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Effect of Head Nurses' Self-Sacrificial Leadership Educational Program on staff Nurses' Affective Commitment and Knowledge Sharing Behavior

Hoda Reda Abdou[1], Amina Hassan Ahmed[2] & Heba Rabea Hagrass[3]
[1.] Lecturer of Nursing Administration, Faculty of Nursing, Mansoura University, Egypt.
[2.] Lecturer of Nursing Administration, Faculty of Nursing, Mansoura University, Egypt.
[3.] Lecturer of Nursing Administration, Faculty of Nursing, Mansoura University, Egypt.

Abstract
Back ground: A leader that demonstrates self-sacrificing leadership is one who is prepared to assume a variety of risks and losses in order to benefit both the organization as a whole and their subordinates. **Aim:** The study aimed to investigate the effect of head nurses' self-sacrificial leadership educational program on nurses' affective commitment and knowledge sharing behavior. **Setting:** The study was done at Mansoura University Children Hospital. **Research design**: A Quazi experimental research design was utilized. **Subjects:** Convenience sample of (41 head nurses) and (82 staff nurses) was used. **Tools:** Four tools were used namely: Self-sacrificial leadership knowledge questionnaire, self-sacrificial leadership self-assessment scale, work place affective commitment scale and knowledge sharing behavior scale. **Results:** Head nurses' knowledge of self-sacrificial leadership improved from pre (80.5 %) unsatisfactory to (90.2%) satisfactory immediately post program. Also, staff nurses' affective commitment improved from pre (60.34±5.33) to immediately post (105.54±4.32) and follow up after 3 months (103.96±5.52) while knowledge sharing behavior scores improved from pre (30.17±4.63) to (57.87±4.87) immediately post program and (57.07±5.59) post 3 months of the program implementation. **Conclusion:** Self-sacrificial leadership educational program had a positive effect on head nurses through increasing their knowledge, self-sacrificing behaviors. Also, staff nurses' affective commitment and knowledge sharing behavior scores increased post program implementation. **Recommendation:** Applying self-sacrificial leadership educational program to all head nurses and nursing managers in other hospitals.

Keywords: Affective Commitment, Knowledge Sharing & Self-Sacrificial Leadership

Introduction
In light of the ongoing difficulties and upheavals that organizations have seen in recent years, new management dynamics are necessary, with human resources serving as the primary differentiator. However, the health care system is becoming more and more competitive, and in order to succeed, one must understand how crucial leadership is to organizational success **(Semedo, et al., 2019).** By putting various policies and activities into place, managers and leaders can play a significant role in fostering employee trust **(Han, et al., 2019).**

Self-sacrificial leadership is a new leadership style where managers put the needs of their employees and the organization as a whole ahead of their own personal interests **(Liu, et al., 2021).** It entails giving up or delaying one's own interests and privileges in order to promote the welfare of the group and risking all to get the best outcome for followers **(Yang, et al., 2020).**

There is a strong correlation between self-sacrificing leadership and other leadership styles like transformational and servant leadership. However, it still possesses certain distinctive qualities. For instance, self-sacrificial leadership primarily consists of doing what is best for followers, as opposed to transformational leadership, which focuses on inspiring followers to dedicate themselves to the organization's mission and, consequently, doing what is best for the organization **(Mostafa & Bottomley, 2020).** Furthermore, self-sacrificial leadership "goes one step beyond" servant leadership in that it entails not only taking into account the needs of others but also having the willingness and ability to bear personal consequences **(Chen, et al., 2021).**

Self-sacrificial leadership is based on the belief in facilitating employees to work cohesively towards achieving organizational objectives **(Yang, et al., 2020).** Self-sacrificial leadership promotes a solid rapport with staff members through good communication, understanding, and good corporate citizenship **(Jungert, et al., 2013).** It encourages development, peace, and a sense of community among employees. Employees feel secure and have great faith that management will handle any unfair behavior, discrimination, or harassment against them because they perceive that the organization and supervisors have their best interests at heart when self-sacrificial leadership is demonstrated **(Newman, et al., 2019).**

Additionally, by consistently putting their needs first and gaining their respect, self-sacrificial leadership fosters compassion and trust among staff members (**Rubel Rimi, et al., 2018)**. The leader's self-sacrifice can be transformed into a greater commitment to the team and a greater commitment to the work. The leader's self-sacrifice can lead to more team involvement and more work commitment that will help to achieve organizational commitment **(Raza Zaidi & Siddiqui, 2021).** The degree to which employees identify with and participate in a particular organization is known as organizational commitment. Since it predicts job satisfaction, organizational effectiveness and efficiency, absenteeism, and turnover among health professionals, it is a crucial component for healthcare organizations to take into account **(Fantahun, et al., 2023).**

Affective, continuance, and normative commitment are the three commitment kinds that can be used to analyze organizational commitment **(Al-Dossary, 2022).** Employee emotional engagement with an organization's mission is explained by affective commitment **(Alqudah, et al., 2022).** Affective commitment is more valuable to the organization than both types of normative and continuous commitment because it involves emotional factors. Employee loyalty and respect for job prospects are largely influenced by their emotional attachment to the organization **(Ahmed, et al., 2017).**

