Effect of Soft Skills Educational Program on Nurse Interns' Professionalism: A Pre-Experimental Study

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ABSTRACT

Background: Soft skills have recently garnered increasing attention within the nursing profession due to their critical role in enhancing interns' adaptability, communication, and professionalism. These interpersonal competencies directly affect the quality of patient care and contribute to the professional growth of nurse interns.

Aim: This study aimed to evaluate the effect of a soft skills educational program on nurse interns' professionalism.

Methods: A pre-experimental, one-group pretest–posttest design with follow-up was employed. The study included all nurse interns (n = 114) enrolled during the 2023–2024 academic year at the Faculty of Nursing, Port Said University. Data were collected using three instruments: a self-administered soft skills knowledge questionnaire, a self-reported soft skills practice assessment, and a nurse intern professionalism assessment scale.

Results: Statistically significant improvements were observed in soft skills knowledge, practice, and professionalism following program implementation. Multiple comparisons among the pretest, posttest, and follow-up scores revealed significant mean differences (p < .001). The effect size, represented by partial eta squared (η^2), was 0.994 for soft skills knowledge, 0.991 for soft skills practice, and 0.982 for professionalism, indicating a substantial effect of the intervention.

Conclusion: The soft skills training program demonstrated a considerable positive impact on nurse interns' knowledge, practice, and professional behaviors. These findings highlight the importance of integrating structured soft skills development into nursing curricula.

Recommendations: It is recommended that nursing education programs implement regular and updated soft skills training for all students. Future studies should examine the long-term effects and explore replication in varied educational and clinical contexts.

Keywords: Lifelong learning, Nurse internship, Professionalism, Professional development, Soft skills.

Introduction

In the context of rapid technological advancement and increasing global complexity, the emphasis on developing soft skills within education and healthcare has become increasingly critical. In nursing, soft skills defined as non-technical attributes such as communication, leadership, empathy, adaptability, critical thinking, and problem-solving are recognized as essential complements to clinical competencies (Dobrovolska et al., 2021). These interpersonal abilities are crucial not only for effective patient care but also for successful collaboration within multidisciplinary healthcare teams (Elkhalladi, Sefrioui, Fahssi, & Tahiri, 2024).

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Nursing interns, in particular, must integrate both hard and soft skills to navigate professional environments and meet the complex demands of clinical practice. The absence of soft skills can present considerable challenges for new graduates as they transition into the workforce (Sharma & Dayanand, 2023). McConnell, as cited by Hardie et al. (2021), defines soft skills as the interpersonal capabilities necessary for one-on-one interactions. These include emotional intelligence, active listening, self-awareness, and teamwork, which collectively contribute to the provision of holistic, patient-centered care (Moropa, Matshaka, & Makhene, 2025).

Soft skills serve as vital enablers of workplace adaptation and are integral to professional development in nursing. They support core competencies such as communication, clinical reasoning, collaborative practice, and professional conduct, all of which enhance productivity, job satisfaction, and institutional culture (Song et al., 2024). The term "soft skills" is multi-dimensional, often referred to by various labels including "key competencies," "non-technical skills," and "socioemotional abilities". These descriptors reflect a set of interactive and self-regulatory behaviors that are crucial for managing professional responsibilities and interpersonal dynamics in clinical settings (Kangune, 2022).

Despite their demonstrated importance, traditional nursing curricula have predominantly emphasized technical skills, often neglecting the intentional development of soft skills. This imbalance has resulted in a disconnect between theoretical knowledge and its practical application, particularly in areas involving patient interaction and teamwork. Structured training in soft skills has been shown to improve nurse interns' physical health, emotional well-being, and professional effectiveness outcomes that ultimately elevate the quality of patient care (Buvaneswari & Sylvia, 2018; Moropa et al., 2025).

Moreover, soft skills extend beyond the clinical domain, supporting personal development and workplace integration through professionalism, flexibility, and diplomacy (Song et al., 2024). Some studies suggest that these skills may, in certain contexts, hold more practical value than technical expertise (Jamaludin et al., 2022). Incorporating soft skills training into nursing education promotes confidence, coordination, and interpersonal proficiency key pillars of a successful nursing career (Noviani, Chong, & Tang, 2023).

Professional competence in nursing encompasses more than clinical expertise; it reflects a multidimensional understanding of professionalism, which significantly influences patient care and

team effectiveness. Fostering professionalism in nurse interns not only facilitates personal and professional growth but also contributes to improved patient satisfaction and healthcare delivery (Mohamed, El-Shahat, & Ghoneimy, 2019). This multidimensionality includes the development of soft skills, resilience, education, and psychological attributes, all of which are crucial to the formation of a professional nursing identity(Ejupi, Squires, & Skela-Savič, 2025).

Rudberg et al. (2022) argue that nursing professionalism is a foundational and complex construct that guides daily practice and interpersonal relations in healthcare settings. It comprises the knowledge, attitudes, and behaviors that uphold clinical standards and define the profession's ethical framework. Professional nurses are expected to demonstrate accountability, respect, and integrity values essential for the consistent delivery of high-quality care (Cao et al., 2023; Yao et al., 2025).

Given that nurses form the backbone of global healthcare systems, professionalism is indispensable for meeting institutional goals such as quality assurance, patient satisfaction, and public health benchmarks (Bekalu et al., 2023). Cultivating professionalism among nursing interns is thus essential to addressing current healthcare challenges and improving patient outcomes Edmealem et al., 2025).

In today's dynamic healthcare landscape, professionalism serves as a cornerstone for maintaining the safety, quality, and ethical standards of care (Ribeiro, Gasparino, & Ribeiro, 2025; Tomagova et al., 2023). This professional identity is cultivated through academic training, clinical experience, and ongoing career development (Riley, Beal, & Ponte, 2021). The internalization of professional values during this developmental process shapes the attitudes and behaviors of nurse interns, guiding their interactions and responses in clinical environments (Alshahrani et al., 2021).

Significance of the Study

Nurses constitute a cornerstone of healthcare systems globally. Nevertheless, newly graduated nurses (NGNs) frequently experience high attrition rates due to misaligned expectations and a poor understanding of the nursing role. Studies have reported turnover rates ranging from 8.8% to 37% among NGNs, a phenomenon largely attributed to the challenges of transitioning into clinical practice and insufficient professional socialization during the first year of employment (Hampton, Smeltzer, & Ross, 2020). This critical period, often marked by stress and disillusionment, highlights the need for structured interventions to support NGNs in adapting to their roles.

