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Evaluating a community health nursing internship using the Kirkpatrick four-level model: Evidence from Iran

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ABSTRACT

This study aimed to evaluate the effectiveness of a community health nursing internship course for final-year nursing students in comprehensive health centers in Tehran, Iran, using Kirkpatrick's four-level model. The evaluation was performed in terms of the reaction, learning, behavior and outcomes dimensions based on the Kirkpatrick 4-level model. Fifty-six nursing students and 180 clients were randomly selected. Data were collected through researcher-made questionnaires and checklists and analyzed using descriptive and analytical statistical tests. At Level 1, students' overall satisfaction averaged 61, with the highest satisfaction in clinical instructor performance (77.53%). At Level 2, the mean self-evaluation learning score was 66.29; the highest learning occurred in vaccination (89.28%) and growth monitoring/ supplementary nutrition (69.64%). The overall performance evaluation averaged 70.14, with vaccination scoring the highest (91.07%). Clients reported high satisfaction with the care provided by students (Level 4 mean: 72.99). No significant association was found between students' demographic characteristics and the first three levels of the model. The internship demonstrated effectiveness at all four Kirkpatrick levels. The findings support the value of structured community health internships and highlight the need for educational authorities to develop a standardized, evidence-based program that addresses the identified strengths and areas for improvement.

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INTRODUCTION

Nurses are the largest group of healthcare teams and important members of the health system at the global and national levels, with a significant impact on the quality of care (Ayaz-Alkaya & Öztürk, 2021; Dorri et al., 2019). The nursing profession is rapidly changing worldwide because nurses are required to achieve more essential roles in patient care, including independent practice, responsibility, critical thinking, and internalizing professional ethics (Ayaz-Alkaya & Öztürk, 2021; Leijser & Spek, 2021).

Nursing education, which includes acquiring theoretical knowledge and clinical skills, aims to train professional nurses and enable them to provide high-quality nursing care in a clinical setting by integrating theoretical and practical knowledge (Aghaei et al., 2021; Lee & Sim, 2020). One of the long-standing problems in nursing education is the gap between theoretical knowledge and clinical practice (Leducq et al., 2012). Most newly graduated nurses are challenged

to transfer knowledge to clinical care environments (Lee & Sim, 2020) and feel unprepared and unconfident in entering the clinical setting, which, as mentioned in the literature, is rooted in the insufficient time which is allocated for clinical training (Ahmadi et al., 2020; Shahsavari et al., 2017). Clinical education is, therefore, the cornerstone of nursing education (Datta et al., 2025), and provides structured, actual, as well as complex information that cannot be obtained through other educational interactions (Çingöl et al., 2020). Besides, in clinical education, students are required to implement what they have learned in the classroom in real-world settings in order to achieve a professional level of nursing competence for safe and high-quality patient care (Chen et al., 2020).

The period during which nursing students transition to professional nursing is challenging and stressful, characterized by a lack of confidence and insufficient practical skills (Abdelaliem et al., 2025; Bennett, 2017). It is also one of the main concerns and a prerequisite for decision-making and planning in nursing education (Wei et al., 2021). Nurses must consolidate their knowledge and skills during this transition and adapt to new roles. In the absence of adequate support, nurses have been recognized as changing their clinical areas or abandoning their profession (Edwards et al., 2011).

Various strategies and interventions to improve the transition process, including structured and informal approaches, have been reported in international literature. Structured approaches include graduate programs (Johnstone et al., 2008), residency programs (Happell & Gough, 2007), orientation programs (Young et al., 2008), and internship programs (Ulrich et al., 2010). The most intense form of clinical training is an internship during the final year of nursing education (Çingöl et al., 2020). An internship course is necessary for acquiring cognitive, reflective, and affective nursing skills and is the most significant factor in maintaining students in the nursing profession (Duprez et al., 2021). This course provides an opportunity for nursing students to work as nurses and improve their clinical skills (Atakro et al., 2019). It also increases students' professional and personal competencies (Çingöl et al., 2020), and stimulates their critical thinking and clinical reasoning (Roush et al., 2021).

