

The Effect of Educational program about Negotiation for Head Nurses on Problem Solving Skills

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Abstract:

Background: In modern healthcare systems, the negotiation program had a great effect in problem-solving skills which are essential for saving time and effort, enhancing productivity, and fostering innovation. **Aim of the study:** To assess the effect of an educational program on negotiation for head nurses and its impact on their problem-solving skills. **Research design:** A quasi-experimental research design was adopted. **Setting:** The study was conducted across all inpatient units in the medical and surgical departments at Benha University Hospital. **Subjects:** The study included all head nurses (n=61) working in the designated departments. **Data Collection Tools:** Three tools were utilized: Tool I) Negotiation Knowledge Questionnaire, Tool II) Self-Report Negotiation Skills Questionnaire, and Tool III) Problem Solving Inventory. **Results:** There was a statistically significant improvement in head nurses' knowledge and skills related to negotiation during the post-program and follow-up phases compared to the pre-program phase. Additionally, a marked enhancement in problem-solving levels was observed, with 77.1% and 68.8% of head nurses demonstrating high problem-solving skills in the post and follow-up phases respectively, compared to only 7.9% at baseline. **Conclusion:** The negotiation program had a great effect in problem solving skills for head nurses and also there was positive correlation between head nurses' negotiation knowledge, negotiation skills, and problem-solving abilities throughout the program phases. **Recommendations:** Implementing continuous in-service training and educational programs to refresh and enhance head nurses' knowledge and skills in negotiation, while also reinforcing problem-solving strategies within the negotiation process.

Keywords: Educational program, Head nurses, Negotiation skills, Problem solving skills

Introduction:

In today's healthcare landscape, negotiation has become a fundamental pillar for institutional success and professional advancement. Head nurses, who constitute a significant proportion of the healthcare workforce, are constantly confronted with complex patient care challenges. As a result, negotiation skills are not merely desirable, they are essential. The ability to negotiate effectively is particularly valuable in resolving conflicts and addressing critical organizational issues with minimal resource

expenditure and maximum efficiency (Roy et al., 2025).

Negotiation is understood as a structured strategic process aimed at reaching mutually acceptable resolutions. It involves a dynamic interaction in which both parties engage in dialogue, seeking to influence one another while maintaining satisfaction with the outcome. When conducted effectively, negotiation prevents disputes, mitigates contradictions, and fosters collaborative decision-making. Each party strives to assert and justify their position, hoping to reach a

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favorable agreement through rational persuasion and compromise (**Samosir, 2025**).

The negotiation process encompasses several interrelated dimensions that contribute to its effectiveness. These include planning, negotiator style, rational thinking, goal orientation, communication proficiency, self-expression, option generation, and solution implementation. Prior to any negotiation, head nurses must thoughtfully prepare by anticipating relevant topics and researching the issues at hand to ensure informed participation (**Yu et al., 2025**). During the negotiation itself, a composed and respectful style is essential; head nurses must listen attentively, refrain from interrupting, and genuinely consider opposing viewpoints to foster a constructive exchange (**Batu, 2025**).

Rationality and common sense must guide their conduct, ensuring that emotional expression is appropriate and strategically timed (**Chen, 2025**). A clear goal should always be defined, and communication must be precise, supported by confident body language and intentional eye contact to reinforce credibility (**Selvi & Serin, 2025**).

Further, head nurses must express their positions with clarity and determination, maintaining coherence and consistency throughout the dialogue. Presenting viable, compromise-based solutions is equally vital, and alternative strategies should be prepared in advance to allow flexibility during discussions (**Hoque, 2025**). Ultimately, successful negotiation culminates in solution implementation, where the nurse must convincingly articulate the rationale behind their proposals, identify shared interests, and work collaboratively toward a practical resolution (**Roy et al., 2025**).

Negotiation is woven into the daily functions of head nurses, as nearly every decision-making scenario involves some form of discussion and consensus-building. These

professionals must negotiate regularly with patients and their families, nursing staff, physicians, and healthcare administrators to ensure effective coordination and patient-centered care (**Omoniyi, 2025**). Through negotiation, responsibilities can be clarified, ambiguities resolved, and positive interpersonal relationships cultivated, all of which are crucial for achieving healthcare objectives efficiently and harmoniously (**Lourenço & Paiva, 2025; Foncubierta et al., 2025**).

Closely linked to negotiation is the skill of problem solving, which is defined as the ability to acquire and apply knowledge to resolve challenges. This competency demands critical thinking, timely decision-making, and the capacity to generate practical solutions under pressure (**Tomas & Paulo, 2025**). For head nurses, such skills are indispensable, enabling them to address unpredictable clinical situations and lead their teams effectively. When consistently applied, problem-solving techniques enhance patient outcomes and elevate the standard of nursing practice (**Selçuk et al., 2025**).

The problem-solving process is structured and methodical, typically following five sequential stages: general orientation, problem definition, generation of alternatives, decision-making, and evaluation. At the orientation stage, head nurses must possess confidence in their capacity to manage daily issues and maintain cognitive organization in high-pressure environments (**Doustinouri et al., 2025**). Clearly defining the problem is the next step, which requires a comprehensive understanding of the issue and input from all involved parties (**Akolbire et al., 2025**). Brainstorming diverse solutions encourages inclusivity and ensures multiple perspectives are considered. Decision-making follows, where the best option, or a hybrid of options, is chosen to satisfy the needs of both staff and

patients (**Kudo et al., 2025**). Finally, evaluating the chosen solution includes implementing the action plan, monitoring progress, and verifying that the selected course is the most effective. Communication of the final decision is also a critical component of this phase (**Ali et al., 2025**).