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The internship year serves as a vital transitional phase wherein student nurses bridge the gap between academic training and professional practice. It is during this phase that they are expected to develop core competencies, integrate theoretical knowledge with hands-on experience, and internalize the norms of professional behavior. Beyond technical proficiency, the acquisition of soft skills such as communication, teamwork, emotional intelligence, adaptability, and conflict resolution is paramount. These competencies are essential not only for delivering holistic, patient-centered care but also for fostering resilience and long-term retention in the workforce.

In the context of 21st-century healthcare, the expectation for nurses extends beyond clinical competence. Employability and professional success are increasingly contingent upon the possession of well-developed soft skills. As nurse interns transition into full-time practitioners, their ability to navigate interpersonal dynamics with patients, families, colleagues, and supervisors becomes a critical determinant of both individual effectiveness and organizational outcomes (Sherine, Ayyadurai, Mariam, & Jose, 2021). Thus, the integration of soft skills training within nursing education is no longer optional but imperative.

Despite growing recognition of their importance, soft skills remain underrepresented in traditional nursing curricula. This creates a significant research gap concerning the effectiveness of targeted educational interventions aimed at enhancing soft skills among nurse interns. Therefore, this study is designed to evaluate the impact of a structured soft skills educational program on the professionalism of nursing interns. By addressing this gap, the research aspires to contribute to the development of evidence-based strategies that support the holistic preparation of future nursing professionals.

Aim of the Study

This study aimed to evaluate the effect of a structured soft skills educational program on the professionalism among nurse interns at the Faculty of Nursing, Port Said University.

Objectives of the Study

1. Assess the nurse interns' baseline knowledge regarding soft skills before implementing the educational program.

2. Determine the initial level of soft skills among nurse interns.

3. Measure the baseline level of professionalism demonstrated by nurse interns.

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4. Design and implement a soft skills educational program tailored to the needs of nurse interns.

5. Evaluate the effect of the implemented soft skills program on the professionalism of nurse interns.

Research Hypotheses

- **Null Hypothesis (H_0):** The implementation of a soft skills educational program had no statistically significant effect on the level of professionalism among nurse interns.

- **Alternative Hypothesis (H_1):** The implementation of a soft skills educational program had a statistically significant positive effect on the level of professionalism among nurse interns.

Subjects and Method

Research Design

A pre-experimental research design was employed in this study, utilizing a one-group pre-test, post-test, and follow-up test format to evaluate the effect of the intervention.

Study Setting

The study was conducted at the Faculty of Nursing, Port Said University.

Study Subjects

The study sample consisted of a purposive sample of nurse interns enrolled at the Faculty of Nursing, Port Said University, during the 2023–2024 academic year. All available nurse interns who met the inclusion criteria and consented to participate during the data collection period were included. According to records from the Internship Affairs Office, the total number of nurse interns during the academic year was 116. Of these, two declined participation, resulting in a final sample of 114 nurse interns, including 79 females and 35 males. The use of purposive sampling was appropriate in this context, as the participants were deliberately selected based on predefined characteristics relevant to the research objectives namely, their internship status and availability (Etikan, Musa, & Alkassim, 2016).

Inclusion Criteria
Participants were selected based on the following criteria:

- Both male and female nurse interns.

- Enrollment in the Bachelor of Science in Nursing (B.Sc) program.
- Completion of the fourth academic year and commencement of the internship year at the time of the study.

Exclusion Criteria

Nurse interns were excluded from the study if they met any of the following conditions:

- Participation in any other interventions or educational programs related to soft skills during the data collection or implementation period.
- Enrollment in an accelerated nursing program.

Tools of Data Collection

Three structured tools were utilized to collect data for this study. A brief description of each tool is provided below:

Tool I: Self-Administered Soft Skills Knowledge Questionnaire

This questionnaire was developed by the researcher in Arabic, based on an extensive review of relevant literature (Dean, 2017; Laari, Anim-Boamah, & Boso, 2021; Peddle, Bearman, McKenna, & Nestel, 2019; Peltonen et al., 2020; Rao, 2018; Yassein & Abd El-Aziz, 2021). It aimed to assess the level of knowledge nurse interns possess regarding soft skills before and after the implementation of the educational program. The tool provided a practical means for evaluating educational outcomes in the domain of nursing soft skills.

The questionnaire consisted of two parts:

Part I: Personal and Academic Information

This section gathered demographic and background information on nurse interns, including age, gender, marital status, place of residence, academic performance, internship placement, and previous exposure to any educational or training programs related to soft skills. Additional data included the timing, setting, and nature (paid or unpaid) of such training, if applicable.

Part II: Knowledge Assessment

Consisted of 92 items formatted as multiple-choice and true/false questions, covering 12 core domains of soft skills: overview of soft skills (9 items), communication skills (13 items), time management (8 items), leadership skills (7 items), teamwork (9 items), planning (7 items), critical thinking (7 items), networking (5 items), negotiation skills (8 items), decision-making and problem-solving (8 items), crisis management (6 items), and creativity (5 items). These

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domains were purposefully selected to provide a comprehensive evaluation of the theoretical knowledge foundational to essential soft skills in professional nursing practice.

Scoring System

The assessment of nurse interns' knowledge was conducted using a scoring model developed by the researcher. Each correct response whether in the form of a true/false or multiple-choice item was awarded one point, while each incorrect response received zero points. The total score was calculated and expressed as a percentage. According to a predefined statistical cut-off point, a score exceeding 60% was interpreted as indicating an adequate level of knowledge regarding soft skills, whereas a score of 60% or below was considered to reflect an inadequate level of knowledge.

Tool II: Soft Skills Assessment Self-Reported Questionnaire

The Soft Skills Assessment Questionnaire, developed in Arabic and adapted from Fouad (2020) and Salah (2016), was used to evaluate the self-reported practice of soft skills among nurse interns. The tool consisted of 80 items distributed across 11 core domains: communication skills (8 items), time management (6 items), leadership (9 items), teamwork (8 items), negotiation skills (6 items), planning (6 items), decision-making and problem-solving (9 items), critical thinking (6 items), crisis management (7 items), networking (5 items), and creativity (10 items).

Scoring System

Participants rated their responses using a five-point Likert scale ranging from "strongly agree" (5) to "strongly disagree" (1). The response options were assigned numerical values: strongly agree = 5, agree = 4, neutral = 3, disagree = 2, and strongly disagree = 1. The total score was calculated by summing all item scores and dividing by the number of items to yield a mean score, which was then converted into a percentage. According to the predefined criteria, a score of ≥75% was considered indicative of a high level of soft skills, a score between >60% and <75% indicated a moderate level, and a score of <60% reflected a low level of soft skills (Fouad, 2020).