Nursing undergraduate programs at Iranian universities were arranged for a 4-year training period. In the final year of nursing, an internship course was included in the nursing curriculum to facilitate the transition of nursing students into professional nurses. The internship course includes 21 credits, provided in 1071 hours of practical training (each credit includes 51 hours), six days a week for one academic year (7th and 8th semesters). Within this framework, students, independently and under head nurses' and healthcare staff's direct supervision and supervisors' indirect supervision, take internships in wards including internal, surgical, gynaecology, paediatrics, psychiatry, and comprehensive health centers. After completing the internship, the evaluation of this course is mandatory.

Education is advantageous only if evaluated. For sustainable growth and development, every organization needs a systematic and effective evaluation to assess and achieve its goals. Program evaluation is comprehensively defined as the systematic collection and analysis of information related to the design, implementation, and results of the program, with the aim of improving its quality and effectiveness (Zare & Vizeshfar, 2019). The evaluation of any educational program is indispensable for assessing its effectiveness and changes in students' knowledge and abilities (Piryani et al., 2018). One of the most widely used evaluation models for evaluating and criticizing educational programs is the Kirkpatrick model, proposed by the famous American researcher Donald Kirkpatrick. This model is a distinguished standard and a simple and practical model in most educational situations, often used in medical institutions. While evaluation research encompasses diverse paradigms that guide the assessment of educational interventions, our study selectively draws from these traditions to align with the practical imperatives of program implementation. For instance, the objectives-centred model by Tyler (1949) emphasizes the alignment of outcomes with predefined goals, providing a foundational lens for measuring achievement, but often overlooks contextual and processual dynamics.

Similarly, Phi Delta Kappa-National Study Committee on Evaluation (1971) offers a comprehensive approach by evaluating Context, Inputs, Processes, and Products, which is particularly valuable for formative assessments in resource-constrained settings. The multilevel model proposed by Guskey (2000) extends this by prioritizing participant perceptions and organizational support in professional development evaluations, bridging individual and systemic impacts. These paradigms collectively underscore the multifaceted nature of evaluation, from objective attainment to holistic-system improvement. However, we adopt Kirkpatrick's four-level hierarchy, including Reaction, Learning, Behavior, and Results (1959, 1994), as our primary framework because of its specificity to training efficacy in organizational contexts, where behavioral transfer and tangible results are paramount for justifying investments. This choice is justified by the study's focus on a workplace training program, where Kirkpatrick's progressive levels enable a scaffolded analysis that builds from immediate feedback to long-term ROI, complementing rather than supplanting the broader insights of Tyler, Stufflebeam, and Guskey. By integrating Kirkpatrick, we ensure methodological rigor while remaining attuned to paradigmatic pluralism in the evaluation research (Guskey, 2000; Phi Delta Kappa-National Study Committee on Evaluation, 1971; Tyler, 1949).

Among various educational evaluation frameworks, the Kirkpatrick model is widely used for its structured, holistic approach to assessing training programs. It enables evaluators to measure not only participants' satisfaction and learning outcomes, but also their behavioral changes and the impact on organizational or service outcomes (Bhatia et al., 2021; Savul et al., 2021; Yang et al., 2025). This model evaluates the effectiveness of training at four levels. Level 1 (reaction) measured learners' satisfaction with the training program (participant satisfaction). Reaction refers to how learners react to all the effective factors in implementing a training course. Level 2 (learning) measures changes in students' knowledge and skills, indicating the effectiveness of the training (learning success). Level 3 (behavior) evaluates students' behavioral changes in the workplace (transfer of learning), and level 4 (outcomes) gauges the overall impact of training on organizational performance (career success and customer satisfaction) (Bijani et al., 2018; Liu et al., 2025). Countless educational health programs have been evaluated using the Kirkpatrick model, in which only the first two or three levels have been measured because of the difficulty in measuring level 4 (Shinohara et al., 2020).