As healthcare systems increasingly emphasize quality of care, head nurses are expected to refine their clinical judgment and leadership performance. This growing demand underscores the necessity of strengthening their negotiation and problem-solving abilities, which are grounded in a synthesis of knowledge, practical expertise, and professional attitudes (**Doustinouri et al., 2025**).

Indeed, negotiation and problem-solving are deeply interconnected skills vital to the leadership role of head nurses. Effective negotiation empowers them to advocate for their teams, mediate conflicts, and secure agreements that support both organizational efficiency and high-quality care. At the same time, strong problem-solving abilities enable them to diagnose issues, identify root causes, and formulate viable solutions to persistent challenges, such as staffing shortages, workflow bottlenecks, or care delivery inconsistencies. By mastering both competencies, head nurses are equipped to lead with authority, respond to crises with confidence, and cultivate a collaborative, high-performing environment that promotes optimal patient outcomes (**Odieli & Okeke, 2025**).

Significance of the study

Negotiation is a fundamental and routine aspect of professional life, particularly within healthcare settings. For head nurses, possessing a comprehensive understanding of negotiation concepts and acquiring practical negotiation skills is critical. These competencies enable them to interact effectively with others and navigate the

complexities of problem-solving in diverse, high-pressure, and often recurring situations throughout the workday. Based on the investigator's observations during supervisory rounds, it was evident that head nurses frequently encounter a wide range of managerial challenges. These include staff absenteeism, high turnover rates, interpersonal conflicts, ineffective communication, workforce shortages, and suboptimal staff performance (**Hoque, 2025**).

To address such issues, head nurses must rely on structured negotiation techniques and sound problem-solving strategies. Equipping them with these tools through an educational intervention is vital, as it fosters their ability to make informed decisions and respond proactively to workplace dilemmas. Implementing a structured educational program focused on negotiation empowers head nurses to enhance their competencies, apply theoretical knowledge in real-life scenarios, and integrate personal values, beliefs, and experiences into professional actions. In light of this need, the current study was conducted to assess the effectiveness of a negotiation-focused educational program for head nurses and to examine its impact on their problem-solving capabilities.

Aim of the study:

This research aimed to assess the effect of an educational program about negotiation on the problem-solving skills of head nurses.

Research Hypotheses

It is hypothesized that the implementation of an educational program on negotiation will result in a statistically significant improvement in head nurses' knowledge and skills related to negotiation. Furthermore, it was anticipated that this program would positively impact their problem-solving abilities.

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Subjects and method:

Research design

A quasi-experimental design was employed to fulfill the objective of the current research.

Setting

The research was conducted across all inpatient units within the medical departments and surgical departments at Benha University Hospital (40 units).

Subjects

The sample included all available head nurses and their assistants ($n = 61$) present during the data collection period and working within the designated research setting. This included 46 head nurses from medical units and 15 from surgical units.

Tools of data collection:

To achieve the objectives of the research, three rigorously constructed and validated tools were utilized.

Tool I: Negotiation Knowledge Questionnaire. It was meticulously developed by the researchers following a thorough review of relevant literature (Moghaddam et al., 2019; Rees & Kopelman, 2019; Tosanloo et al., 2019; Nilsson & Svensson, 2023). This tool aimed to measure the cognitive understanding of negotiation among head nurses and consisted of two sections. The first section captured essential sociodemographic and professional characteristics, including age, gender, marital status, unit of assignment, educational attainment, years of experience, and prior participation in negotiation or problem-solving training programs. The second section comprised 38 structured items covering four conceptual domains: the definition and concept of negotiation (5 items), negotiation strategies (10 items), negotiation elements (12 items), and core principles of negotiation (11 items).

Scoring System: Each correct response was

assigned a score of (1), while incorrect answers were scored as (0), yielding a total possible score ranging from 0 to 38. Participants attaining a score of 60% or higher (i.e., 23–38) were categorized as having satisfactory knowledge, whereas those scoring below 60% (i.e., 0–22) were classified as having unsatisfactory knowledge (Nilsson & Svensson, 2023).

Tool II: Self-Report Negotiation Skills Questionnaire. It was formulated by the researchers in alignment with established frameworks and previous validated scales in the negotiation literature (Van et al., 2008; Mamatoğlu & Keskin, 2019; Keune, 2020). This self-assessment instrument was designed to capture the frequency and consistency of negotiation-related behaviors as perceived by the head nurses themselves. The tool consisted of 50 items, organized across nine key domains: planning (4 items), negotiator style (8 items), rationality and common sense (6 items), sensitivity to opponents (6 items), goal orientation (6 items), effective communication (6 items), assertive self-expression (4 items), solution generation (6 items), and implementation of solutions (4 items).

Scoring System: Responses were recorded using a 3-point Likert scale: “Always” (3), “Sometimes” (2), and “Rarely” (1), yielding a possible total score between 50 and 150. A score equal to or greater than 90 ($\geq 60\%$) was interpreted as indicative of a satisfactory negotiation skill level, while scores ranging from 50 to 89 signified an unsatisfactory level (Keune, et al., 2020).

Tool III: Problem Solving Inventory (PSI). It was originally developed by El Ghoul (2017) and subsequently revised by the researchers to better suit the target population and research context. This self-rating scale was intended to evaluate the head nurses’ perceived competencies in problem-

solving across five cognitive-behavioral dimensions: general orientation (7 items), problem definition (6 items), generation of alternatives (7 items), decision-making (7 items), and solution evaluation (8 items). **Scoring System:** Participants responded using a 3-point Likert scale, with “Always” scored as (3), “Sometimes” as (2), and “Rarely” as (1). The aggregate score could range from 35 to 105. Scores between 79 and 105 ($\geq 75\%$) reflected a high level of problem-solving ability, scores between 62 and 78 ($60 < 75\%$) indicated a moderate level, and scores ranging from 35 to 61 ($< 60\%$) were interpreted as a low level of problem-solving skill (El Ghoul, 2017).