Tool III: Nurse Interns' Professionalism Assessment Scale (NIPAS)

The Nurse Interns' Professionalism Assessment Scale (NIPAS) was developed and refined by the researcher to evaluate the level of professionalism among nurse interns,

drawing on multiple established sources including Goz and Geckil (2010), Ichikawa, Yamamoto-Mitani, Takai, Tanaka, and Takemura (2020), Mohamed, Dorgham, and Eid (2020), and the Registered Nurses' Association of Ontario (RNAO, 2007). Originally composed in English, the instrument was translated into Arabic by the researcher in collaboration with a language expert to ensure linguistic and conceptual accuracy. The scale comprised 50 items divided across five core domains: professional responsibility for patients (9 items), professional attitude (16 items), professional ethics and values (14 items), advancement of the nursing profession (5 items), and professional knowledge (6 items), providing a comprehensive measure of professionalism in nursing practice.

Scoring System

The level of professionalism among nurse interns was assessed using a five-point Likert scale, with response categories ranging from "Strongly Disagree" (scored as 1) to "Strongly Agree" (scored as 5). Each participant's total score was derived by summing the scores across all items and dividing by the number of items, resulting in a mean score. This mean score was subsequently converted into a percentage for interpretive analysis. Subtotal scores were calculated for each professionalism domain according to the number of items included: professional responsibility for patients (range: 9–45), professional attitude (range: 16–80), professional ethics and values (range: 14–70), advancement of the nursing profession (range: 4–20), and professional knowledge (range: 6–30). The cumulative professionalism score ranged from a minimum of 50 to a maximum of 250.

Face and Content Validity of the Tools

To ensure the rigor and appropriateness of the developed instruments, face and content validity were evaluated following the preparation of their preliminary versions. This validation process aimed to assess the clarity, relevance, applicability, comprehensiveness, comprehensibility, and ease of use of the tools. A panel of nine nursing experts independently reviewed the translated tools and provided qualitative feedback and quantitative ratings. Each expert assessed the content validity of individual items using a four-point ordinal scale, where 1 = not relevant, 2 = somewhat relevant, 3 = relevant, and 4 = highly relevant. Based on these evaluations, both face and content validity were determined. The Item-Content Validity Index (I-CVI) was calculated for each tool, with acceptable thresholds set in accordance with established standards (Davis, 1992; Yusoff, 2019). The I-CVI for the Soft Skills Knowledge Questionnaire was ≥ 0.92, the Soft Skills Assessment Questionnaire achieved an I-CVI ≥

0.94, and the Item Content Validity Index, for the Nurse Interns' Professionalism Assessment Scale was ≥ 0.91. These results indicated satisfactory content validity. Modifications to the tools were implemented based on expert feedback, which included the clarification of ambiguous statements and the rephrasing of specific terminology to enhance comprehensibility. According to the experts' evaluations, the tools were judged to possess valid content. The entire validation process was completed over a two-month period.

Reliability

To assess the reliability of the tools, internal consistency was evaluated using Cronbach's alpha coefficient. The Soft Skills Knowledge Questionnaire demonstrated acceptable reliability with a Cronbach's alpha of 0.70. The Soft Skills Assessment Questionnaire and the Nurse Interns' Professionalism Assessment Scale exhibited excellent reliability, each yielding a Cronbach's alpha of 0.98. These findings confirm the internal consistency and reliability of the instruments used in the study.

Pilot Study

A pilot study was conducted involving 11 nurse interns, representing approximately 10% of the total study population. The sample included two males and nine females, who were randomly selected from the designated study setting prior to the formal data collection phase. The pilot study was carried out over a two-week period with the primary objective of evaluating the clarity, applicability, feasibility, and objectivity of the study instruments. The pilot also aimed to estimate the time required for participants to complete the data collection tools and to identify any potential issues that could hinder the data collection process. As no modifications were necessary following the pilot phase, the pilot participants were included in the main study sample. Completion of the Soft Skills Knowledge Questionnaire and the Soft Skills Assessment Questionnaire required approximately 20–25 minutes per instrument, while the Professionalism Assessment Scale was completed in approximately 5–10 minutes.

Fieldwork

The fieldwork for this study was conducted over an eight-month period, from June 2023 to January 2024. It followed four systematic phases: assessment, planning, implementation, and evaluation.

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A. Pre-Intervention Phase (Assessment Phase)

This phase was carried out from early June to mid-July 2023. Following official approval from the Dean of the Faculty of Nursing and the Vice Dean for Environment and Community Affairs at Port Said University, data collection commenced. The researcher introduced the study to nurse interns, obtained informed consent, and administered pre-test tools. The assessment included evaluating the interns' knowledge of soft skills using the *Soft Skills Knowledge Questionnaire*, their practice levels using the *Soft Skills Assessment Questionnaire*, and their professionalism using the *Nurse Interns' Professionalism Assessment Scale*. This initial data informed the design of the subsequent educational intervention.

B. Planning Phase

Based on the needs identified during the assessment, an educational program was developed focusing on soft skills and their respective domains. Educational materials were created, including PowerPoint presentations, pictorial resources, and informational brochures. A detailed schedule was formulated, outlining session timings, instructional strategies, and educational media. This planning process took place between mid-July and the end of August 2023.

C. Intervention Phase (Implementation Phase)

The implementation phase occurred from September 4 to 28, 2023. Official permission to deliver the training was obtained, and the educational program was conducted for a single group of nurse interns. The program consisted of eight sessions, delivered twice weekly (Mondays and Wednesdays) over four weeks. Each session lasted 90 minutes, including a 10-minute break. The initial session included an orientation, during which the program's objectives and significance were explained, and participants' expectations were discussed.

Each session began with a review of prior content and the clarification of current objectives. Diverse teaching strategies were employed, such as lectures, group discussions, brainstorming, and collaborative exercises. Feedback was provided at the end of each session, and learners were encouraged to ask questions to consolidate their understanding.

D. Post-Intervention Phase (Evaluation Phase)

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This phase assessed the effectiveness of the soft skills educational program. Evaluations were conducted immediately after program completion and again three months later. The same instruments used in the assessment phase were employed to measure changes in knowledge, practice, and professionalism. These included the *Soft Skills Knowledge Questionnaire, Soft Skills Assessment Questionnaire*, and the *Nurse Interns' Professionalism Assessment Scale*. The evaluation phase extended from October 2023 through January 2024.

Administrative Design

Prior to the initiation of the study, formal written approval was obtained from the Dean of the Faculty of Nursing at Port Said University, as well as from the Vice Dean for Environment and Community Affairs. These approvals granted the researcher authorization to access and collect data from the nurse intern population. The purpose and objectives of the study were clearly communicated to the administrative authorities to ensure transparency and institutional compliance with research protocols.