Evaluating and sharing optimal approaches for community health nursing education is especially critical when nurses are asked to apply public health principles to patient care, regardless of their work environment. Growing evidence has emphasized the critical role of nurses as public health leaders and their urgent need to increase collaboration with other healthcare professionals in fulfilling these roles. In other words, nursing students, who later become nursing leaders, must be prepared to address the health and care of individuals and communities, not merely the acute needs of individuals (Fricas, 2021). To support this transition, the nursing internship program in Tehran, as is common in other parts of Iran, includes a two-credit community health nursing course, delivered in the 8th semester over a total of 102 hours. Despite the presence of this course in the curriculum for over a decade, ongoing concerns have been raised by students, clinical instructors, and nursing education managers regarding its actual impact. These concerns include ambiguity about whether students acquire meaningful practical skills, and whether the course prepares them for community-based practice. Such concerns highlight a critical need to evaluate this course systematically. Considering that more than ten years have passed since the introduction of the community health nursing internship course, and numerous issues have been reported by students, instructors, and nursing managers, evaluating this course and examining its effectiveness seems necessary. Therefore, this study was conducted in Tehran to determine the effectiveness of community health internship credit and the extent to which nursing students achieved their objectives according to the Kirkpatrick 4-level evaluation model.

METHOD

Study Design

In this cross-sectional program evaluation guided by Kirkpatrick's model, the effectiveness of the community health nursing internship was determined in undergraduate nursing students at comprehensive health centers in Tehran.

Participants and Sample

A total of 56 8th-semester undergraduate nursing students participated in this study. Participants were selected from the School of Nursing and Midwifery, Shahid Beheshti University of Medical Sciences, during the first semester of 2022, based on the following inclusion criteria: (1) being an 8th-semester nursing student enrolled in the community nursing internship course, and (2) willingness to participate in the study. The exclusion criteria were: (1) students transferred from other universities, (2) guest students, and (3) failure to attend the internship program for more than two sessions.

To select the health centers, a multistage cluster sampling method was used. In the first stage, the comprehensive health centers under the university's supervision were categorized into three geographical clusters: North Tehran, East Tehran, and Shemiranat. In the second stage, eight centers were randomly selected from these clusters: three from the North, three from the East, and two from Shemiranat. Participating students were randomly assigned to these centers. In addition, 180 clients receiving services at these centers were selected through simple random sampling from among those present during the data collection period.

Students were selected through a census. The minimum sample size required for the clients was 172 according to Formula (1), which was determined to be 180 for greater certainty:

$$n \geq \frac{z_{1-\alpha/2}^2 \ \sigma^2}{d^2}, \quad \begin{matrix} \alpha = 0.05 \Rightarrow z_{1-\alpha/2} = 1.96 \\ Effect Size = \frac{d}{\sigma} = 0.15 \end{matrix} \quad \ldots\ldots\ldots\ldots\ldots\ldots (1)$$

Data Collection Tools

Data collection tools included questionnaires and checklists. A questionnaire was used to investigate students' demographic characteristics, reactions (evaluation of the first level of the Kirkpatrick model), and learning (evaluation of the second level of the Kirkpatrick model). A checklist was used to assess students' performance (evaluation of the third level of the Kirkpatrick model). The client satisfaction questionnaire was used to evaluate the fourth level of the Kirkpatrick model. All questionnaires used in this study were developed by the research team.

The student satisfaction questionnaire assessed the first level of evaluation according to the Kirkpatrick model. This questionnaire contained 35 questions in four domains (achieving the internship goals, including eight questions; the clinical instructor's performance, consisting of 11 questions; planning and implementing the internship, with seven questions; and the course content, including nine questions) scored on a 5-point Likert scale (very good=4, good=3, moderate=2, weak=1, and very weak=0). At the end of the questionnaire, two open questions on students' recommendations were designed to increase their satisfaction and improve the course.

The student learning questionnaire gauged the second level of evaluation, according to the Kirkpatrick model. To this end, the content headings of the community health nursing internship approved by the Cultural Revolution Headquarters on general internship skills containing six questions, vaccination with nine questions, growth monitoring and supplementary nutrition with ten questions, family health with seven questions, and pregnant mothers with seven questions were investigated; a total of 39 questions were scored on a 5-point Likert scale ranging from 'very good' to 'very weak.'

To investigate the third level of the Kirkpatrick evaluation model, nursing students' performance in different wards of comprehensive health centers was observed and assessed using a checklist. This checklist examined vaccination, growth monitoring, supplementary nutrition, pregnant mothers, and family health through expressions on a 5-point Likert scale ranging from 'very good' to 'very weak.'