An employee's emotional or psychological attachment to the organization's progress is known as affective commitment, and it is shown by their moral support, acceptance of the organization's principles, and will to work for it **(Alqudah Carballo-Penela & Ruzo-Sanmartín, 2022).** Affectively committed nurses will work with satisfaction and enjoy in their position within the organization. Affectively committed nurses are inclined to assist others in order to benefit not only themselves but also their colleagues and organizations. The readiness to exchange knowledge in order to acquire new skills is one of the helpful actions exhibited by nurses **(Jo & Joo, 2011).** Nurses that exhibit great affective commitment will be highly conscious that the organization owns their knowledge as well **(Han, et al., 2010).**

Self-sacrificial leaders creating work conditions wherever nurses' sense permitted to clarify their thoughts and sharing their knowledge. Knowledge is a source or ability that permits employees as well as organizations to improve education in addition to decision-making via management of knowledge. Knowledge sharing behavior is the transmission, spreading, as well as interchanges of ideas, skills, experience, in addition to valued data from a nurse to another in the organization **(Zhao, et al., 2020).**

Knowledge sharing in health care setting is the explanation as well as distribution of latest health data to workers, decision-makers, besides additional shareholders through shared communication boards. It is an interaction and communication activity between all employees in organization that is mutually useful to one another through interchanging opinions, ideas, or facts that is possessed **(Pu, et al., 2022).** Also, in nursing, knowledge has been described as the community repetition of expressive ledges created in the framework of a community and present in the form of usually shared languages. Hospitals change communication methods to improve knowledge among a group of persons. It also inspires others with comparable backgrounds and comforts to share their involvements **(Elsayed, et al., 2022).**

Knowledge is classified into two types; explicit and tacit. Explicit knowledge; it is well organized and easier to access and used at any time through accessing external sources such as databases or libraries. Tacit knowledge is hard to be transferred, since it is secreted in the mind, thus, it is hard for nurses to transfer it easily, nurses need to be included in the everyday work and to have the intentional readiness to share it **(Chua, et al., 2023).** The process of knowledge sharing is divided into two parts: donating and collecting. The willingness of healthcare professionals in organizations to impart and share their knowledge with others through conversation and listening in order to increase self-awareness and speed up problem-solving is known as knowledge donation. The information recipient must encourage colleagues to share their intellectual capital and consult them by observing, listening, or practicing from both internal and external sources **(Ata, et al., 2019).**

Knowledge sharing behavior is essential as well one of the best ways to improve knowledge management practices in the organizations. Management of knowledge is the method of producing, allocating, expending, in addition to handling the knowledge and data of an association. Knowledge sharing can be simply understood as a managing behavior in the association that intents to disseminate information and knowledge. Typically, this occurs in different shapes as conversation, demonstrations, teaching, in addition to several others **(Raudeliuniene & Matar, 2022).** Knowledge sharing behavior improves the societal wealth, which is the distribution of knowledge among nurses; this creates a respectable impression on the organization in addition to its reputation. It helps to create a maintainable competitive benefit to the organization **(Mehmood, et al., 2022).**

Significance of the study

Head nurses are nurse managers who are seen as essential to accomplishing organizational objectives in each hospital unit **(Rathore & Sharma, 2023).** An increase in the population means a higher need for health care services. The foundation of nursing care in any healthcare facility is its staff nurses. Leaders have a significant impact on how followers think, feel, and act in ways that help them succeed **(Farahnak, et al., 2020).** Self-sacrificial leadership is a leadership style, in which leaders sacrifice themselves for common goals and interests to encourage team members to act in the best interests of the leader and help the team through more work. When team members feel connected to the leader, they can add more psychological meaning and sense of identity to their work. Self-sacrificial leaders create the reciprocity norm, which is typically based on following the group's guidelines and being eager to assist others which strength commitment to teamwork **(Liu, et al., 2022).**

Gaining an organizational competitive edge requires affective commitment. Increased affective commitment might foster a selfless attitude that encourages colleagues to share information **(Harjanti, et al., 2023).** Among the different leadership styles, self-sacrificial leadership and employee knowledge sharing are comparable in that they prioritize the needs of the organization over individual interests. Self-sacrificial leadership fosters a climate of trust, which in turn improves employee knowledge sharing for the benefit of the group and goal attainment **(Sabrina, 2023).** Knowledge sharing practices among nurses have significant implications for the quality and efficiency of healthcare services and represent a critical factor for the organization's success **(Wu, et al., 2022).**

Programs for head nurses to strengthen their leadership skills are frequently required. Continuous education and training opportunities for head nurses are crucial because when nurse managers and leaders are not fully prepared to take on the task of managing a unit or a nursing staff, it can result in high staff nurse turnover and poor patient satisfaction due to a lack of organizational commitment and knowledge sharing. So, the current study aimed to investigate the effect of head nurses' self-sacrificial leadership educational program on nurses' affective commitment and knowledge sharing behavior.