Ethical Considerations

Ethical approval for the study was obtained from the Scientific Ethics Research Committee at the Faculty of Nursing, Port Said University (Approval Code No. NUR (7/8/2022)(16). Informed verbal consent was secured from all participants prior to data collection. The purpose and nature of the study were explained to participants in clear and comprehensible language. Participants were assured that their responses would be treated with strict confidentiality and that all collected data would be used exclusively for scientific research purposes. They were also informed of their right to voluntarily withdraw from the study at any stage without any consequences. Participation was entirely voluntary, with no coercion or pressure applied, and respondents were not exposed to any form of risk or burden. Measures to safeguard the confidentiality and privacy of the data were rigorously upheld throughout the study.

Statistical Analysis

Data were entered and analyzed using IBM SPSS Statistics, Version 22.0 (Armonk, NY: IBM Corp.). The normality of data distribution was assessed using the one-sample Kolmogorov–Smirnov test. Categorical variables were summarized using frequencies and percentages, while continuous variables were expressed as means and standard deviations.

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The reliability of the study instruments was evaluated through internal consistency using Cronbach's alpha coefficient. To assess within-subject differences over time, a one-way repeated measures analysis of variance (ANOVA) was applied. Where significant differences were detected, post-hoc comparisons were conducted using the Bonferroni correction to control for multiple testing. The effect size of the soft skills educational intervention was estimated using partial eta squared (η^2). Statistical significance was defined as $p < 0.05$, and results were considered highly significant when $p < 0.001$.

RESULTS

Table 1 summarizes the personal and academic characteristics of the participating nurse interns. The majority of participants were female (69.3%) and single (86.0%). A significant proportion (95.6%) reported no prior training in soft skills. Most of the interns (79.8%) were aged between 22 and 24 years. Regarding residency status, 60.5% were identified as expatriates. In terms of academic achievement, 57.9% had attained a "very good" general grade in their academic records. Additionally, 75.4% of the interns reported completing their internship training in private healthcare institutions.

Table 2 presents the nurse interns' knowledge of soft skills across the pre-program, post-program, and follow-up phases. The results revealed statistically significant differences in knowledge scores across all soft skill components throughout the three phases of the program (p = 0.000) The mean percentage scores for the twelve knowledge domains varied considerably between phases. The post-program phase demonstrated the highest mean scores across most elements (63.93%, 66.12%, 68.78%, 55.25%, 54.38%, 82.98%, 76.20%, 67.32%, and 75.43%), indicating a marked improvement in soft skills knowledge immediately after the intervention. Interestingly, the follow-up phase showed the highest mean scores in select domains (68.09%, 68.67%, and 80.70%) when compared to both the pre- and post-program phases, suggesting knowledge retention or delayed internalization in certain areas. Moreover, the large values of partial eta squared (η^2) across all knowledge elements confirm the substantial effect size of the educational program, highlighting its significant influence on enhancing nurse interns' soft skills knowledge.

Figure 1 displays the mean scores of nurse interns' knowledge related to soft skills across the three phases of the educational program. Prior to the intervention, interns demonstrated relatively low knowledge levels, with a mean score of 40. Following the

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implementation of the program, a notable improvement was observed, with the mean score increasing to 61.8. However, a slight decline was recorded three months post-intervention, with the mean decreasing to 57.5. Despite this reduction, the post-program knowledge level remained higher than the baseline, indicating a sustained, though slightly diminished, retention of knowledge over time.

Table 3 highlights the significant impact of the training program on nurse interns' soft skills practice across the three phases (pre-program, post-program, and follow-up). All soft skills showed statistically significant improvements (P < 0.000) with large effect sizes (η^2 = 0.984–0.993). Mean scores increased substantially from the pre-program to the post-program phase and were sustained or slightly improved in the follow-up phase. Key improvements were observed in communication and leadership, with follow-up scores reaching 82.9% and 80.8%, respectively. While critical thinking and time management skills improved, they showed slightly smaller gains, suggesting areas for further enhancement. The effect size (η^2) values for individual soft skills, including communication skills, time management, leadership, teamwork, negotiation, planning, decision-making and problem-solving, critical thinking, networking, and creativity, ranged from 0.984 to 0.993, indicating a substantial and comprehensive effect of the training program. Overall, the program was highly effective in developing and retaining essential soft skills among nurse interns, with long-term benefits evident in the follow-up phase.

Figure 2 illustrates the progression of nurse interns' mean soft skills practice scores across the three phases of the program: pre-program, post-program, and follow-up. Prior to the intervention, participants exhibited relatively low levels of soft skills application, with a mean score of 259. A notable increase was observed immediately following the program, with the mean score rising to 310. Three months post-implementation, a further increase was recorded, with the mean reaching 344.8. These findings reflect a sustained and incremental improvement in the practical application of soft skills among nurse interns over time.

Table 4 presents the nurse interns' professionalism scores across the pre-program, post-program, and follow-up phases, revealing statistically significant improvements in all assessed domains (p = 0.000), with large effect sizes (η^2 ranging from 0.852 to 0.980). Among the professionalism domains, the highest mean percentage was observed in professional attitude during the post-program phase (85.77% ± 14.51), indicating a substantial

enhancement following the training. Conversely, the lowest mean percentage was found in professional knowledge during the pre-program phase (65.14% ± 20.03), highlighting a key area of initial deficiency. The data indicate consistent post-intervention improvements across all domains—namely professional responsibility, attitude, ethics and values, advancement of the nursing profession, and professional knowledge—with scores either sustained or slightly elevated in the follow-up phase, thus confirming the lasting positive impact of the training program on interns' professional conduct.

Figure 3 illustrates the estimated marginal means of nurse interns' professionalism scores across the three program phases. The data reveal a substantial improvement following the intervention, with the mean score increasing from 164.8 in the pre-program phase to a peak of 213.8 in the post-program phase. Although a decline was noted in the follow-up phase, with the mean score decreasing to 194.4, this value remained notably higher than the baseline measurement. This trend suggests that the educational program had a strong immediate impact on enhancing professional behavior, and while a slight reduction was observed over time, a meaningful level of retention was maintained. The highest level of professionalism was recorded immediately post-intervention, whereas the lowest was evident prior to the program, confirming the efficacy of the training in promoting professional development among nurse interns.

Table 5 articulates the effect of the educational program on nurse interns' knowledge of soft skills, soft skills practice, and professionalism. The post-program and follow-up program phases had the highest mean compared to the pre-program phase, with a statistically significant difference between the three program phases. In addition, the Bonferroni test for multiple comparisons reveals that each pair of pre- and post-, pre- and follow-up, and post- and follow-up data had a statistically significant mean difference at p =.000. Additionally, (η2) values for soft skills knowledge, soft skills practice, and professionalism of nurse interns (0.991, 0.994, and 0.982) prove the enormous effect size of the soft skills training program on nurse interns.