Client satisfaction with student services was investigated to evaluate the fourth level of Kirkpatrick's model. This questionnaire included two sections: the client's demographic information and 12 statements about the client's satisfaction with the services provided by students, with a 5-point Likert scale (totally satisfied = 4, satisfied = 3, moderate = 2, dissatisfied = 1, and totally dissatisfied = 0). Two questions were asked at the end of the questionnaire.

The scores of the student and client questionnaires and checklist were summed and taken to a scale of 100. The scores ranged from 0-100 and were rated as good > 66.66, moderate = 33.33-66.66, and weak = less than 33.33.

To collect the data, one researcher attended the internship site for 40 days from 8 am to 12:30 pm. To randomly record observations, data were collected on different days and hours. To ensure an accurate and actual record, each student's performance was observed and recorded three times. Three clients were examined for each student to obtain objective and accurate responses.

All tools used in this study were researcher-developed based on the Kirkpatrick model and tailored to the specific objectives and structure of the community health nursing internship. Although several validated instruments exist in Iran for assessing satisfaction and educational performance, they were not fully aligned with the domains and evaluation framework adopted in this study. Therefore, new instruments were developed in consultation with faculty members specializing in community health nursing and medical education.

Validity and Reliability

To investigate the content validity of the tool based on ten experts' judgments, Waltz and Bausell's validity index was used. The relevancy, clarity, and simplicity of the questions are examined using this method. The results showed that the maximum and minimum content validity indices were 98% and 88%, respectively. The content validity index for the entire questionnaire was 93.52%. Furthermore, to determine the face validity of the questionnaire, the opinions of experts who participated in determining the content validity were used.

Internal consistency (Cronbach's alpha) and test-retest methods were used to determine the reliability of the tools. Cronbach's alpha coefficients for the student satisfaction questionnaire, student learning questionnaire, student performance checklist, and client satisfaction questionnaire were $\alpha = 0.89$, $\alpha = 0.95$, $\alpha = 0.90$, and $\alpha = 0.92$, respectively. To determine consistency, the test-retest method was used. For this purpose, a questionnaire was administered to 15 students and 15 qualified clients at 15-day intervals. Pearson correlation coefficients for student satisfaction, student learning, and client satisfaction questionnaires were $r = 0.90$, $r = 0.94$, and $r = 0.89$, respectively. To determine the inter-rater reliability of the performance checklist, the simultaneous observation method was applied, in which two independent observers evaluated the same students at the same time and setting. The agreement between observers was assessed using Spearman's correlation coefficient ($r = 0.92$).

Ethical Consideration

The study was approved by the Ethics Committee of the School of Nursing and Midwifery, Shahid Beheshti University of Medical Sciences (IR.SBMU.PHARMACY.REC.1398.354). Informed consent was obtained from all participants. Students were clearly informed that their participation in the study was entirely voluntary and would not affect their academic grades or internship evaluations. Besides, all questionnaires were completed anonymously, and instructors had no access to individual responses to ensure confidentiality and minimize response bias.

Data Analysis

Descriptive statistics, including means and standard deviations for quantitative variables and frequencies and percentages for qualitative variables, were used to summarize the data. In addition, inferential statistical methods, including independent t-test, one-way analysis of variance (ANOVA), Tukey's post-hoc test, and Pearson's correlation coefficient, were applied to compare means and assess relationships between variables. All statistical analyses were performed using SPSS software version 17.

FINDINGS AND DISCUSSION

Findings

The students' mean age was 20.48 years, and the majority (82.1%) were female and single (73.2%). Approximately 51.8 % of study participants lived in dormitories. Most students (41.1 %) reported moderate interest, and a minority (16.1 %) reported a lack of interest in nursing.

The findings for the clients showed that the mean age of the study subjects was 32.28 years, with the majority (40%) in the 29-38 years age group. Most clients were female (75.6%), housemakers (58.9%), married (96.11%), and of Persian ethnicity (74.4%). The majority of clients (52.2%) had moderate familiarity, and the minority (5%) had no familiarity with nursing students' activities. Most clients (25%) were referred to the vaccination and child health wards, and a minority (6.7%) were referred to the pregnant mothers and child health wards.