Administrative design:

To initiate the administrative process, an official correspondence was sent from the Dean of the Faculty of Nursing, Benha University to the Director of Benha University Hospital, requesting cooperation and permission to conduct the research. Approval was then obtained from departmental leadership within the hospital to facilitate data collection and program implementation. The researchers arranged meetings with head nurses in both the medical and surgical departments to explain the purpose and value of the research. These discussions were also used to develop a mutually convenient schedule for data gathering and program delivery, aligning with the operational needs of each department to ensure smooth coordination and staff engagement.

Content Validity:

To ensure the tools' relevance and alignment with the research objectives, content validity was established through expert evaluation. A panel of five experts in Nursing Administration reviewed the instruments for clarity, relevance, comprehensiveness, and simplicity. The panel consisted of three Assistant Professors from the Faculty of Nursing at Benha University, one Professor from Tanta University, and one Assistant

Professor also from Tanta University. Their constructive feedback was incorporated, leading to the final version of the tools.

Reliability Testing:

The internal consistency of the tools was verified using Cronbach's Alpha coefficient. The results confirmed a high level of reliability for each instrument, as shown in the table below:

Table (A): Reliability of Data Collection Tools

Data collection tool	Cronbach's Alpha
Negotiation knowledge Questionnaire	0.948
Self- Report Negotiation Skills Questionnaire	0.979
Problem Solving Inventory	0.968

Ethical considerations:

Prior to initiating the research, ethical clearance was secured from the Scientific Research Ethics Committee at the Faculty of Nursing, Benha University, under approval code REC-NA-D7. Each participant was thoroughly informed about the nature and objectives of the research, including the procedures involved, the expected duration, potential advantages, and the assurance of confidentiality. Voluntary participation was emphasized, and written informed consent was obtained from all respondents. Participants were made aware of their right to withdraw from the research at any stage without facing any form of penalty. All information collected was handled with strict confidentiality and was used exclusively for academic and research purposes.

Pilot study:

A pilot research was conducted in January 2024 to evaluate the clarity, applicability, and feasibility of the data collection tools. Six head nurses, representing 10% of the total sample, were randomly selected to participate in the

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pilot. The purpose was to assess whether the tools were understandable and to determine the approximate time required to complete them. It was found that participants needed between 20 to 30 minutes to complete all instruments. As no major modifications were required, the participants in the pilot research were included in the final sample of the main research.

Fieldwork:

The fieldwork phase encompassed four sequential stages: assessment, planning, implementation, and evaluation.

Assessment Phase:

Baseline data collection was conducted from February to March 2024, prior to the implementation of the educational program. The aim was to assess the participants' existing knowledge and skills related to negotiation and problem solving. The researchers maintained a regular presence in the medical and surgical inpatient units of Benha University Hospital, attending three morning shifts per week to facilitate data collection.

At the outset, participants were welcomed and provided with a brief overview of the research objectives and procedures. Data were collected in a designated hospital classroom using the pre-approved tools. The completion time for each questionnaire ranged between 10 and 20 minutes. All materials were available in Arabic to ensure ease of understanding and accurate response.

Planning Phase:

This phase was carried out over a two-month period from April to May 2024. Based on the findings derived from the pre-program assessment and an extensive review of relevant literature, the researchers developed a negotiation education program tailored to the educational needs of head nurses. The content of the program was constructed in Arabic in printed format, incorporating comprehensive topics

designed to enhance both knowledge and practical negotiation skills.

To ensure the program's effectiveness, a range of instructional strategies, teaching methods, media, and evaluation techniques were thoughtfully selected. These elements were aligned with the identified learning needs of head nurses and aimed to fulfill the program's cognitive and behavioral objectives. Teaching strategies included lectures, group discussions, and brainstorming sessions. Instructional materials, such as handouts prepared by the researchers, were distributed to all participants on the first day of the program. Each session was supported with relevant content and appropriate teaching methods, designed to optimize the learning experience and engagement of the participants.

Implementation Phase:

The implementation phase took place between May and June 2024. During this period, the researchers conducted the educational sessions three days per week and maintained a consistent presence across all relevant inpatient units. To ensure effective delivery and interaction, the participating head nurses were divided into five groups, each comprising approximately twelve individuals. This grouping allowed the sessions to remain manageable, interactive, and responsive to individual and group learning needs.

The negotiation educational program was composed of six structured sessions, each lasting approximately two hours. The sessions were delivered in accordance with participants' work schedules and hospital conditions to ensure minimal disruption to clinical duties. Instructional time also included interactive discussions and structured feedback, with the researchers taking into account the ongoing progress and participation of each group. At the start of every session, the researchers provided a brief orientation regarding the session's aims and

objectives. Participants were encouraged to share suggestions, raise questions, and reflect on the material covered. The content of the sessions included foundational and advanced concepts of negotiation, covering definitions, processes, essential skills, styles, potential barriers, and effective strategies. Feedback was consistently provided, and participants were invited to engage in dialogue aimed at practical application of negotiation techniques in their work environment.

Evaluation Phase:

The evaluation phase commenced in June 2024, beginning with the immediate post-program assessment to evaluate the direct impact of the educational intervention. The same tools used during the pre-assessment phase were administered again to measure any improvements in knowledge, negotiation skills, and problem-solving abilities. This stage provided measurable data on the short-term effectiveness of the program. A follow-up evaluation was conducted in October 2024 to assess the sustainability of outcomes and determine whether the educational gains were retained over time. During this phase, questionnaires were redistributed to the participating head nurses across their respective inpatient units. This approach ensured the continued relevance and reliability of the findings and allowed for comparison across different time intervals.