Aim of the study

This study aimed to investigate the effect of head nurses' self-sacrificial leadership educational program on nurses' affective commitment and knowledge sharing behavior.

Research Hypothesis

H1: The knowledge score of a head nurse about self-sacrificial leadership improves after implementing the educational program and during the follow-up periods

H2: Self-assessment test scores of head nurses about self-sacrificing leadership improves after implementing the educational program and during the follow-up periods

H3: Staff nurse's test scores of affective commitment improves after implementing the educational program and during the follow-up periods

H4: Staff nurse's test scores of knowledge sharing improves after implementing the educational program and during the follow-up periods

Methods

Design:

A Quazi experimental research design was utilized in the study.

Setting:

The study was done at Mansoura University Children Hospital that delivers an extensive spectrum of health services at Delta Region. Mansoura University Children Hospital occupied with 365 beds and 18 departments and classified into two main building as below:

First building contains: three floors: **Ground Floor** that contains out patients, pharmacy, magnetic resonance imaging, blood bank and its laboratory. **First floor** contains dialysis department, laboratory department, radiology department. **Second floor** contains investigations related to different department. **Lastly third floor** contains: medical intensive care unit, surgical intensive care unit, surgical operation department rooms.

Second building contains eight floors. **The ground floor** which contains: emergency department. **First floor** contains: administrative offices. **Second floor** contains: cardiology department, endocrine and diabetic department, blood disorders department. **Third floor** contains: nutrition and infectious diseases department, pediatric surgery department. **Fourth floor contains**: GIT department, genetic department. Fifth floor contains: department (5) and (6), immunology department, bone marrow transplantation department respectively. **Sixth floor contains**: neonate intensive care unit, economic department. **Seventh floor contains**: nephrology department, neurology department, and cardiac surgery department**. Lastly eighth floor** contains: nursing and physicians residence.

Participants:

Convenience sample from all in patient departments was utilized which includes all available head nurses (n=41) and staff nurses (n=82) at time of data collection.

Inclusion criteria for head nurses are:
- Agree to participate in the study.
- Head nurses have at least one year of job experience.

For staff nurses:
- Agree to involve in the study.
- Staff nurses have at least one year of job experience in the current job.

Tools of data collection:
A self-administered questionnaire was used to collect personal characteristics about the following age, sex, marital status, educational level and years of experience in addition to the following four tools.

Tool (I): Self-Sacrificial Leadership Knowledge Questionnaire:
It designed by the researchers based on relevant literature review **(Ruyi & Lirong, 2017) & (Liu, Li & Xu, 2022).** It aimed to assess study head nurses pre-post knowledge about self-sacrificial leadership. It consisted of 30 statements in the form of true and false. Statements are grouped under four dimensions, as the following: Self-sacrificial leadership concept (4 statements), dimension of self-sacrificial leadership (6 statements), characteristics of self-sacrificial leaders (11 statements), and benefits of self-sacrificial leadership (9 statements).

Scoring system
Each statement response was considered as (2) for right answer and (1) for false answer. These scores were converting into percent score. The total level of knowledge considered satisfactory if the percent score was 60% or more and unsatisfactory if less than 60%.

Tool (II): Self-Sacrificial Leadership Self-Assessment Scale:
This tool developed by **De Cremer & van Knippenberg, (2004)** to assess head nurses' self-sacrificing behaviors. The scale consisted of 5 items using a 5-point Likert scale ranged from strongly disagree (1) to strongly agree (5). Higher score indicated high self-sacrificing behaviors whereas lower score indicated low self-sacrificing behaviors.

Tool III: Work place Affective Commitment Scale:
This tool developed by **Perreira, Morin, Hebert, Gillet, Houle & Berta, (2018)** to assess nurses' work place affective commitment (emotional attachment and identification with the organization). The scale consisted of 24 items divided into (8) domain (3) items per each one as following: Affective commitment to organization, affective commitment to supervisor, affective commitment to co-workers, affective commitment to patients, affective commitment to profession, affective commitment to work, affective commitment to tasks and affective commitment to career using a five-point scale ranged from strongly disagree (1) to strongly agree (5). Higher score indicated high work place affective commitment whereas lower score indicated low work place affective commitment**.**

Tool IV: Knowledge Sharing Behavior Scale (KSBS):
This tool developed by **Van den Hooff & de Leeuw van Weenen's, (2004)** to measure the level of knowledge sharing among nurses. It consisted of 14 items grouped under two dimensions: (knowledge collecting: 6 items) and (knowledge donating: 8 items). Items were rated on a 5-point response scale as follow: 1= Strongly disagree, 2 = Disagree, 3=Neutral, 4=Agree, 5= Strongly agree. Higher score indicated high knowledge sharing whereas lower score indicated low knowledge sharing**.**

Validity and Reliability
Tools of data collection was translated into Arabic, and face and content validity were verified via five experts in the field of nursing administration to evaluate the items validity as well as the entire tools as relevant, comprehensive, and appropriate. Self-Sacrificial Leadership Knowledge Questionnaire, Self-Sacrificial Leadership Self-Assessment Scale, work place Affective Commitment Scale, Knowledge Sharing Behavior Scale were tested by Cronbach's Alpha reliability and was found to be (0.857), (0.869), (0.901) and (0.873) respectively.

