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Self-efficacy and its Related Factors among Midwifery Students of Tehran Islamic Azad University of Medical Sciences

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Abstract

Background and Aim: Clinical education, by integrating theoretical knowledge with cognitive, psychological, and motor skills, enables midwifery students to effectively apply learned concepts in real clinical environments. Self-efficacy, defined as one's perception or judgment of his/her ability to perform specific tasks, significantly influences thoughts, emotions and actions. This study aims to determine the level of self-efficacy of midwifery students studying at Islamic Azad University in clinical setting, and to explore its relationship with their demographic and educational characteristics.

Materials and Methods: This descriptive cross-sectional study was conducted during the academic year 2023–2024 among 3–8 semester midwifery students of Tehran Islamic Azad University of Medical Sciences. A census approach was employed to select the sample, meaning that all eligible students in these semesters were included in the study. Data were collected using the General Self-Efficacy Scale (GSE-10) alongside a structured demographic and educational characteristics questionnaire. Statistical analyses including descriptive and inferential statistics (independent samples t-test and ANOVA) were used to examine the study hypotheses and research questions.

Results: The mean self-efficacy score of the participants was 28.55 ± 4.90 out of a total of 40, indicating a relatively high level of self-efficacy among the students. No statistically significant differences were observed between the mean scores of self-efficacy in terms of age, academic semester, number of completed clinical credits, housing status, marital status, or university enrollment status. However, employment status was significantly associated with self-efficacy scores (p <.05).

Conclusion: Findings of this study indicated that the midwifery students possessed a high level of self-efficacy in clinical environments. To better identify the strengths and weaknesses of midwifery students, future research employing more specialized instruments to assess self-efficacy across various areas of midwifery duties—such as prenatal care, childbirth, and episiotomy—is recommended.

Key words: Self-efficacy, clinical setting, midwifery students.

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Introduction

Midwifery students are required to achieve academic, clinical and professional competencies throughout their education. Placement in clinical environment constitutes a significant part of the midwifery curriculum, aiming to facilitate the transfer of knowledge, skills and behaviors—that is referred to as competence [1]. Clinical education, as a dynamic process that integrates theoretical knowledge with cognitive, psychological and practical skills, helps students apply learned concepts in real clinical environment under the supervision of an instructor [2].

Bandura's self-efficacy theory is one of the theories used to ensure midwifery students achieve clinical competencies [3]. Self-efficacy refers to one's perception or judgment of his/her ability to perform a specific task by influencing thoughts, emotions, motivation and performance [2]. According to Bandura's theory, self-efficacy affects an individual's performance, motivation, and perseverance when facing challenges and plays a crucial role in clinical education [4]. Self-efficacy acts as a mediator between knowledge and behavior and is closely associated with professional competence [5]. In the clinical environment, self-efficacy refers to students' belief in their ability to successfully carry out tasks and cope with clinical challenges. This belief plays an important role in increasing motivation, persistence and professional performance. Students with high self-efficacy have greater confidence in their skills and are better able to cope with the challenges of clinical environments [1]. High self-efficacy significantly enhances students' adaptability`, self-confidence` and perceived competence`, and also fosters greater efficiency and the pursuit of ambitious goals [2]. In clinical settings, elevated self-efficacy is associated with improved performance, readiness for independent practice, and the resilience needed to navigate complex situations and workplace stressors [6-7]. It also serves as a strong predictor of safe, high-quality care while boosting motivation, creativity and a sense of belonging to the clinical environment [2]. Berdida and colleagues demonstrated that self-efficacy mediates the relationship between resilience and psychological well-being among nursing students [8]. Research also indicates that self-efficacy plays a dual role in academic success, and is positively associated with academic achievement [9]. It also acts as a negative predictor of academic burnout[10]." Furthermore, students with higher self-efficacy demonstrate greater confidence in doing exams [11].

Midwives, in order to provide high quality reproductive health services, must possess not only knowledge and skills but also sufficient self-efficacy, as self-efficacy is one of the key factors influencing proper performance in emergency and high-stress situations. When healthcare providers have higher self-efficacy, their expectations for achieving desired outcomes are greater, which in turn enhances their actual performance [11]. The main factors influencing midwifery students' self-efficacy include guidance and support from experienced instructors, ample opportunities for hands-on practice, continuous and constructive feedback, supportive clinical environment, and the

reinforcement of communication skills [1]. Other factors that contribute to the students' self-efficacy in real clinical settings include successful experiences and educational strategies, such as simulation, interactive learning, group exercises, and problem-based learning [4].