Statistical analysis

Data collected during the research were carefully checked for completeness and accuracy before entry into the analysis software. Statistical analysis was conducted using SPSS version 22. Descriptive statistics—including frequencies and percentages—were utilized to summarize demographic and categorical data. To explore relationships between key variables, Pearson's correlation coefficient (r) was employed. For comparisons across groups,

Analysis of Variance (ANOVA) was applied to assess significant differences between mean scores. A p -value greater than 0.05 indicated no statistical significance, whereas a p -value of 0.05 or less denoted a statistically significant result. Findings with a p -value ≤ 0.001 were interpreted as highly significant.

Results:

Table (1) shows that the majority of head nurses (90.2%) were aged between 30 and less than 40 years, with a mean \pm SD of 34.01 ± 3.86 years. Approximately three-quarters (75.4%) of the head nurses worked in medical units. In addition, the majority of head nurses were female (80.3%) and married (82.0%). Regarding educational qualifications, less than two-thirds (65.5%) of head nurses held a bachelor's degree in nursing. Concerning years of experience, about three-quarters (75.4%) had between 10 and less than 20 years of experience, with a mean \pm SD of 11.90 ± 3.21 years. All head nurses (100.0%) had not previously attended any training courses related to negotiation, and more than three-quarters (78.7%) had not attended any training courses related to problem-solving skills.

Figure (1) clarifies that the majority of head nurses (90.2%) had unsatisfactory knowledge regarding negotiation during the pre-program phase. This improved to 96.7% and 90.2% of head nurses having satisfactory knowledge during the immediate post-program and follow-up phases, respectively.

Table (2) illustrates that there was a highly statistically significant improvement in negotiation knowledge at the immediate post-program and follow-up phases compared with the pre-program phase. The mean \pm SD of total negotiation knowledge was 14.65 ± 3.36 at the pre-program phase, which improved to 36.08 ± 1.77 at the post-program phase, and slightly decreased to

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32.85 ± 2.03 at the follow-up phase, while remaining higher than the pre-program level.

Figure (2) indicates that more than three-quarters of head nurses (77.0%) had unsatisfactory negotiation skill levels at the pre-program phase. This improved to 90.2% and 85.2% of head nurses having satisfactory negotiation skill levels at the immediate post-program and follow-up phases, respectively.

Table (3) shows that there was a highly statistically significant improvement in negotiation skills at the immediate post-program and follow-up phases compared with the pre-program phase. The mean ± SD of total negotiation skills was 89.63 ± 3.76 at the pre-program phase, which improved to 144.34 ± 9.73 at the post-program phase and slightly decreased to 141.96 ± 10.68 at the follow-up phase, while remaining higher than the pre-program level.

Figure (3) clarifies that more than two-thirds of head nurses (70.5%) had low problem-solving skill levels at the pre-

program phase. This improved to 77.0% of head nurses having high problem-solving skill levels at the immediate post-program phase, and slightly decreased to 68.8% at the follow-up phase.

Table (4) illustrates that there was a highly statistically significant improvement in problem-solving skills at the immediate post-program and follow-up phases compared with the pre-program phase. The mean ± SD of total problem-solving skills was 65.18 ± 2.36 at the pre-program phase, which improved to 101.02 ± 6.62 at the post-program phase, and slightly decreased to 95.14 ± 8.01 at the follow-up phase, while remaining higher than the pre-program level.

Table (5) reveals that there was a highly statistically significant correlation between the total negotiation knowledge of head nurses and their total negotiation skills and problem-solving skills at the immediate post-program phase compared with the pre-program phase.

Table (1): Frequency distribution of the studied head nurses according to their personal characteristic (n=61).

Personal characteristics	No.	%
Age		
>30 years	3	4.9
30>40 years	55	90.2
≤40years	3	4.9
Age (Mean± SD) 34.01±3.86		
Unit		
Medical	46	75.4
Surgical	15	24.6
Gender		
Male	12	19.7
Female	49	80.3
Marital status		
Unmarried	11	18.0
Married	50	82.0
Educational qualification		
Nursing diploma	2	3.3
Technical institute of nursing	15	24.6
Bachelor of nursing	40	65.5
Post-graduation studies	4	6.6
Years of experience		
>10 years	14	23.0
10>20 years	46	75.4
≤20years	1	1.6
Years of experience (Mean± SD) 11.90±3.21		
Attending training about negotiation		
Yes	0	0.0
No	61	100.0
Attending training about problem solving		
Yes	13	21.3
No	48	78.7

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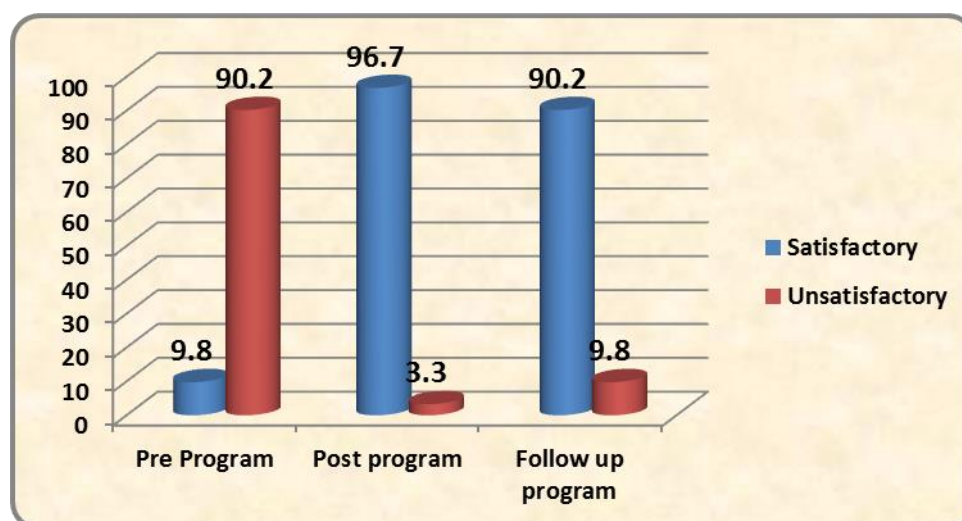


Figure (1): Head nurses' total knowledge levels regarding negotiation throughout program phases (n=61).