Pilot study
It was done on 10% of the study participants (4 head nurses) and (8 staff nurses). They were selected randomly and excluded from the study. The aim of the pilot study was to test the clarity, feasibility of the questions, identify obstacles and problems that may be encounter during data collection, test clearness of the language and to determine the time needed to fill-in questions.

Data Collection:
The study was conducted through the following four phases. All of these phases began from November 2024 to the end of April 2025.

Preparatory phase:
The period of this phase lasted around two months (from the beginning of November 2024 to the end of December 2024). Ethical approval was obtained with code no 0659 and date 28-10-2024. This phase involved review of literature related to the objectives of the studied subjects and the study aim. The study tools were modified and translated into Arabic by the researchers and tested for its face and content validity then the educational program was designed, reliability test was done and the pilot study of the data collection tools was conducted.

Implementation phase:
- The educational program was launched by the researchers. The time plan of the program implemented through one month (January 2025), the data gathered 3 days/week in the morning shift

(Sunday, Tuesday, and Wednesday). Head nurses divided into three groups. The educational program has taken 6 hours for each group distributed as the following; three sessions for each group every session (2) hours.

- In the beginning, the questionnaires were fulfilled by the studied head nurses and staff nurses before the beginning of the program. A self-sacrificial leadership knowledge questionnaire and self-sacrificial leadership self-assessment scale took about 10–15 minutes to be completed by head nurses. Besides, the work place affective commitment scale and knowledge sharing behavior scale took about 10–15 minutes to be completed by the staff nurses. – These questionnaires conducted to allow the researchers to collect a baseline assessment of studied head nurses regarding their self-sacrificial leadership knowledge and behaviors. Also, staff nurses' work place affective commitment and knowledge sharing behavior level assessed in order to compare the findings with and follow-up program tests.
- Implementation of the program sessions after the questionnaires completed, the researchers (according to the available time) implemented the program for studied head nurses. The program covered the following items: Self-sacrificial leadership concept, dimensions of self-sacrificial leadership, characteristics of self-sacrificial leaders and benefits of self-sacrificial leadership.
- At the beginning of the program sessions, there was an orientation to the program and its goals. Setting goals and providing an outline of the new subject were the first steps in every session. To make sure everyone understood, the head nurses' questions were discussed and addressed at the conclusion of each session. The researchers implemented the program using the same teaching methodologies, available resources, pertinent content, and instructional strategies for every session. Teaching strategies include role-playing, group discussions, lectures, and brainstorming. Among the teaching and learning resources were PowerPoint presentations and handout.

Evaluation phase:

Using the same format of tools as before the program's implementation, the immediate posttest was employed during this phase to evaluate the impact of the educational program.

Follow up phase:

In this phase, the researchers start to follow up after three months the proposed progress after implementing the educational program. The data collecting took place over a period of time one month (April 2025).

Statistical analysis

SPSS software was used to organize, tabulate, and statistically analyze the gathered data (Statistical Package for the Social Sciences, version 22, SPSS Inc. Chicago, IL, USA). The normality assumption was accepted. Consequently, frequency and percentage were used to describe categorical values. The mean and standard deviation were used to represent continuous variables. To examine variations in repeated measures when the variables are parametric and continuous, a two-way ANOVA test was used. The means and standard deviations of two related groups were compared pairwise using the paired t-test. When variables are ordinal, Friedman's test was used to examine differences in repeated measures. Pearson correlation coefficient test was conducted to test the association between two continuous variables. Statistically significant was considered as (p-value < 0.01 &0.05).

Ethical Considerations

The Mansoura University Faculty of Nursing's Research Ethical Committee granted ethical permission code number 0659. The hospital's responsible administrator granted formal approval to conduct the study. Every participant was made aware that their involvement in the study was entirely voluntary and that they might leave at any time. Every participant received an assurance regarding the privacy of the study sample and the confidentiality of the data acquired throughout the whole research.