The results based on the four levels of the Kirkpatrick model are presented in Tables 1–4. Figure 1 shows how the four levels of Kirkpatrick relate to each other in the study design. As shown in Table 1, most students' satisfaction with the community health nursing internship course objectives, clinical instructor's performance, planning and implementation, and content were good, good, moderate, and moderate, respectively. At the first level of evaluation, the satisfaction score of the majority of the study subjects (76.8 %) was moderate.

Table 1. Nursing Students' Satisfaction Scores with the Community Health Internship (Level 1-Kirkpatrick Model)

The Level of Student Satisfaction with the Community Health Internship Course		Number (%)	Mean (SD)
Index of course objectives	Good	28 (50)	74.15 (5.55)
	Moderate	28 (50)	59.15 (5.16)
	Weak	-	-
	Total	56 (100)	66.68 (9.27)
Index of the clinical instructor's performance	Good	44 (78.5)	77.53 (6.86)
	Moderate	12 (21.5)	58.90 (5.77)
	Weak	-	-
	Total	56 (100)	73.53 (10.14)
Index of course planning and implementation	Good	-	-
	Moderate	53 (94.6)	48.24 (7.56)
	Weak	3 (5.4)	29.76 (4.12)
	Total	56 (100)	47.25 (8.50)
Index of course content	Good	4 (7.2)	67.36 (1.38)
	Moderate	51 (91)	50.43 (7.20)
	Weak	1 (1.8)	-
	Total	56 (100)	51.28 (8.63)
Overall student satisfaction	Good	13 (23.2)	71.42 (3.65)
	Moderate	43 (76.8)	57.84 (5.7)
	Weak	-	-
	Total	56 (100)	60.99 (7.84)

The results of the second level of evaluation showed that the learning rates of the majority of students regarding general skills, vaccination, growth monitoring, supplementary nutrition, family health, and pregnant mothers were moderate, good, good, moderate, and moderate, respectively. At the second level of evaluation, most study participants (51.78 %) evaluated themselves as moderate (Table 2).

Table 2. Nursing Students' Learning Scores in Community Health Internship (Level 2-Kirkpatrick Model)

The Level of Student Learning in the Health Internship Course		Number (%)	Mean (SD)
General skills	Good	15 (26.5)	78.33 (7.58)
	Moderate	41 (73.22)	54.77 (7.36)
	Weak	-	-
	Total	56 (100)	61.8 (12.84)
Vaccination	Good	50 (89.28)	84.05 (11.05)
	Moderate	6 (10.72)	58.33 (5.27)
	Weak	-	-
	Total	56 (100)	81.29 (13.25)
Growth monitoring and supplementary nutrition	Good	39 (69.64)	77.30 (8.85)
	Moderate	17 (30.36)	56.47 (6.25)
	Total	56 (100)	70.98 (12.61)
Family planning	Good	13 (28.26)	73.7 (3.13)
	Moderate	30 (65.22)	52.85 (6.31)
	Weak	3 (6.52)	28.57 (3.57)
	Total	46 (100)	56.98 (12.99)
Pregnant mothers	Good	7 (15.22)	72.95 (2.80)
	Moderate	28 (60.87)	51.27 (6.60)
	Weak	11 (23.91)	26.62 (2.92)
	Total	46 (100)	48.68 (15.61)
Students' overall learning	Good	27 (48.21)	74.56 (5.61)
	Moderate	29 (5.78)	58.60 (6.29)
	Weak	-	-
	Total	56 (100)	66.29 (9.98)

Table 3. Nursing Students' Performance Scores in Community Health Internship (Level 3-Kirkpatrick Model)

Scores of the Student Performance Checklist in Different Areas of Community Health Internship		Number (%)	Mean (SD)
Pregnant mothers' health	Good	15 (32.6)	72.49 (5.35)
	Moderate	31 (67.4)	54.49 (6.89)
	Weak	-	-
	Total	46 (100)	60.52 (10.83)
Growth monitoring and supplementary nutrition	Good	39 (69.64)	79.02 (7.56)
	Moderate	17 (30.36)	58.33 (6.56)
	Weak	-	-
	Total	56 (100)	72.74 (12.05)
Vaccination	Good	51 (91.7)	86.6 (9.42)
	Moderate	5 (8.93)	62.72 (2.59)
	Weak	-	-
	Total	56 (100)	84.25 (11.29)
Family planning	Good	12 (26.8)	71.96 (3.26)
	Moderate	34 (73.92)	53.27 (9.33)
	Weak	-	-
	Total	46 (100)	58.15 (11.63)
Overall score of the performance checklist	Good	36 (64.29)	76.28 (1.01)
	Moderate	20 (35.71)	59.07 (1.39)
	Weak	-	-
	Total	56 (100)	70.14 (1.37)