Table (2): Total mean and standard deviation of head nurses' knowledge regarding negotiation dimensions throughout program phases (n=61).

Negotiation knowledge dimensions	Max scores	Pre program	Post program	Follow up program	F test	P value
Concept of negotiation	5	1.34±0.81	4.67±0.87	4.37±0.96	26.231	0.000**
strategies of negotiation	10	2.95±1.08	9.52±0.69	8.72±0.96	40.705	0.000**
Elements of negotiation	12	4.62±1.26	11.50±0.62	10.29±0.82	25.507	0.000**
Principles of negotiation	11	5.73±1.63	10.37±0.58	9.45±1.04	27.192	0.000**
Total knowledge	38	14.65±3.36	36.08±1.77	32.85±2.03	31.829	0.000**

(** A highly statistical significant difference $P \leq 0.001$)

(F =A Nova test)

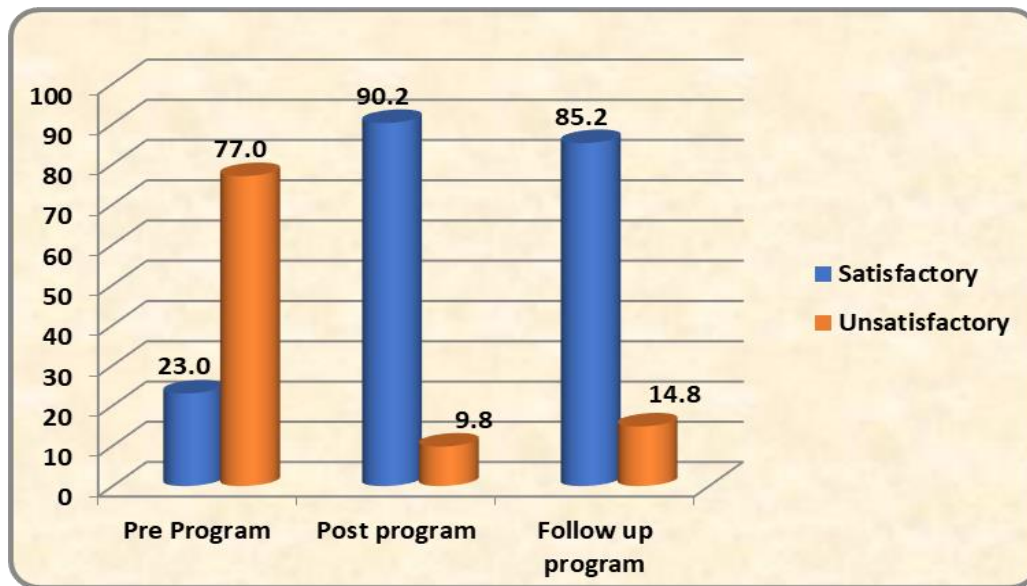


Figure (2): Negotiation total skills levels of head nurses throughout program phases (n=61).

Table (3): Total mean and standard deviation of head nurses' skills regarding negotiation throughout program phases

Negotiation skills dimensions	Max scores	Pre program	Post program	Follow up program	F test	P value
Planning	12	7.44±1.34	11.59±0.80	11.31±1.05	27.628	0.000**
Negotiator style	24	13.86±1.51	23.11±1.56	22.40±2.17	31.141	0.000**
Rationality and common sense	18	10.36±1.27	17.29±1.21	16.98±1.38	55.252	0.000**
Sensitivity towards opponents	18	10.39±1.32	17.36±1.23	17.09±1.39	45.253	0.000**
Goal orientation	18	11.34±1.76	17.34±1.19	17.18±1.27	34.123	0.000**
Effective communication	18	10.57±1.54	17.32±1.20	17.13±0.129	48.690	0.000**
Self-expression for sure	12	7.29±1.13	11.54±0.84	11.44±0.94	37.012	0.000**
Choosing solutions	18	10.78±1.34	17.32±1.20	17.13±1.34	44.803	0.000**
Implement solutions	12	7.57±1.28	11.44±0.90	11.27±1.03	339.214	0.000**
Total skills	150	89.63±3.76	144.34±9.73	141.96±10.68	56.248	0.000**

(** A highly statistical significant difference $P \leq 0.001$)

(F =A Nova test)