Results

Table (1): Personal Characteristics of the Studied Head Nurses (n=41)

Variable	No	%
Age		
Less than 30 yrs	6	14.6
More than 30 yrs	35	85.4
Sex		
Male	3	7.3
Female	38	92.7
Marital status		
Married	38	92.7
Divorced	3	7.3
Educational level		
Bachelor degree	41	100.0
Years of experience		
5 to less than 10 years	2	4.9
10-20 years	27	65.9
More than 20 years	12	29.3

Table (2): Mean Score of Self-Sacrificial Leadership Knowledge among Studied Head Nurses Through Different Phases of Educational Program (n=41)

Self-Sacrificial Leadership Knowledge	No. items	Phases of the study			F value /p	Pairwise comparison
		Pre	Post	Follow-up		
Self-sacrificial leadership concept	4	2.15±1.35	3.61±0.54	3.51±0.67	50.643/ <0.001**	P1=<0.001** P2=<0.001** P3=0.044*
Self-sacrificial leadership dimensions	6	1.93±1.81	5.2±0.87	5.07±0.96	72.210/ <0.001**	P1=<0.001** P2=<0.001** P3=0.023
Characteristics of self-sacrificial leaders	11	4.37±2.94	9.83±1.41	9.68±1.39	78.195/ <0.001**	P1=<0.001** P2=<0.001** P3=0.083
Benefits of self-sacrificial leadership	9	2.8±2.4	7.8±1.38	7.66±1.48	71.704/ <0.001**	P1=<0.001** P2=<0.001** P3=0.057
Self-sacrificial leadership knowledge	30	11.24±4.6	26.44±3.07	25.93±3.27	77.636/ <0.001**	P1=<0.001** P2=<0.001** P3=0.008

p1: Difference between pre and post
p2: Difference between pre and post 3 months
p3: Difference between post and post 3 months
*** Highly statistically significant at p <0.01*

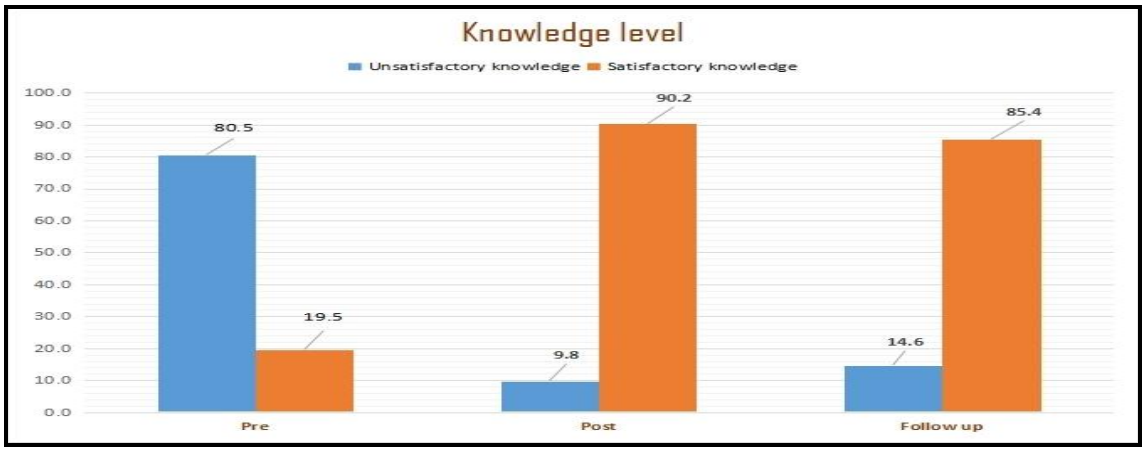

Figure (1): Levels of Self-Sacrificial Leadership Knowledge among Studied Head Nurses Through Different Phases of Educational Program (n=41)

Table (3): Mean Score of Self -Sacrificing Behaviors among Studied Head Nurses Through Different Phases of Educational Program (n=41)

Head nurses' self-sacrificing behaviors	Phases of the study			F value /p	Pairwise comparison
	Pre	Post	Follow-up		
I am willing to make personal sacrifices in the team's interest	3.2±1.12	4.76±0.49	4.68±0.52	67.725/ <0.001**	P1=<0.001** P2=<0.001** P3=0.083
I am willing to stand up for the team members' interest, even when it is at the expense of his/her own interest	3.2±1.17	4.66±0.62	4.61±0.63	64.235/ <0.001**	P1=<0.001** P2=<0.001** P3=0.160
My supervisor is willing to risk his/her position, if he/she believes the goals of the team can be reached that way	2.95±1.05	4.61±0.74	4.49±0.81	65.487/ <0.001**	P1=<0.001** P2=<0.001** P3=0.058
I am is always among the first to sacrifice free time, privileges, or comfort if that is important for the team's mission	3.17±1.2	4.76±0.49	4.68±0.57	68.222/ <0.001**	P1=<0.001** P2=<0.001** P3=0.083
I can always count on my supervisor to help me in times of trouble, even if it is at costs to him/her	2.66±1.09	4.46±0.6	4.37±0.73	71.704/ <0.001**	P1=<0.001** P2=<0.001** P3=0.51
Self-sacrificing behaviors	15.17±3.65	23.24±1.67	22.83±2.2	79.187/ <0.001**	P1=<0.001** P2=<0.001** P3=0.039*

p1: Difference between pre and post
p2: Difference between pre and post 3 months
p3: Difference between post and post 3 months
*** Highly statistically significant at p <0.01*

