 ± 7.62	17.50 ± 10.00	
Follow up	34.75 ± 5.54	18.98 ± 9.60	

#Greenhouse-Geisser correction was applied as Mauchly's test of Sphericity assumption violated as $p < .001$

Table 5 presents changes in study habits across the three assessments. A significant group - by- time interaction was observed, $F(1.15, 122.464) = 86.168, p < .001$. The mean scores for the experimental group increased from 11.60 at baseline to 23.62 at posttest and 26.02 at follow-up while there was minimal change in the control group. The results show that the intervention was successful in enhancing the levels of gratitude and learning responsibility and that learning responsibility outcomes were also reflected positively in more systematic and effective behaviours toward learning. (Figure 5).

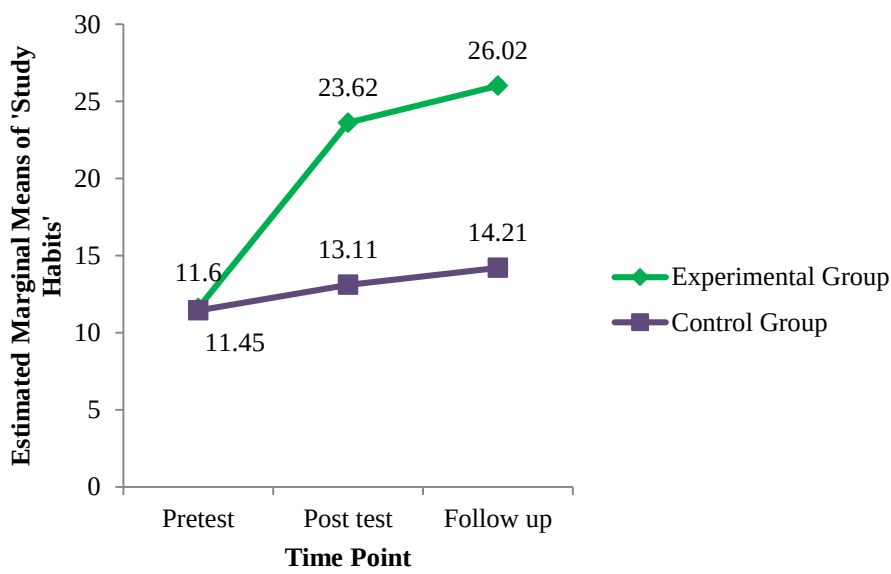


Figure 5: Estimated Marginal Means of 'Study Habits' Score in Experimental and Control group at three Time point

Table 6
Correlation between Gratitude and Self-Responsibility to learn, Self-Responsibility to learn and Study Habits, Gratitude and Study Habits

Variables	Correlation Coefficient (r)	p
Gratitude and Self-Responsibility to learn	0.90	<.001
Gratitude and Study Habits	0.86	<.001
Self-Responsibility to learn and Study Habits	0.89	<.001

Note: $p < .001$
Pearson’s correlation analysis indicated strong positive

relationships between the three study variables. Gratitude was highly correlated with self-responsibility for learning ($r = .90, p < .001$) and study habits ($r = .86, p < .001$), while self-responsibility for learning was strongly correlated with study habits ($r = .89, p < .001$). These results are in line with the conceptual framework of the study, indicating that gratitude can indirectly improve students' study habits by boosting their sense of responsibility and involvement in their learning process (Table 6).

Qualitative Analysis

Explanatory studies were conducted through focus group discussions with students in the experimental group to gain insights into how the Gratitude Intervention Program influenced the learning behaviors. Thematic analysis with reflexive approach as proposed by Braun & Clarke (2006) was used for data analysis. The interpretive themes that emerged identified mechanisms for the quantitative findings and provided insight into the mechanisms.

Theme 1: Gratitude generated Positive emotional states that reduced academic stress

Students described gratitude as an emotional experience that produced feelings of happiness, calmness, and psychological relief. Meditations and reflections of gratitude helped them manage their stress and brought them into a more positive emotional space, allowing them to focus and be more confident in their learning tasks. What this finding implies is that gratitude was used as an emotional coping strategy that alleviated anxiety and enhanced well-being.

“I really enjoyed Gratitude Meditation. It was an amazing experience. I could imagine the situations described and felt more stress free and happy afterward”. (Nursing Student,5)

These accounts are useful for understanding the quantitative increases in scores of gratitude, as well as for viewing gratitude as a strong emotional practice.

Theme 2: Gratitude become a daily self-regulation practice

Participants reported incorporating gratitude into their everyday routines, especially via morning reflections and intentional expressions of thankfulness. This daily routine gave them a greater sense of energy, motivation and mental clarity at the start of the day. With practice, gratitude became a more self-regulated practice that organized their thinking and actions in a more disciplined and purposeful way.

“From today Morning I have started practicing Gratitude. After waking up daily I thank for all the things that had happened previous day and night like thanks for good day, work, people, food, job, travel, sleep, like many more. It gives me energy for the rest of the day”. (Nursing Student,11)

This theme highlights the process by which gratitude moved from discrete intervention activity to an active behavioral practice, which could account for the continued positive outcomes at follow-up.