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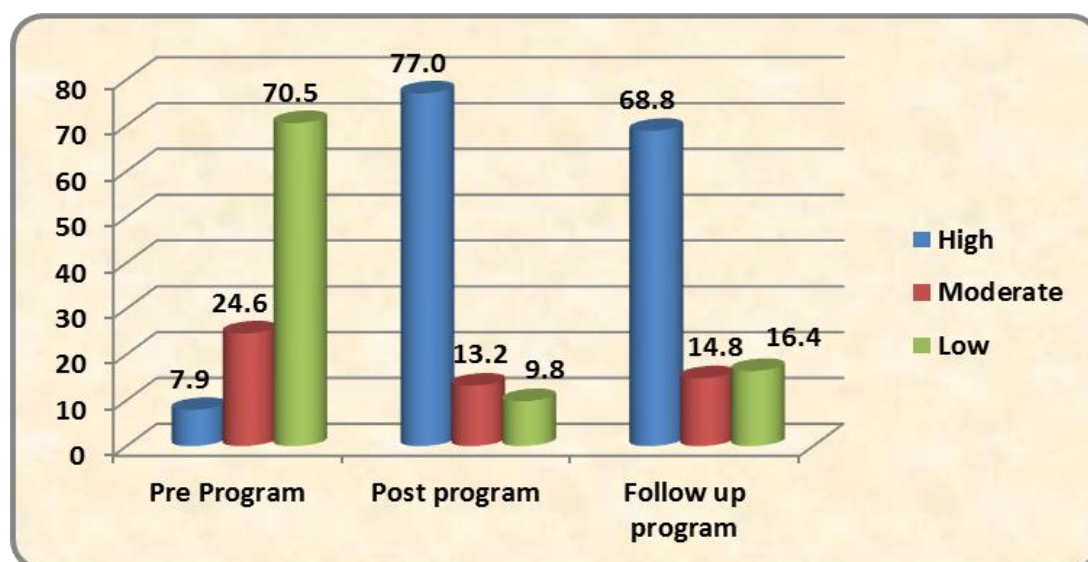


Figure (3): Problem solving total skills level among head nurses throughout program phase (n=61).

Table (4): Total mean and standard deviation of head nurses' problem solving skills throughout program phase.

Problem dimensions	solv	Max scores	Pre program	Post program	Follow up program	F test	P value
General orientation		21	13.75±2.27	20.24±1.38	19.16±1.94	20.408	0.000**
Define of the problem		18	10.98±1.69	17.29±1.14	16.24±1.72	29.398	0.000**
Generating alternatives		21	12.54±1.60	20.34±1.31	18.98±2.10	36.762	0.000**
Make decision		21	12.60±1.44	20.14±1.49	19.04±1.99	36.603	0.000**
Evaluation		24	15.29±1.54	22.96±1.61	21.70±2.11	32.545	0.000**
Total problem solving		105	65.18±2.36	101.02±6.62	95.14±8.01	59.855	0.000**

(** A highly statistical significant difference $P \leq 0.001$)

(F =A Nova test)

Table (5): Correlation matrix among head nurses' knowledge and skills regarding negotiation and problem solving throughout the program phases

Variables		Knowledge pre-program	Knowledge post program	Knowledge follow up program	Skills pre program	Skills post program	Skills follow up program	Problem solving pre program	Problem solving post program	Problem solving follow up program
Total knowledge	Pearson Correlation	-----	-----	-----	0.239	0.737**	0.143	0.119	0.004	0.033
	Sig. (2-tailed)	-----	-----	-----	0.063	0.000	0.272	0.360	0.973	0.799
Total skills	Pearson Correlation	0.142	0.722**	0.113	-----	-----	-----	0.257*	0.887**	0.255*
	Sig. (2-tailed)	0.276	0.000	0.384	-----	-----	-----	0.046	0.000	0.047
Total problem solving	Pearson Correlation	0.119	0.968**	0.126	0.257*	0.917**	0.019	-----	-----	-----
	Sig. (2-tailed)	0.360	0.000	0.334	0.046	0.000	0.882	-----	-----	-----
**. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).										

Discussion

Negotiation is widely acknowledged as a vital and evolving skill across a broad range of professions, gaining increasing recognition for its impact on organizational success. Within the healthcare sector, this competency takes on an even more crucial role, contributing significantly to both institutional advancement and operational effectiveness. Mastery of negotiation empowers individuals to build consensus, resolve disputes, explore alternative solutions, allocate resources efficiently, exchange innovative ideas, and support collaborative decision-making. In the demanding environment of healthcare, head nurses in particular must possess proficient negotiation capabilities to navigate daily operational hurdles, resolve interpersonal conflicts, and ensure smooth team functioning (Batu et al., 2025).

The present research examined the demographic and professional characteristics of head nurses, revealing that significant portion were aged between 30 and 40 years, with the average age calculated at 34.01

years. Most respondents were assigned to medical units, representing roughly three-quarters of the sample. In terms of personal background, the majority were female and married. When assessing educational attainment, fewer than two-thirds of the head nurses had earned a bachelor's degree in nursing. Regarding years of experience, approximately 75% of the participants had worked in the nursing field for a duration ranging from 10 to 20 years. Interestingly, none of the head nurses had ever participated in formal negotiation training, and more than three-quarters had not received any instruction related to problem-solving strategies.

In evaluating the overall knowledge of negotiation across different stages of the training program, the research found that prior to the intervention, most head nurses displayed inadequate knowledge levels. However, the immediate post-program assessment showed a significant increase in understanding, and this improvement was

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maintained during the follow-up evaluation. From the perspective of the researchers, the initially low levels of negotiation knowledge might stem from the absence of structured training, minimal exposure to negotiation frameworks, or a general lack of emphasis on such soft skills in continuing professional development curricula. These conclusions echo findings from a research conducted in Egypt titled "Effect of Negotiation Skills Training Program on Head Nurses' Knowledge and Behavior", which reported similar deficiencies in pre-program knowledge among head nurses (**Moustafa et al., 2025**).

The current results are also consistent with the findings of another research conducted in Tanta, titled "Effect of Educational Program on Head Nurses' Negotiation Skills for Conflict Resolution among Nurses in Intensive Care Units". That research similarly documented limited familiarity with negotiation principles among head nurses before the program commenced (**Shabaan et al., 2021**).