Table (4): Personal Characteristics of the Studied Staff Nurses (n=82)

Variable	No	%
Age		
20-30 yrs	61	74.4
31-40 yrs	21	25.6
Sex		
Male	20	24.4
Female	62	75.6
Marital status		
Married	71	86.6
Divorced	9	11.0
Single	2	2.4
Educational level		
Bachelor degree	36	43.9
Technical institute of nursing	42	51.2
Nursing school	4	4.9
Years of experience		
1-5	26	31.7
6-10	37	45.1
More than10 yrs	19	23.2

Table (5): Mean Score of Work Place Affective Commitment among Studied Staff Nurses Through Different Phases of Educational Program (n=82)

Nurses' work place Affective Commitment	Phases of the study			F value /p	Pairwise comparison
	Pre	Post	Follow-up		
Affective commitment to organization	9.2±2.42	13.34±1.53	13.22±1.59	135.536/ <0.001**	P1=<0.001** P2=<0.001** P3=0.86
Affective commitment to supervisor	9.74±2.43	14.29±1.05	14.10±1.18	155.355/ <0.001**	P1=<0.001** P2=<0.001** P3=0.034*
Affective commitment to co worker	6.88±2.21	13.21±1.59	12.99±1.64	161.504/ <0.001**	P1=<0.001** P2=<0.001** P3=0.046*
Affective commitment to patient	7.96±1.9	12.82±2.13	12.57±2.18	159.506-/ <0.001**	P1=<0.001** P2=<0.001** P3=0.30*
Affective Commitment to Profession	6.49±1.46	13.12±1.57	12.95±1.65	160.932/ <0.001**	P1=<0.001** P2=<0.001** P3=0.043*
Affective Commitment to Work	5.77±0.93	12.4±1.69	12.24±1.67	160.147/ <0.001**	P1=<0.001** P2=<0.001** P3=0.27*
Affective Commitment to Tasks	6.67±1.31	13.02±1.39	12.91±1.48	160.381/ <0.001**	P1=<0.001** P2=<0.001** P3=0.28*
Affective Commitment to Career	7.63±1.28	13.32±1.59	13.13±1.69	161.504/ <0.001**	P1=<0.001** P2=<0.001** P3=0.46
Total Affective Commitment	60.34±5.33	105.54±4.32	103.96±5.52	155.597/ <0.001**	P1=<0.001** P2=<0.001** P3=0.003**

p1: Difference between pre and post
p2: Difference between pre and post 3 months
p3: Difference between post and post 3 months
*** Highly statistically significant at p <0.01*

Table (6): Mean Score of Knowledge Sharing Behavior among Studied Staff Nurses Through Different Phases of Educational Program (n=82)

Knowledge Sharing Behavior	Phases of the study			F value /p	Pairwise comparison
	Pre	Post	Follow-up		
Knowledge donating	14.62±2.8	24.96±2.58	24.77±2.79	160.932/ <0.001**	P1=<0.001** P2=<0.001** P3=0.48
Knowledge collecting	15.55±2.4	32.9±3.03	32.3±3.66	159.850/ <0.001**	P1=<0.001** P2=<0.001** P3=0.11
Total knowledge sharing behavior	30.17±4.63	57.87±4.87	57.07±5.59	158.375/ <0.001**	P1=<0.001** P2=<0.001** P3=0.006

p1: Difference between pre and post
p2: Difference between pre and post 3 months
p3: Difference between post and post 3 months
** *Highly statistically significant at p <0.01*

Table (7): Correlation between Head Nurses' Self-Sacrificial Leadership Knowledge, Self -Sacrificing Behaviors, Staff Nurses' Affective Commitment and Knowledge Sharing Behavior Through Different Phases of Educational Program

Variable	Head nurses ' total knowledge regarding Self-Sacrificial Leadership					
	Pre program		Post program		Follow up	
	r	p	r	p	r	p
Self -Sacrificing Behaviors	0.758	<0.001**	0.700	<0.001**	0.769	<0.001**
Affective Commitment	0.208	0.031*	0.385*	0.013**	0.372	0.017*
Knowledge Sharing Behavior	0.254	0.021*	0.514	0.001**	0.294	0.007**

Table (1): Personal Characteristics of the Studied Head Nurses. This table shows that majority of the studied head nurses (85.4%) aged more than 30 years. Most of the studied head nurses (92.7 %) are female and married. Concerning years of experience, above two thirds of the studied head nurses (65.9%) have experience from 10- 20 years.

Table (2): Mean Score of Self-Sacrificial Leadership Knowledge among Studied Head Nurses Through Different Phases of Educational Program. This table shows that the highest domain is characteristics of self-sacrificial leaders that increases from (4.37±2.94) pre the program to (86.4%9.83±1.41) immediately post program. While self-sacrificial leadership dimensions is the lowest domain that increases from (1.93±1.81) pre the program to (5.2±0.87) immediately post program. Moreover, there is highly statistically significant improvement in all domains related to self-sacrificial leadership knowledge immediately post program and post 3 months of the program implementation.