The evaluation of student performance (third level of the Kirkpatrick model) according to Table 3 showed that most students' performance in pregnant mothers' health, growth monitoring and supplementary nutrition, vaccination, and family health wards was moderate, good, good, and moderate, respectively. The overall score for most participants (64.29%) at this level was good. Table 4, which represents the fourth level of evaluation, shows that the satisfaction levels of the majority (76.7%) and minority of clients (23.3%) were good and moderate, respectively.

Table 4. Client Satisfaction Scores with Services Provided by Nursing Students (Level 4 – Kirkpatrick Model)

The Client's Satisfaction Level	Number (%)	Mean (SD)
Good (>66.6)	138 (76.7)	77.37 (8.53)
Moderate (33.3-66.6)	42 (23.3)	58.63 (5.35)
Weak (<33.3)	-	-
Total	**180 (100)**	**72.99 (11.20)**

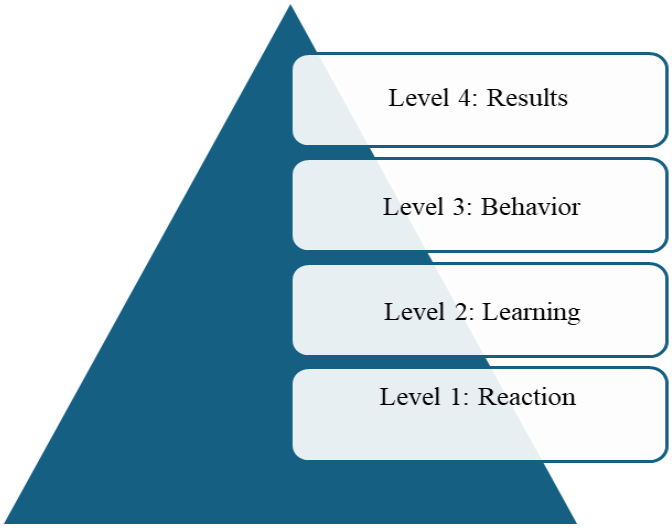

Figure 1. The Four Levels of Kirkpatrick

Pearson's test was used to identify the correlation between levels 1, 2, and 3 of the Kirkpatrick model, indicating a positive and direct correlation between the first and second levels ($r = 0.789$ and $p < 0.001$), the first and third levels ($r = 0.647$ and $p < 0.001$), and the second and third levels ($r = 0.691$ and $p < 0.001$).

Independent t-tests and one-way ANOVA were used to compare mean scores across levels 1, 2, and 3 of the Kirkpatrick model based on participants' sex, marital status, and place of residence. The results indicated no statistically significant differences between groups ($p > 0.05$). Pearson correlation analysis showed a statistically significant relationship between students' interest in the nursing profession and their scores across all three levels of the Kirkpatrick model ($p < 0.001$).

The analysis of the open questions in the students' questionnaire showed that 51.8 % acknowledged the lack of relationship between the community health nursing internships and their career future. They desired to attend health centers so that the community health nursing internships would become targeted for them. Approximately 35.7 % of students were dissatisfied with the community health training environment and demanded more attractive clinical settings. Approximately 37.5 % of students believed that the effectiveness of the internship would increase if both theoretical and practical courses were taught by the same instructor. Furthermore, 45% stated that a long interval must not exist between theoretical courses and related internships, and internship courses should be taken as soon as possible; consequently, learning would be durable, and the learning rate would increase.

Discussion

The present study aimed to evaluate the effectiveness of the community health nursing internship course based on the Kirkpatrick 4-level model. The results of this study revealed the strengths and weaknesses of internship courses, which can lead to the modification of educational programs from design to implementation.