After the educational intervention was carried out, this research observed a notable enhancement in negotiation knowledge among the head nurses. A majority of participants reached a satisfactory level of understanding in both the immediate and follow-up assessments. From the researchers' viewpoint, this improvement underscores the value and impact of targeted educational programs in equipping head nurses with the necessary competencies to manage conflict, foster collaboration, and improve overall leadership effectiveness. These post-intervention outcomes are in line with those reported by **Moustafa et al., (2025)**, reinforcing the conclusion that structured training positively influences negotiation knowledge among nursing leaders (**Moustafa et al., 2025**).

In addition, the research revealed a statistically significant rise in both the mean scores and standard deviations of negotiation knowledge across different phases of the educational program. This upward trend strongly suggests that the intervention successfully bridged existing knowledge gaps, raised awareness, and enhanced the cognitive grasp of negotiation concepts among participating head nurses. From the researchers' perspective, this measurable improvement reflects a notable enhancement in professional competency, empowering head nurses to more effectively achieve both institutional objectives and personal career goals.

These findings align with those of **Ebraheam & El Shazly, (2019)**, who conducted a research titled "Effect of Negotiation on Collaboration between Nurses and Physicians at South Valley University Hospital". Their results similarly demonstrated a significant increase in participants' mean knowledge scores following an educational intervention focused on negotiation.

When examining negotiation skills specifically, the current research identified that over three-quarters of head nurses had unsatisfactory skill levels prior to the program. However, a substantial improvement was observed during the post-intervention assessments, with most participants attaining satisfactory performance levels. This progress emphasizes the practical value of the program in not only enriching theoretical understanding but also transforming that knowledge into applicable negotiation skills suited to real-life clinical scenarios.

According to the researchers, several factors may have contributed to this positive transformation. Chief among them was the continuous, formative feedback integrated

throughout the sessions, which was delivered within an engaging and supportive learning environment. This approach likely fostered participants' confidence and facilitated more effective application of negotiation techniques. Furthermore, the repeated exposure to negotiation principles, combined with structured opportunities to practice and refine those skills, may have produced a cumulative learning effect. This iterative learning process helped participants internalize negotiation strategies, resulting in sustained and observable skill improvements.

These conclusions are in agreement with the results of **Shabaan et al., (2021)**, who noted that head nurses displayed limited negotiation skills in the pre-program phase, followed by significant improvement after participation in an educational program. Likewise, **Moustafa et al., (2025)** confirmed that head nurses experienced marked enhancement in their negotiation abilities after undergoing structured training.

In terms of statistical analysis, the current research found a highly significant increase in the total mean and standard deviation of negotiation skill scores during the post-program and follow-up phases, compared to the baseline pre-program phase. From the researchers' viewpoint, this outcome reinforces the importance of comprehensive, skill-oriented training programs. These programs not only convey essential theoretical content but also offer practical exercises, real-life case scenarios, and interactive learning methods that deepen understanding and improve long-term retention and application.

Further support for these outcomes comes from the work of **Ebraheam & El Shazly, (2019)**, who also reported gains in negotiation skills among head nurses following a comparable training initiative. Similarly, the consistency of these results with the findings

of **Moustafa et al., (2025)** provides additional validation, as their research also documented statistically significant enhancements in mean negotiation skill scores post-intervention.

On the other hand, the present findings contrast with those reported by **Fekry & Moustafa, (2019)**, who carried out research in Mansoura focusing on the "Effect of Negotiation Skills Training Program on Head Nurses' Time Management." Their research did not find significant improvements in negotiation skill scores, possibly due to contextual differences, varying program designs, or methodological factors that distinguished their intervention from the current research.

Regarding problem-solving skills, the research discovered that over two-thirds of head nurses displayed poor problem-solving abilities at the initial pre-program assessment. However, this trend shifted dramatically following the educational program. At both the immediate post-intervention and follow-up assessments, more than three-quarters of the head nurses demonstrated high levels of problem-solving competence. This marked improvement underscores the broader impact of the training, which not only enhanced negotiation capabilities but also supported the development of essential critical thinking and decision-making skills needed for effective leadership in healthcare settings.

From the perspective of the researchers, the notable enhancement in head nurses' problem-solving abilities can be attributed to the structured and targeted design of the educational program. The program was likely crafted to foster critical thinking, sound decision-making, and analytical reasoning, all of which are fundamental leadership skills. These competencies are especially critical in healthcare settings where head nurses are frequently required to navigate complex

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issues such as staffing shortages, patient care dilemmas, and interdisciplinary conflicts. The educational intervention probably included case-based learning modules, scenario analysis, group problem-solving tasks, and structured frameworks that helped participants systematically assess and address workplace challenges with greater clarity and confidence.

These observations align with the results reported by **Kusakli & Sönmez, (2024)**, who conducted a randomized controlled trial in Türkiye titled "The Effect of Problem-Solving and Decision-Making Education on Problem-Solving and Decision-Making Skills of Nurse Managers." Their findings showed that nurse managers who underwent structured training achieved significantly higher problem-solving skill levels, reinforcing the effectiveness of such educational models in nursing leadership development.

In contrast, the current research's findings differ from those of **Wijaya & Insih, (2024)**, who carried out a research in Indonesia titled "Development of Problem-Based Learning Collaborative (PBL-C) Physics E-Worksheet to Improve Student Problem-Solving and Collaboration Skills." Their research revealed that participants showed minimal improvement in overall problem-solving abilities during the post-program phases. This discrepancy may reflect differences in research populations, educational content, or implementation strategies.

With respect to statistical outcomes, the present research demonstrated a highly significant increase in both the total mean and standard deviation of problem-solving skills scores across program phases. From the researchers' point of view, this suggests that the intervention was successful in advancing both the cognitive understanding and practical application of problem-solving strategies

among head nurses. The structured nature of the program, featuring clear instructional goals, interactive exercises, and reflection opportunities, likely played a pivotal role in this development.