Theme 3: Gratitude fostered Reciprocal Responsibility and Prosocial Motivation

Students expressed gratitude as helping them to become more aware of the support that they received from other people, especially their parents, teachers and peers. When this support was acknowledged, it was accompanied by a motivation to offer some return by engaging in more responsible behaviors and in their studies. Gratitude thus brought about a sense of moral obligation and accountability for the act of appreciation.

“When I feel grateful to people, I realize someone helped me when I needed it, so I want to help others in return” (Nursing student, 1)

This reciprocal orientation gives a plausible account of the marked rise in self-responsibility for learning and consequently the greater students' resolve to make good use of their educational opportunities responsibly.

Theme 4: Gratitude Deepened Self-Awareness and Appreciation of Life Resources

Participants reported becoming more conscious of the many personal and social resources they possessed, including health, family, education, and talents. This expanded perspective developed an attitude of humility, satisfaction, and self-esteem. Students got an appreciation of what they had, which helped to give a more balanced view of themselves and their situation.

“I am thankful to God or higher power who has provided me with everything. I have a healthy body, loving parents, caring family and friends, good education, good college, excellent teachers, nice talents, skills, worthy life among other things. Many do not have what I have, so I feel happier and more satisfied” (Nursing Student, 12)

This theme suggested that expressing gratitude led to self-reflection and meaning making that were likely to result in greater emotional resilience and long-lasting motivation.

Theme 5: Gratitude Reframed Learning Challenges as Opportunities for Growth

Students reported that gratitude changed the way they interpreted academic stress and performance situations. They were more likely to take on challenges with confidence and a positive attitude, instead of being intimidated by fear and outside influences. This cognitive reframing helped children focus better and to be more regular in their studies.

“I was nervous before my seminar, but practicing gratitude reduced my anxiety and helped me focus. My teacher and classmates appreciated my presentation.” (Nursing Student, 20)

This theme is directly supports the quantitative finding of improved study habits; showing how gratitude helped students to stay focused and engaged in learning. Themes, when combined, indicated that gratitude functioned in an interrelated emotional/cognitive/behavioural way. It decreased stress in the academical field, made studying a habit, increased the responsibility of studying, increased self-awareness and changed challenges into opportunities. These qualitative insights offer a compelling explanation for the big quantitative gains in gratitude, self-responsibility for learning, and study habits.

Discussion

The current study revealed that the Gratitude Intervention Program had significant, long-lasting effects on nursing students' gratitude, self-responsibility for learning and study habits compared to the control group. Furthermore, the three variables were highly correlated, meaning that a high level of gratitude was also associated with a high level of ownership of learning and effective study behaviors. The results of this study corroborate the conceptual framework of this study which stated that gratitude is a positive psychological resource for improving students' motivation, accountability and motivation in academic activities. These enhancements are especially relevant in nursing education, where students are expected to apply the scientific knowledge, clinical competence, and professional values.

Compared to the control group, the experimental group scored significantly higher on posttest and follow-up measures of gratitude, self-responsibility for learning and study habits, suggesting the positive impact of the intervention was maintained after the training period. Two different colleges of nursing were used to recruit participants but baseline equivalence testing showed that they were similar in terms of their demographic characteristics and pretest scores. However, contextual differences including variations in educational climate, pedagogical and supportive practices, as well as other factors, may have emerged in the cluster setting, necessitating caution when interpreting the results. However, there were no exact similar studies on Gratitude and self-responsibility to learn as well as Gratitude and Study habits among Nursing students or any of college students. Nevertheless, only a few studies with similar concepts were found in which one study by Han et al. (2020) conducted an embedded mixed-method study involving nursing students, which demonstrated that positive psychology interventions, including

gratitude-based activities, significantly enhanced psychological capital in the intervention group compared to controls.

The present findings are also in line with the work of Vess (2015), who investigated the association between gratitude and readiness for self-directed learning among final-year nursing students. Their results indicated a modest but statistically significant positive relationship between gratitude and self-directed learning readiness ($r = .359, p = .005$), as well as with dimensions such as motivation to learn and self-regulation. The reported mean scores suggested that participants exhibited relatively high levels of both gratitude and self-directed learning. Similarly, the current study aligns with findings from a mixed-method investigation conducted among Filipino high school students, which evaluated the effectiveness of gratitude intervention on learning outcomes. The results indicated that there was a higher level of autonomous motivation, controlled motivation, and cognitive engagement among the students from the intervention group as compared to the students from the control group. Qualitative results also indicated that gratitude practices promoted learning through the creation of social support, positive thinking, motivation, and a sense of reciprocity with relevant others (Valdez et al., 2022).

The results obtained from the present study are similar to those of Noland et al. (2017) who explored the impact of using short gratitude exercises in the classroom. Their research showed that the incorporation of gratitude and positive listening had a significant increase in learning outcomes. Statistically significant differences were observed between groups in terms of organization [$F(1, 103) = 4.27, P < .05$], motivation [$F(1, 103) = 8.75, P < .01$], mastery [$F(1, 103) = 14.69, P < .01$], and practice and feedback [$F(1, 103) = 4.86, P < .05$]. Students also said that their happiness with their classes and curriculum and with their overall well-being increased, especially when their classes and curriculum included regular practice with gratitude.