Reaction

According to the results of the first level of this model (reaction), the mean overall student satisfaction was approximately 61%. The highest satisfaction was obtained in the clinical instructor's performance. The findings of studies conducted by Ghodsbin and Shafakhah (2008) and Jaffari and Valiani (2002) similarly showed that competent and enthusiastic instructors in the internship field could significantly impact students' success and the effectiveness of educational materials. However, in the study by Ahanchian et al. (2017), student satisfaction with the internship program was not optimal, which could be due to the full-time presence of the instructor using the traditional method in the control group. In a study conducted by Al Najjar and Rawas (2018), nursing students expressed being ignored by the instructor as a negative factor in learning during an internship course. Professors and trainers spend less time with students during internships; therefore, students refer to nurses or healthcare teams to learn their skills. As the role of mentorship has not yet been defined for nurses, they may not strive to help students learn.

Undoubtedly, proficient instructors convey their knowledge and experiences to students by establishing effective communication and can bridge the gap between theory and clinical practice. Learning and acquiring clinical skills are directly correlated with a clinical instructor's characteristics. Implementing the teaching-learning process through competent, efficient instructors appears to enable students to make the most of their abilities. Therefore, trainer performance should be one of the most significant factors in planning to improve clinical education.

The index for planning and implementing the course is evaluated at the first level. The results showed that the majority of the study participants (94.6%) evaluated this index as moderate. In a study by Aghaei et al. (2021), weak organization of physical and human resources, as well as improper planning and organization of the internship course, were stated as obstacles to students' adaptation to the internship. Pordanjani et al. (2009) stated that an unfavorable educational environment, which is one of the conditions of course implementation, was one of the main problems or weaknesses of clinical education, which is consistent with the results of the present study. The clinical setting is an important location for nursing students, and providing a suitable environment in terms of educational and welfare facilities and equipment is a predictor of clinical teaching effectiveness.

In various studies, nursing students' perspectives were generally positive toward most domains of educational goals and instructors' performance, yet negative toward educational and welfare facilities and equipment. Therefore, clinical nursing education needs comprehensive provision of facilities and equipment for clinical settings, as well as revisions of educational tools. Moreover, providing welfare facilities for students requires more attention, and alleviating these deficiencies will help to improve the existing educational situation and enhance its effectiveness.

The course content index was evaluated in the last area of the first level of the model. The findings indicated that the majority (91%) and minority (7.2%) of study participants evaluated this area as moderate and good, respectively. In a study by Nouhi et al. (2007), students expressed their opinions about the necessity of community nursing health courses, and their application in the real environment. Nursing students stated that there was no coordination between the theoretical lessons and their applications (nurses' tasks in the clinical setting). Similarly, in a study by Ahmadi et al. (2020), students were dissatisfied with the problems of planning curriculum content and described it as a challenge. It is believed that the nursing course paradigm in Tehran,

as in many other parts of Iran, unintentionally leads students toward medicine rather than nursing, with a predominant focus on treatment-oriented care rather than patient-centered or holistic care. Furlong and Smith (2005) pointed out that theoretical nursing courses should have flexible planning and changes according to the community's needs and care location. They also pointed out that to achieve advanced nursing, the needs of the client, family, and community should be considered.

Learning

The learning rate was evaluated from students' viewpoints based on the second level of the Kirkpatrick model. The highest learning rate was in vaccination and growth monitoring and supplementary nutrition areas, respectively. The lowest learning rate was related to pregnant mothers, family planning, and general skills. It seems that in vaccination and growth monitoring areas, the coordination of employees and health centers with training goals is higher, and in the health system of Iran, nurses' positions and roles are more obvious. However, in the areas of pregnant mothers and family planning, this role is not as clear; no particular position has been defined for nurses, and the cooperation of staff with nursing students is weaker.

Behavior

Based on the third level of Kirkpatrick's model, students' performance was evaluated, and their mean performance was 70.14. The highest score at this level was related to vaccination. In line with the present study, Sandhusen (2005) evaluated the performance of nursing graduates after an internship using the third level of the Kirkpatrick model. The results of this study showed good performance among nursing graduates. However, Banaderakhshan et al. (2005) evaluated students' professional behavior at the bedside as moderate. In their study, Parsa et al. (2006) evaluated most nursing students' achievement of clinical skills as moderate and weak. In their study, the most unachieved skills were decision-making, clinical judgment, creative thinking, problem solving, and problem identification. It can be stated that clinical nursing education is not designed to develop students' critical and creative thinking. Failure to use effective clinical training methods and skills by nurses in a clinical setting can also be another cause of weak student performance.