Figure (1): Levels of Self-Sacrificial Leadership Knowledge among Studied Head Nurses Through Different Phases of Educational Program. This figure shows that most of the studied head nurses (90.2%) have satisfactory level immediately post-program. Also, there is highly statistically significant improvement in level of self-sacrificial leadership knowledge from pre (80.5 %) unsatisfactory to (90.2%) satisfactory immediately post program.

Table (3): Mean Score of Self -Sacrificing Behaviors among Studied Head Nurses Through Different Phases of Educational Program. This table shows that there is highly statistically significant improvement in the self-assessed self-sacrificing leadership behavior pre (15.17±3.65) and immediately post program (23.24±1.67) and post 3 months of the program implementation (22.83±2.2).

Table (4): Personal Characteristics of the Studied Staff Nurses. This table shows that about three quarters of the studied staff nurses (74.4%) aged from 20 to 30 years old and majority of the studied nurses (86.6%) are married while half of them (51.2%) have technical institute of nursing. Concerning years of experience, (45.1%) of nurses have 6-10 years of experience.

Table (5): Mean Score of Work Place Affective Commitment among Studied Staff Nurses Through Different Phases of Educational Program. This table shows that there is statistically significant improvement in all domains of staff nurses' workplace affective commitment and in the

total mean scores of affective commitment from pre (60.34±5.33) to immediately post (105.54±4.32) and follow up after 3 months (103.96±5.52).

Table (6): Mean Score of Knowledge Sharing Behavior among Studied Staff Nurses Through Different Phases of Educational Program. This table shows that there is highly statistically significant improvement in staff nurses' knowledge sharing behavior mean score from pre (30.17±4.63) to (57.87±4.87) immediately post program and (57.07±5.59) post 3 months of the program implementation.

Table (7): Correlation Between Head Nurses' Self-Sacrificial Leadership Knowledge, Self-Sacrificing Behaviors, Staff Nurses' Affective Commitment and Knowledge Sharing Behavior Through Different Phases of Educational Program. This table shows that there is statistically significant positive correlation between head nurses' self-sacrificial leadership knowledge, self -sacrificing behaviors, Staff nurses' affective commitment and knowledge sharing behavior in all program phases.

Discussion:

Subordinates are said to be influenced by the leader's self-sacrificing behaviors and the degree to which they are representational of the group. The aim of the current study was to investigate the effect of head nurses' self-sacrificial leadership educational program on nurses' affective commitment and knowledge sharing behavior. This study discovered that there was highly statistically significant improvement in all domains related to self-sacrificial leadership knowledge immediately post program and post 3 months of the program implementation.

These findings highlight the progressive impact of the self-sacrificial leadership educational program in improving the head nurses' knowledge regarding self-sacrificial leadership, supporting hypothesis 1. This may be due to head nurses understand that self-sacrifice is frequently required to guarantee excellent patient care and team well-being in difficult healthcare contexts.

This realization drives them to learn more about this leadership style. Furthermore, no educational program about self-sacrificial leadership was launched, and it is the first educational program implemented in the hospital. Also, these improvements occurred after the intervention due to the effectiveness of the program and using different teaching methods. Also, there is a significant improvement in all domains related to self-sacrificial leadership knowledge.

The results are congruent with **Emam, et al., (2024),** who found that head nurses' leadership knowledge and practices were positively impacted by a 360-degree feedback-based leadership development program. This suggests that such programs can be extremely important in improving leadership skills in healthcare settings. Head nurses who practice superior leadership are likely to improve team relations and create a collaborative work atmosphere that is necessary for providing patients with high-quality care.

The results as well supported by **Lavoie-Tremblay et al., (2024)** who indicated that the leadership program can enhance the leadership competencies, well-being, and job satisfaction of participating nurses and healthcare leaders. Additionally, the study's numerous leadership dimensions showed notable improvements, indicating that structured programs such as the one in place can help close the leadership training gap that frequently exists in the nursing field.

These findings also support those of **Wang, et al., (2022),** who found that the participants' leadership comprehension improved with time, indicating that the knowledge acquired was not only temporary. Additionally, leadership development programs improved hospital leaders' understanding of management and leadership and had a beneficial impact on their personal capabilities, according to **Gulati, et al., (2020).**

As regard mean score of self -sacrificing behaviors among studied head nurses through different phases of educational program. The finding revealed that there was highly statistically significant improvement in the self-assessed self-sacrificing leadership behavior immediately post program and post 3 months of the program implementation. This finding supports hypothesis 2. This may be due to the leadership educational program gives leaders a safe space to reflect on their actions, raises their knowledge of their priorities, and helps them see the advantages of modeling self-sacrificing behavior that results in success overall.

This result is in line with the findings of **Najeeb & Siddiqui, (2020),** who claimed that a self-sacrificial leader increases organizational effectiveness by elevating subordinates' feelings of gratitude and obligation by prioritizing their needs over his own. Additionally, **Liu, et al., (2024)** contended that leaders with high levels of competence need to be able and inclined to act selflessly when the success of their organization depends on the interests of all members.