Additionally, the results are consistent with those of Nawa and Yamagishi (2021), who investigated the impact of an online gratitude journaling exercise for university students on academic motivation. No baseline association for gratitude and motivation was found, but a significant positive association was found after the intervention. The findings from the statistical analysis suggested that those who practiced gratitude journaling had improved academic motivation, suggesting that such practices could have a positive effect on motivational outcomes over time. Findings from the qualitative study offer important insight into how the intervention led to the above results. Students said that gratitude

fostered positive emotions, lessened academic stress, was a regular self-regulation tool, increased the sense of reciprocal responsibility, increased self-awareness, and changed challenges and difficulties at school into opportunities for growth. In one study, for instance, participants reported decreased levels of anxiety before seminars and increased concentration following the practice of gratitude. With these experiences, the authors illustrate that gratitude had a meaningful impact on emotional functioning, as well as on study habits and self-responsibility for learning, bringing about significant quantitative improvements in those areas. As a result of quantitative and qualitative findings being integrated, the overall findings of the study can now be given more confidence.

The results have significant implications for nursing education. Gratitude-based interventions could be an effective and low-cost intervention to foster positive learning behaviors and values of the profession, including humility, empathy, accountability, and resilience. These are essential qualities for good nursing and closely relate to the provision of caring and patient care. The present study was not based on the direct measurement of clinical performance or patient outcomes, however. Thus any inferences or impact on patient care should only be considered theoretical and not a conclusion based on empirical evidence. Future research is warranted to determine if there is a correlation between gratitude and professional attitude and measurable improvement in clinical competence and quality of care.

Conclusion

The Gratitude Intervention Program effected improvements with students' study habits, self-responsibility for learning and gratitude. Students in the experimental group had significantly higher posttest and follow-up scores compared to the control group, thus showing immediate and long-term positive changes in positive learning behaviors as a result of the intervention. Qualitative results also indicated that gratitude practices were beneficial in decreasing the academic stress of students, their self-awareness and their attitude towards learning as a responsibility.

The results in this study indicate that the interventions based on gratitude can be used as an effective, low-cost education measure to enhance emotional well-being, learning responsibility and good study habits among nursing students. The integration of structured gratitude practice into the nursing curriculum could support teaching and learning of important values for the nursing profession including humility, empathy, accountability, and resilience. Although the present study did not directly assess clinical performance or patient outcomes, these attributes are

theoretically relevant to the development of compassionate and patient-centered nursing practice. Future research using more rigorous designs and longer follow-up periods is recommended to confirm these findings and to examine whether improvements in gratitude and learning behaviors translate into enhanced professional competence and quality of patient care.

Limitations

There are some limitations of the study. Behavioral change is a complex and multi-faceted process and a change in study habits in a short-term intervention may not lead to total behavioral change. The purpose of the present study was to provide some improvement, not total behavioral change. Furthermore, factors other than the students' experiences were not controlled for, and could have influenced results, including students' personal experiences, family, health status, interpersonal relationships, and peer influences. It was, however, assumed that these factors remained relatively constant during the intervention period.

Participants were recruited from two different nursing colleges, with one institution assigned as the experimental site and the other as the control site. Although baseline comparability was established using demographic and pretest variables, unmeasured institutional characteristics such as teaching style, academic culture, and student support systems which may have influenced the results.

The nonrandomized design also limits causal inference and introduces the possibility of selection bias. Furthermore, the control group did not receive an attention-matched intervention, making it impossible to exclude the influence of nonspecific effects such as increased contact time, group interaction, and researcher attention.

Finally, the use of self-report measures may have introduced social desirability and response biases, and the study was conducted in selected nursing colleges in India, which may limit the generalizability of the findings.

Implications of the study

- Nursing curriculum can incorporate gratitude as a powerful tool which will help the students to cultivate their own gratitude, and can improve their learning experiences.
- Nurse educators should be trained on soft skills, mindfulness based training to understand themselves and their students during teaching learning process.
- Nurse-led gratitude interventions can improve patients' physical, mental, social, and spiritual health.

- Nursing administrators can take the lead to develop different mindfulness and positive psychology intervention programs for Nurses and their well-being.
- Gratitude-based programs can be integrated into student support services, mentorship programs, and wellbeing initiatives for the benefit of a positive learning environment.
- Randomized controlled designs, larger multisite samples and longer follow-up times should be used in future studies to validate these results.
- Gratitude is a researchable area which can be linked with varied experiences of an individual and can be explored to identify various benefits associated with the growth of an individual.

Suggestions

Gratitude can be seen as a component of social relationships which will have a strong impact on the experiences, thoughts and actions people have in relation to their health care. The implementation of a Development of Gratitude Program for nursing students can be carried out in every institution, so that students' welfare can increase. Through evidence-based practice, evidence for the positive effects of gratitude practice on physical, mental and psychological wellbeing can be demonstrated.

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