Outcome

According to the fourth level of the Kirkpatrick evaluation model, the mean client satisfaction with the services provided by nursing students in health centers was 72.99. Consistent with the results of the present study, Momeni et al. (2015) stated that 73.2% of the patients were satisfied with the services provided by nursing students in a clinical setting. Likewise, in a study by Khamseh et al. (2007), 70% of the patients reported satisfaction with providing services at the Firouzgar teaching hospital. Sabzevari et al. (2006) reported patient satisfaction with nursing students' communication with patients as 58.98 out of 87. However, Kotecki (2002) concluded that nursing students in clinical settings cannot establish good communication with patients. Reasons for patient satisfaction include good theoretical and practical training for students. Identifying students' strengths and weaknesses in clinical patient care is possible by examining their performance and patient satisfaction with the care they receive. Today, client satisfaction is an important aspect of health care services. Client satisfaction with nursing services indicates high-quality nursing care in the community. From a managerial point of view, nurses' competence is an influential factor in guaranteeing the quality of services provided to clients and gaining their satisfaction, which is considered a crucial issue for the survival of healthcare centers in today's highly competitive world.

The findings of this study, particularly students' satisfaction with instructors, moderate to good learning in key clinical skills, and positive client feedback, suggest that the community health internship contributes meaningfully to students' professional development. It enhances

their readiness to perform in real-world settings, strengthens communication and clinical reasoning skills, and also helps internalize public health responsibilities. These outcomes indicate the internship's potential in narrowing the gap between academic learning and practical performance.

Implications for Program Evaluation Research

This study extends the application of Kirkpatrick's four-level evaluation model, originally developed for training programs in organizational settings, to the context of clinical internship programs in nursing education, thereby contributing to the broader field of program evaluation research in higher education. The multi-level, mixed-methods approach employed here ensures that the findings are not only scientifically robust but also practically actionable for nursing faculty, clinical preceptors, and curriculum committees. Moreover, the identification of gaps between students' satisfaction (Level 1) and the actual transfer of competencies to community settings (Levels 3 and 4) highlights the necessity of moving beyond traditional summative or input-focused assessments toward iterative, outcome-oriented evaluation cycles in health professions education. Ultimately, this study provides a replicable and adaptable model for applying Kirkpatrick's hierarchy to the experiential and clinical components of allied health curricula worldwide, reinforcing the value of established training evaluation frameworks in bridging the theory–practice gap and informing evidence-based revisions of internship and fieldwork programs in nursing and similar disciplines.

Study Limitations and Strengths

A limitation of this study is that data collection was limited to Tehran. While this restricts generalizability to the entire country, Tehran's diversity offers partial representativeness for similar urban settings in Iran. There was a possibility that the respondents answered incorrectly, which was outside the researcher's control. This study was the first to be conducted in Iran at all four levels of the Kirkpatrick model at the Shahid Beheshti University of Medical Sciences.

CONCLUSION

Based on these findings and the effectiveness of internship course at four levels of reaction, learning, and behavior, and outcome, it can be concluded that to modify deficiencies, educational authorities and planners should provide more cooperation between academic areas and health centers, improve the quality of health centers' performance, provide necessary equipment and welfare facilities, take advantage of students' viewpoints, and lay the groundwork for more cooperation between healthcare staff and students. Consequently, the compatibility between theoretical and clinical education will increase, the maximum potential of the educational environment will be used, and, ultimately, student satisfaction will be enhanced. Future studies could integrate longitudinal tracking of graduate performance and employ mixed-method evaluation to validate behavioral and organizational outcomes at level 4 of Kirkpatrick's model.

DISCLOSURE STATEMENT

The authors do not have any potential conflicts of interest to disclose.

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ETHICS APPROVAL

This study was approved by the Shahid Beheshti University of Medical Sciences Ethics Committee (approval no. IR.SBMU.PHARMACY.REC.1398.354).

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