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Table (1): **Frequency distribution of nurse interns' personal and academic data (N = 114).**

Personal and academic data	Nurse interns'	
	No.	%
Age		
< 22 years	18	15.8
22 : 24 years	**91**	**79.8**
>24 years	5	4.4
Mean age ± SD	22.43 ± 0.986	
Range	21 - 26	
Gender		
Male	35	30.7
Female	**79**	**69.3**
Marital status		
Single	**98**	**86.0**
Married	16	14.0
Residence		
In Port said	45	39.5
Out of port said (expatriate)	**69**	**60.5**
General appreciation		
Excellent	39	34.2
Very good	**66**	**57.9**
Good	9	7.9
Place of internship training		
Governmental	28	24.6
Private	**86**	**75.4**
Previous attendance to training related to soft skills		
No	**109**	**95.6**
Yes	5	4.4
If yes, How long did you get the training (N= 5)		
< 3 month	**2**	**1.8**
3: 6 month	**2**	**1.8**
> 6 month	1	.9
Duration of training:		
< two weeks	**3**	**2.6**
two : four weeks	1	.9
> four weeks	1	.9
Place of training		
Governmental	0.0	0.0
Private	**5**	**4.4**
Cost		
Paid	**3**	**2.6**
Free	2	1.8

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Table (2): Nurse Interns' Knowledge regarding Soft Skills Across the Program Phases (N = 114)

Nurse interns' knowledge elements through the program phases	Pre Program Mean% ± SD%	Post Program Mean% ± SD%	Follow-up Program Mean% ± SD%	F	Sig.	η2	Effect size
Soft skills overview	26.90±17.17	63.937±21.14	61.208±23.29	1857.344	.000	.934	Large
Communication skill	27.8±22.169	66.123±21.138	54.992±21.423	1697.500	.000	.938	Large
Time management skill	17.653±18.652	65.0225± 22.75	68.0925±20.775	1926.678	.000	.945	Large
Leadership skill	21.178±16.0285	68.785± 23.085	55.628±22.742	2209.491	.000	.951	Large
Teamwork skill	12.566±10.81	55.255±24.26	46.977±16.98	1561.613	.000	.936	Large
Planning skill	21.671±15.457	54.385±24.985	49.242±24.7	1308.343	.000	.920	Large
Critical thinking skill	55.514±12.71	68.285± 14.285	68.671± 24.685	3961.432	.000	.972	Large
Networking skill	67.54±13.92	82.98±18.46	82.44±18.84	7523.312	.000	.985	Large
Negotiation skill	55.85±13.9	76.20±12.762	69.725±15.013	8845.104	.000	.910	Large
Decision making and problem solving skill	62.828±15.375	67.325± 17.862	58.987±16.162	5670.310	.000	.978	Large
Crisis management skill	62.828±15.375	67.325± 17.862	58.987±16.162	7213.140	.000	.820	Large
Creativity skill	87.88± 14.69	78.06±20.08	80.70±20.02	5809.343	.000	.931	Large

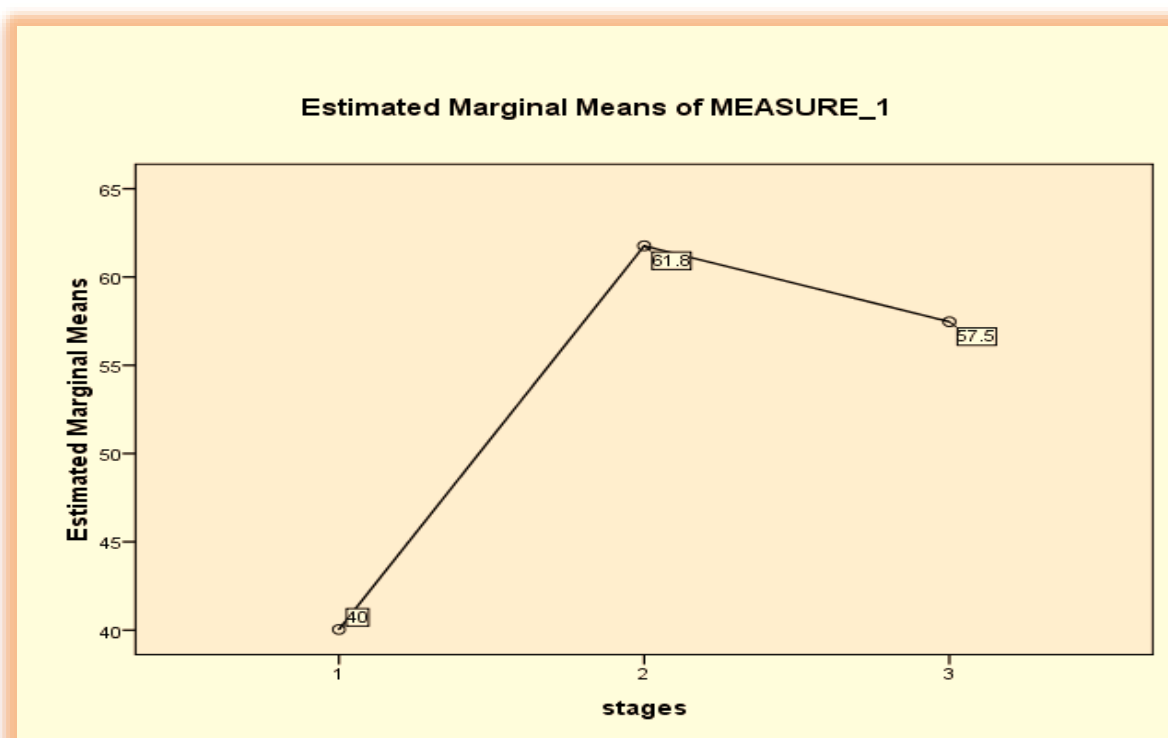F = Repeated Measure ANOVA   Partial η2 = Partial Eta Squared   *Significant (P<0.05).

Figure (1): Nurse Interns' Mean Knowledge Scores Regarding Soft Skills Across Program Phases (N = 114)

Table (3): Nurse interns' soft skills practice across the three phases: pre-program, post-program, and follow-up (N = 114).