These results are consistent with the findings of **Bariyyah, (2021)**, who conducted research in Indonesia titled "Problem-Solving Skills: Essential Skills Challenges for the 21st Century Graduates." That research similarly found high post-program scores and variability in participants' problem-solving abilities, supporting the conclusion that education-centered interventions significantly enhance such skills.

When examining the correlation between knowledge and practical skills related to negotiation and problem-solving, the present research revealed a highly statistically significant relationship between head nurses' negotiation knowledge and their overall negotiation and problem-solving performance during the immediate post-program phase. According to the researchers, this indicates that enhancing the theoretical foundations of negotiation empowers head nurses to more confidently and effectively apply these principles in real-life, complex problem-solving situations.

When equipped with a deep understanding of key negotiation components, such as active listening, mutual interest identification, and conflict resolution, head nurses are better prepared to manage workplace issues, engage in collaborative decision-making, and implement effective solutions.

These findings are supported by the research of **Moustafa et al., (2025)**, who concluded that there was a very strong correlation between head nurses' negotiation knowledge and their applied negotiation and problem-solving skills in the post-intervention phases. Their recommendation further

validates the idea that theoretical knowledge significantly enhances practical performance.

Conversely, the present research's conclusions diverge from those of **Ali & Hamed, (2024)**, who conducted a research, in Iraq titled "Negotiation Strategies and Their Effect on Organizational Success: Analytical Research in the Iraqi Ministry of Industry and Minerals." Their findings showed no statistically significant correlation between negotiation knowledge and problem-solving skills among participants, suggesting that contextual and organizational factors may influence the translation of theoretical learning into practical ability.

Conclusion:

In conclusion, the results of the current research demonstrate that the educational program had a significant positive effect on enhancing head nurses' knowledge and skills related to negotiation. This improvement was evident both immediately after the program and at the three-month follow-up, compared to the pre-program phase. The research also showed a clear improvement in head nurses' problem-solving skills during the immediate post-program and follow-up phases when compared to their initial performance.

Furthermore, a strong statistically significant positive correlation was found between head nurses' total negotiation knowledge, their negotiation skills, and their problem-solving abilities at the immediate post-program phase. This indicates that increasing theoretical knowledge in negotiation positively influences the development of practical negotiation and problem-solving competencies.

Recommendations:

- Continuous professional development programs be implemented and supported to

strengthen head nurses' competencies in negotiation and problem-solving.

- Encouraging a collaborative work environment, where open communication and shared decision-making are promoted, allowing head nurses to regularly apply and refine their negotiation and problem-solving skills in real clinical situations.
- Regular in-service training and workshops on negotiation and problem-solving should be integrated into the professional development plans for nursing staff, ensuring that these competencies are continuously reinforced and applied in clinical settings.
- Exploring how improved negotiation and problem-solving skills among head nurses influence patient care quality, safety, and overall healthcare outcomes.

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تأثير برنامج تعليمي عن التفاوض لرؤساء التمريض على مهاراتهم في حل المشكلات

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تُعدّ مهارات التفاوض من العناصر الجوهرية في بيئة العمل داخل أنظمة الرعاية الصحية الحديثة، حيث أظهرت البرامج التدريبية المعنية بالتفاوض تأثيرًا ملحوظًا في تطوير مهارات حل المشكلات لدى رؤساء التمريض حيث من خلالها يتم تسهيل اتخاذ القرارات بشكل أكثر فعالية، مما يؤدي إلى توفير الوقت والجهد، وزيادة الكفاءة التشغيلية، فضلاً عن تعزيز بيئة الابتكار. هدفت الدراسة إلى تقييم تأثير برنامج تعليمي عن التفاوض لدى رؤساء التمريض على مهاراتهم في حل المشكلات. **تصميم البحث:** تم استخدام التصميم الوصفي الإرتباطي. **مكان البحث:** أجريت الدراسة في جميع وحدات المرضى الداخليين في الأقسام الطبية والجراحية بمستشفى بنها الجامعي. **العينة:** شملت الدراسة جميع رؤساء التمريض (عدد 61) العاملين في الأقسام المعنية. **أدوات جمع البيانات:** استُخدمت ثلاث أدوات الأداة الأولى: استبيان معرفة التفاوض، الأداة الثانية: استبيان مهارات التفاوض الذاتي، الأداة الثالثة مقياس حل المشكلات. **النتائج:** كشفت النتائج أن الاغلبية من (٩٦,٧ %) رؤساء التمريض الذين شملتهم الدراسة لديهم مستويات عالية من المعرفة تجاة التفاوض ، أكثر من نصف (٧٧,١ %) رؤساء التمريض الذين شملتهم الدراسة لديهم مستويات عالية من مهارات التفاوض وأكثر من نصف (٥٢,٣ %) رؤساء التمريض الذين شملتهم الدراسة لديهم مستويات عالية من مهارات حل المشكلات في مرحلتي ما بعد البرنامج والمتابعة على التوالي، مقارنةً فقط في بداية البرنامج. **الاستنتاج:** أظهر برنامج التفاوض تأثيرًا كبيرًا في تنمية مهارات حل المشكلات لدى رؤساء التمريض، كما وُجدت علاقة ارتباط إيجابية بين معرفة رؤساء التمريض بالتفاوض، ومهاراتهم التفاوضية، وقدراتهم على حل المشكلات خلال مراحل البرنامج المختلفة. **التوصيات:** وأوصت الدراسة إلى تنفيذ برامج تدريبية وتعليمية مستمرة أثناء الخدمة بهدف تجديد وتعزيز معارف ومهارات رؤساء التمريض في مجال التفاوض، مع التركيز على دعم استراتيجيات حل المشكلات ضمن عملية التفاوض