Regarding mean score of total work place affective commitment among studied nurses through different phases of educational program, the current study results revealed that there was highly statistically significant improvement in nurses' work place affective commitment through all phases of the educational program. This finding supports

hypothesis 3. This may be due to self-sacrificial leaders strive to activate value, make the organizational mission more important to nurses, and put the needs and shared vision of the group ahead of their own interests. A nurse's sense of meaning and purpose in their profession may be enhanced by this. As a result, nurses exhibit a high level of affective commitment, or the emotional bond and identity they have with their organization.

In this regard, **Nawaz & Qayyum, (2022)** discovered that a leader's self-sacrifice can inspire followers to put the good of the organization ahead of their own interests and cultivate subordinates' sense of self and loyalty to the company. Furthermore, **Chen et al., (2020)** found that when leaders sacrifice themselves for the well-being of others, it activates positive reciprocation from their subordinates, including increased work engagement and affective commitment.

Moreover, **Bai et al., (2023)** pointed out that leaders who put their subordinates ' needs first and are prepared to treat them as equals foster an emotional bond between them and their organization. This is supported by **Xu, et al., (2022),** who claimed that self-sacrificial leadership has a highly favorable effect on staff members' commitment, inventiveness, and participation in the creative process.

Concerning mean score of knowledge sharing behavior among studied nurses through different phases of educational program, the current study results revealed that there was highly statistically significant improvement in level of nurses' knowledge sharing behavior through all phases of the program implementation. This finding supports hypothesis 4. This may be due to nurses feel more obligated to reciprocate by sharing their own knowledge and expertise because of the greater empathy and camaraderie that comes from sharing sacrifices. Additionally, leaders who put themselves at risk for the good of the organization may encourage nurses to think ethically and to feel more trust and communication, which encourages knowledge sharing.

These results are consistent with those of **Saeed et al., (2022),** who demonstrated that leaders have a significant relationship with knowledge sharing behaviors and play a crucial role in the organization's performance by encouraging subordinates to share information. According to **Su, et al.,& Xu, (2022),** self-sacrificial leaders cultivate positive relationships with their subordinates, which in turn promote information sharing among staff members by instilling a strong feeling of duty to support their leaders or the organization as a whole.

Regarding correlation between head nurses' self-sacrificial leadership knowledge, self -sacrificing behaviors, nurses' affective commitment and knowledge sharing behavior through different phases of educational program. The results of the study revealed that there was statistically significant positive correlation between head nurses' self-sacrificial leadership knowledge, self -sacrificing behaviors, nurses' affective commitment and knowledge sharing behavior in all program phases.

This could be explained by the fact that head nurses' self-sacrificing actions were implemented as a result of their self-sacrificing leadership knowledge. The affective commitment and knowledge-sharing behavior of nurses are positively impacted by these actions. Nurses are more likely to be emotionally invested in their profession and prepared to impart their knowledge to others when they perceive that their leaders value, support, and motivate them. Consequently, providing high-quality care is the end outcome.

This is in harmony with **Kwame & Petrucka, (2024)** who asserted that providing high-quality healthcare and guaranteeing favorable results for patients, employees, and institutions depend heavily on competent nursing leadership. Additionally, **Rahmadani, et al., (2020)** indicated that the positive correlation between knowledge scores and self-assessed leadership suggests that a deeper comprehension of leadership concepts corresponds to a greater level of confidence in one's leadership qualities.

Conclusion

According to the findings of the current study, head nurses' knowledge score and levels of self-sacrificial leadership were low pre-program implementation while, they had higher scores with statistically significant differences post program implementation, also self-sacrificial leadership educational program had a positive effect on staff nurses' affective commitment and knowledge sharing behavior.

Recommendation

Based on the findings of the current study, the following recommendations were suggested:

- Applying self-sacrificial leadership educational program to all head nurses and nursing managers in other hospitals.
- Participation of all head nurses in workshops aimed at improving their understanding and proficiency of their self-sacrificial leadership.
- Setting up efficient processes and frameworks by hospital administrators to identify and advance head nurses who exhibit self-sacrificing behavior, and they can help head nurses cultivate this style through leadership development activities.

- Changing hospital policies to place more emphasis on the use of self-sacrificial leadership coaching behaviors as a means of assisting head nurses in a range of roles.
- Encouraging the development of positive relationships between leaders and subordinates by hospital administrators via giving leaders pertinent training and enhancing their knowledge and capacity to build positive relationships with subordinates.
- Fostering self-sacrificial leadership by head nurses, developing empathy, providing support and recognition and active listing and open dialogues in a dynamic workplace that fosters staff affective commitment and knowledge sharing.
- **Further research** is needed to study the effect of head nurses' self-sacrificial leadership educational program on staff nurses' affective commitment and knowledge sharing behavior in different settings.

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