Soft skills mean scores through the program phases	Pre Program	Post Program	Follow-up Program	F	Sig.	η2	Effect size
	Mean% ±SD%	Mean% ± SD%	Mean ± SD%				
Communication skills	66.237±14.955	79.445±10.392	82.942±10.917	15103.705	.000	.993	Large
Time management skills	61.926±15.6	75.786±12.233	76.43±20.173	69548.343	.000	.984	Large
Leadership skills	63.438±15.511	79.302±12.75	80.76±12.366	10778.564	.000	.990	Large
Teamwork skill	64.362±16.223	78.815±12.65	80.787±13.77	11714.677	.000	.990	Large
Negotiation skill	66.43±15.706	78.946±11.71	79.383±12.016	10326.453	.000	.989	Large
Planning skill	64.236±16.02	77.806±12.33	79.94±12.89	9133.673	.000	.988	Large
Decision making and problem solving skill	65.866±17.06	78.38±11.442	80.682±13.24	10358.634	.000	.989	Large
Critical thinking skill	67.30±17.4	64.876±11.59	79.66±13.87	8356.915	.000	.987	Large
Crisis management skills	62.58±16.22	78.22±13.1	79.548±12.42	9280.353	.000	.988	Large
Networking skill	64.98±16.97	77.84±8.405	79.856±8.41	9799.837	.000	.989	Large

| Creativity skill | 64.842±16.262 | 78.806±12.13 | 80.578±11.95 | 10815.227 | .000 | .990 | Large |

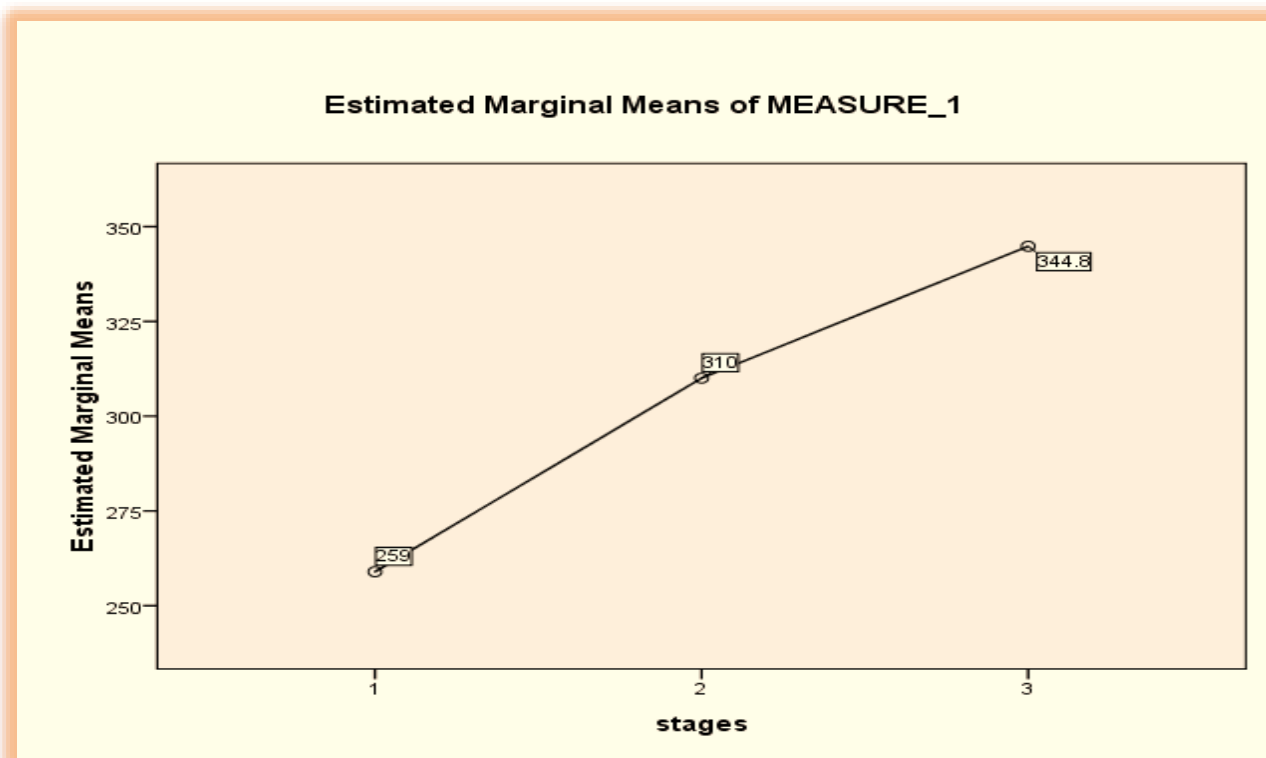F = Repeated Measure ANOVA   Partial η2 = Partial Eta Squared   *Significant (P<0.05).

Figure (2): Nurse interns' soft skills practice mean scores throughout the program phases (N = 114)

Table (4): Nurse interns' professionalism across the program phases (N = 114).

Professionalism domains through the program phases	Pre Program	Post Program	Program Follow-up	F	Sig.	η2	Effect size
	Mean% ±SD%	Mean% ± SD%	Mean% ± SD%				
Professional responsibility for patients	65.38±22.184	86.12±12.393	77.44±9.408	4931.34	.000	.877	Large
Professional attitude	66.161±21.35	85.767±14.507	78.201±18.725	5199.43	.000	.979	Large
Professional ethics and values	66.515±20.628	85.877±13.742	77.668±18.257	5543.13	.000	.852	Large
Advancement of nursing profession	65.544±19.032	83.68±15.752	76.84±17.812	5030.33	.000	.978	Large
Professional knowledge	65.143±20.033	85.033±13.953	78.156±17	5998.63	.000	.980	Large

Estimated Marginal Means of MEASURE_1

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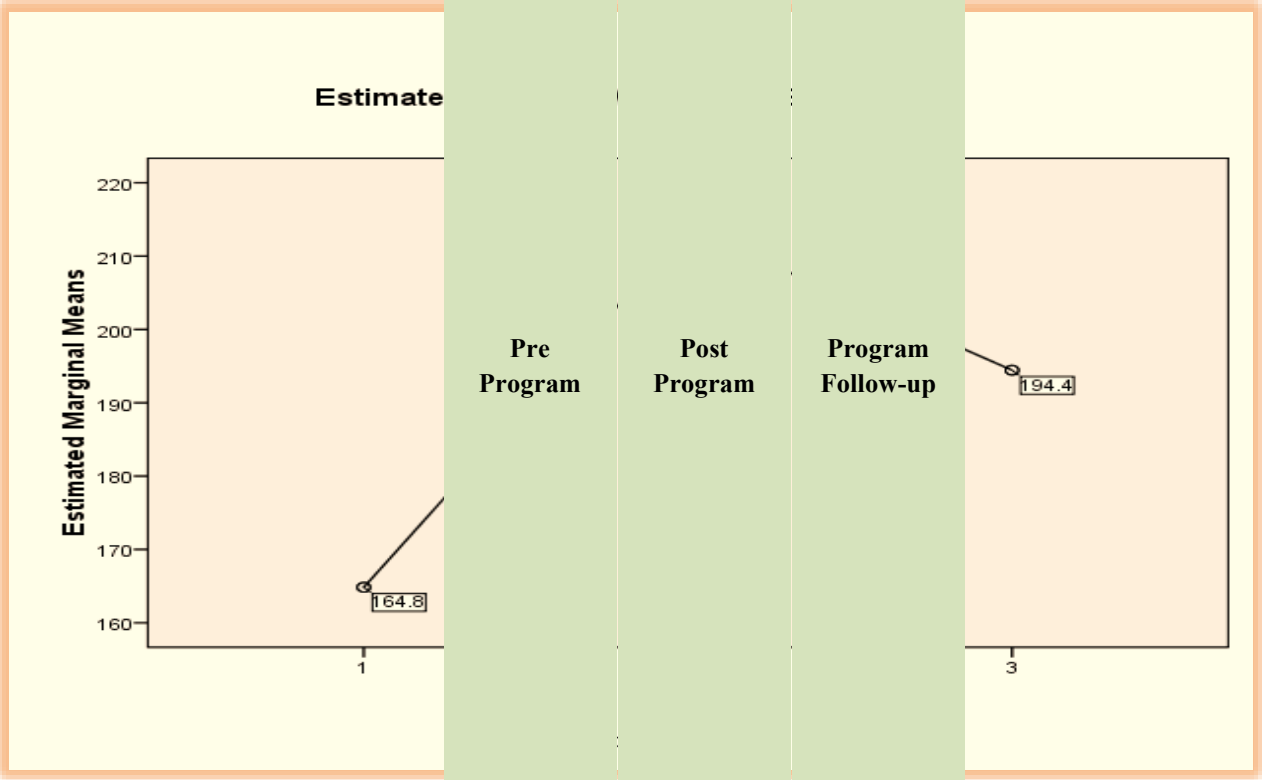**Interns' Professionalism: A Pre-Experimental**
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F = Repeated Measure ANOVA   Partial η2 = Partial Eta Squared   *Significant (P<0.05).

Figure (3): Nurse interns' professionalism mean scores throughout the program phases (N = 114)

Table (5): The effect of the training program on nurse interns' soft skills knowledge, soft skills practice level, and professionalism throughout the various stages of the program (N = 114).

Variables	Pairwise comparisons						F	Sig.	η2	Effect size
	Post and Pre program	**Follow-up and Pre**	**Post and Follow-up program**							
	Mean Difference	Mean Difference	Mean Difference	Mean% ±SD%	Mean% ± SD%	Mean% ± SD%				

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Total soft skills knowledge	21.728*	17.430*	4.298*	43.516±6.707	67.133±11.190	62.460±10.592	12100.862	.000	.991	Large
Total soft skills practice	51.136*	85.847*	34.781*	64.74±13.339	77.506±10.375	86.201± 10.386	18201.532	.000	.994	Large
Total professionalism	49.000*	29.596*	19.404*	65.936±19.658	85.536±13.286	77.775±16.84	6.2643	.000	.982	Large

a. Adjustment for multiple comparisons: Bonferroni.

(P): p-value for comparing the groups studied*: At the.05 level, the mean difference is significant.

F = Repeated Measure ANOVA   Partial η2 = Partial Eta Squared

DISCUSSION

The evolving demands of the Fourth Industrial Revolution have elevated the importance of soft skills alongside professional competencies in the healthcare sector. Nursing interns, in particular, must develop adaptability, effective communication, and interpersonal skills to navigate dynamic clinical environments successfully (Nilufar, 2020) . Higher education institutions are therefore challenged to integrate soft skills training into their curricula to enhance graduates' professional readiness. The present study aimed to evaluate the effectiveness of a structured soft skills educational program in improving the knowledge, competencies, and professionalism of nurse interns at Port Said University. This evaluation will inform educational strategies for better preparing nursing students for contemporary clinical practice.

The findings of the current study demonstrated a statistically significant improvement in nurse interns' knowledge of soft skills across all assessed domains following the implementation of the structured training program. Notably, the post-program phase recorded the highest mean percentage scores, which subsequently exhibited a slight decline at the three-month follow-up. Despite this minor reduction, the follow-up scores remained higher than baseline, and large partial η² values confirmed the program's considerable effect on enhancing knowledge.

The initially low knowledge scores may reflect the historical emphasis of nursing curricula on clinical and technical competencies, with limited formal training on soft skills such as communication, negotiation, and teamwork. The marked increase in post-program knowledge suggests the effectiveness of structured interventions in raising awareness and understanding of these essential competencies. The modest decline at follow-up likely results from the natural decay of information in the absence of regular reinforcement or practical application.

These outcomes are consistent with previous studies. Rosidah, Sasmita, Wisataone, and Hanafi (2022), reported significant improvements in students' knowledge following character development strategies through soft skills training. Similarly, R and Vajrala (2022) found that an educational intervention significantly improved nursing students' soft skills knowledge at the Savitri Jindal Institute of Nursing ($p < 0.05$). Moreover, Yousef, Shazly, and Omar (2020) demonstrated statistically significant increases in nurse interns' soft skills knowledge immediately after and during follow-up phases of a training program at Ain-Shams University Hospitals ($p < 0.01$).

Additional support comes from Yassein and Abd El-Aziz (2021), who found statistically significant gains in knowledge post-intervention ($p < 0.01$) at Benha University hospitals. Furthermore, Keshk, Qalawa, and Ibrahim (2018) observed improved knowledge levels among nursing interns at Port Said University following an educational program on the nursing process, compared to unsatisfactory levels before implementation.

The current study assessed nurse interns' soft skills practice levels across various phases of a structured training program. Results indicated statistically significant improvements across all soft skill dimensions, with large effect sizes observed. Mean scores substantially increased from the pre-program to the post-program phase and were maintained or slightly enhanced during the follow-up phase. These outcomes suggest the program was highly effective in fostering the development and retention of essential soft skills, with benefits extending into the long term.

These findings may be attributable to the influence of contextual and environmental factors, such as the interns' clinical exposure, patient diversity, and the degree of supervision and support received. Such factors are known to shape behavioral competencies and can vary considerably among individuals. The enhancement of soft skills among participants can be interpreted through the lens of experiential learning theory, particularly Kolb's stages of "concrete experience" and "active experimentation." As interns advanced through the program, especially during real-world clinical interactions, they applied and refined their interpersonal abilities, which facilitated skill internalization and sustainability.

The initially low soft skills scores observed during the pre-program phase likely reflect limited clinical experience and a lack of formal training in communication and teamwork strategies. Following the implementation of the soft skills training program, significant improvements were

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noted, suggesting that structured, guided learning plays a critical role in the development of these competencies.

These results are consistent with prior research. Sharma and Dayanand (2023) found a significant increase in soft skills among nursing students who received an interventional package, with scores rising from 178.86 (±23.34) to 241.02 (±23.01), indicating a statistically significant difference (p < .05). Similarly, Yousef, Shazly, and Omar (2020) reported significant improvements in nurse interns' soft skills post-intervention and at follow-up (p < .01) at Ain Shams University Hospitals. Additionally, Yassein and Abd El-Aziz (2021) confirmed substantial gains in soft skills across all domains (p < .01) after conducting a soft skills training program at Benha University hospitals.

Moreover, Moropa et al. (2025) emphasized the importance of soft skills training in enhancing nurses' interpersonal interactions. Their findings indicated that most nurses perceived such training as vital to building personal capacity and fostering effective relationships with both patients and professional colleagues. Integrating soft skills development into nursing curricula is, therefore, essential for preparing graduates for dynamic clinical environments.

The current study examined the development of professionalism among nurse interns across various phases of a structured educational program. Findings revealed statistically significant differences in professionalism levels across all measured domains throughout the pre-program, post-program, and follow-up phases. The post-program phase recorded the highest mean percentage scores across the five domains, followed by a slight decline during the follow-up phase. Additionally, large partial eta squared (η^2) values indicate a strong effect of the program on the interns' professional development.

These findings suggest that professionalism among nurse interns evolves considerably during their socialization journey from academic preparation to real-world clinical practice. Throughout the training program, nurse interns are mentored in a disciplined and structured environment, supported by role models and continuous supervision. These educational conditions positively influence their professional behavior. However, it is important to recognize that professionalism develops gradually through practical experience, and the short duration of the study may have limited the observation of more enduring changes.

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Consistent with these results, Xue et al. (2023) implemented a teaching strategy designed to enhance professionalism, empathy, and humanistic care among nursing students. Their findings demonstrated statistically significant improvements between the pre- and post-intervention assessments. Similarly, Abate et al. (2021) found high levels of perceived professionalism among nurses in public referral hospitals in Ethiopia. Azemian, Ebadi, and Afshar (2021) also reported that nurses who prioritized professionalism positively influenced the work environment. Moreover, Ahmed and Ibrahim (2023) confirmed that nurses generally demonstrated high levels of professionalism.

Collectively, these findings underscore the importance of embedding continuous professionalism training within nursing education. While initial improvements are promising, long-term support and structured professional development programs are essential to ensure sustained growth and ethical practice in nursing careers.

The findings of the current study highlight the significant impact of the educational program on nurse interns' soft skills knowledge, practical soft skills application, and professionalism. Both post-program and follow-up phases recorded significantly higher mean scores compared to the pre-program phase. The Bonferroni test for multiple comparisons confirmed statistically significant differences among all phase pairings pre- and post-program, pre- and follow-up, and post- and follow-up with p-values < .001. Furthermore, the large eta squared (η^2) values associated with soft skills knowledge, soft skills practice, and professionalism underscore the substantial effect size of the training intervention.

These results collectively affirm that a well-structured soft skills educational program can generate substantial and lasting improvements in nurse interns' professional competencies, including enhanced communication, interpersonal effectiveness, and ethical conduct. The program's influence persisted beyond its immediate duration, indicating successful knowledge retention and behavioral integration.

Supporting these findings, Saleh et al. (2025) reported that soft skills training significantly enhanced specific professional behaviors critical to modern clinical practice, contributing positively to overall performance. Likewise, Keshk et al. (2018) demonstrated that an educational program focused on the nursing process significantly improved interns' professionalism and advanced

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competencies, including communication, leadership, critical thinking, and adherence to safety protocols.

Furthermore, Liu, Zhang, and Shi (2020) found a strong association between nurse interns' confidence in their soft skills and the development of professional identity. Soft skills such as communication and teamwork were closely linked to increased professionalism, as interns who communicated effectively demonstrated a stronger alignment with their professional nursing roles.

Conclusion

The findings of this study demonstrate that the soft skills training program had a significant and sustained impact on nurse interns' professional development. Post-intervention and follow-up phases recorded the highest mean scores across soft skills knowledge, soft skills practice, and professionalism, with statistically significant differences observed between all program phases. Results from the Bonferroni multiple comparison test confirmed significant improvements between each pairwise phase comparison ($p < .001$). Furthermore, the large eta squared (η^2) values across measured domains indicate a strong effect size, affirming the program's effectiveness. Overall, the study hypotheses were supported, emphasizing that structured soft skills education can produce meaningful and enduring enhancements in the professional competencies of nurse interns.

Recommendations

In light of the current study's findings, several key recommendations are proposed to enhance the integration and development of soft skills in nursing education and practice.

1. **Curriculum Integration of Soft Skills**
   Nursing education programs at both undergraduate and postgraduate levels should formally incorporate structured soft skills training into the core curriculum. Emphasis should be placed on communication, emotional intelligence, teamwork, time management, adaptability, and leadership. These competencies are not merely supplementary but foundational to delivering high-quality, patient-centered care.

2. **Experiential Learning and Simulation-Based Training**
   Practical, scenario-based learning strategies—including simulation exercises and role-play—should be implemented to facilitate real-time application of soft skills. This aligns

with Kolb's experiential learning theory, supporting active experimentation and reflection as mechanisms for internalizing professional behaviors.

3. **Longitudinal Professional Development Programs**

   Institutions should design longitudinal training pathways that extend soft skills development beyond a single course or intervention. Sustained reinforcement over time is critical for lasting professional growth, as evidenced by the slight decline in scores during the follow-up phase.

4. **Assessment and Monitoring Frameworks**

   Establish standardized tools and criteria to assess and monitor soft skills and professionalism throughout the internship and early career phases. These assessments should be multidimensional, integrating self-reflection, peer feedback, and objective evaluations aligned with clinical competencies.

5. **Faculty Training and Role Modeling**

   Nurse educators and clinical mentors must be trained to serve as role models in demonstrating professional conduct and effective interpersonal interactions. Faculty development programs should emphasize mentorship practices that support the cultivation of a professional identity in students.

6. **Continuing Education and Lifelong Learning**

   Healthcare institutions should mandate regular continuing education in soft skills through accredited workshops, seminars, and conferences. These programs should be tailored to various clinical roles and promote reflective practice and inter-professional collaboration.

7. **Research and Innovation in Teaching Strategies**

   Future research should explore innovative pedagogical approaches for teaching soft skills, including the use of digital platforms, virtual reality, and AI-supported training modules. Rigorous studies should evaluate the long-term effects of such interventions on professional behavior and patient outcomes.

8. **Supportive Clinical Environments**

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Clinical settings should be structured to promote collaboration, psychological safety, and emotional resilience. Such environments are essential for nurturing the interpersonal and professional competencies of nurse interns and fostering their transition into confident, competent practitioners.

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