Midwifery students encounter numerous obstacles during their clinical training that may adversely affect their self-efficacy. Prominent barriers to the development of self-efficacy include the performance of tasks typically reserved for interns and residents, unsuitable clinical learning environments, limited patient availability, instructors' insufficient expertise and experience, and large class sizes [12]. Today, students learn to become midwives and develop self-efficacy in a context characterized by a shortage of midwives, declining fertility rates, and a stressful environment [1]. This study aims to determine the level of self-efficacy among midwifery students of Islamic Azad University and its relationship with some demographic and educational characteristics.

Methods

This is a descriptive cross-sectional study that was conducted on midwifery students of Tehran Islamic Azad University of Medical Sciences during the second semester of 2023–2024 academic year. All midwifery students of Tehran Islamic Azad University of Medical Sciences, who were in semesters 3 to 8, were selected to take part in the study using a census method. Data were collected using the standardized General Self-Efficacy Scale (GSE-10) and a demographic and educational characteristics questionnaire, which included information related to age, semester, completed clinical credits, housing status, employment status, marital status, and university status (regular, guest, or transfer student). Students who had completed at least one clinical credit were included in the study. Initially, detailed explanations regarding the study objectives were provided to the participants. After obtaining written informed consent, the questionnaires—without participants' names—were distributed to the students by the respective instructors at the internship setting. Upon completion, the questionnaires were returned to the researcher for analysis. Only fully completed questionnaires were included in the analysis. "A total of 241 individuals completed the questionnaire. After excluding 8 participants due to incomplete responses, 233 complete questionnaires were analyzed.

The General Self-Efficacy Scale (GSE-10), developed by Schwarzer et al. (1997), has 10 items rated on a four-point Likert scale (1–4), with total scores ranging from 10 to 40. In this instrument, scores between 10 and 15 indicate low self-efficacy, scores between 15 and 25 indicate moderate self-efficacy, and scores above 25 indicate high self-efficacy for each participant. In previous studies, the Cronbach's alpha coefficient and internal consistency of this questionnaire have been reported to range from 0.81 to 0.91. In Iran, the scale was standardized by Rajabi, who reported a reliability coefficient of 0.82 and a validity coefficient of 0.79 for it [13]. In a study conducted by Karami and colleagues, the validity of this scale was examined, and Cronbach's alpha of 0.83 was reported for it [14].

For data analysis, participants' demographic and educational characteristics were initially

summarized using descriptive statistics (mean and standard deviation, frequency, and percentage). Inferential statistical (t-test and ANOVA) were then applied to answer the research questions.

The present study was derived from a research project approved by the Research Council of the School of Nursing and Midwifery, Tehran Islamic Azad University of Medical Sciences, as well as by the Ethics Committee of the School of Pharmacy and Pharmaceutical Sciences, Tehran Islamic Azad University of Medical Sciences, dated May 9, 2023, under the ethical approval code: IR.IAU.PS.REC.1402.188.

Results

The age of participants ranged from 19 to 31 years, with 22-year-old students representing the largest proportion (26.6%). The mean age of the participants was 21.95 ± 1.69 years. Sixth-semester students constituted the largest group of participants (n = 49, 29%), whereas fifth-semester students represented the smallest group (n = 25, 10.7%). The number of completed clinical credits ranged from 1 to 29, with a mean of 12.62 ± 7.89. The characteristics of the study participants are presented in Table 1.

Table 1. Characteristics of the Midwifery Students at Tehran Islamic Azad University of Medical Sciences

Variable	Statistic	Frequency	Percentage (%)
Age	22 years and younger	163	69.96
	Older than 22 years	70	30.04
Academic Semester	Semesters 3–5	113	48.50
	Semesters 6–8	120	51.50
Completed Clinical Credits	15 clinical credits or fewer	162	69.53
	More than 15 clinical credits	71	30.47
Housing	Personal residence	224	96.14
	Dormitory	9	3.86
Employment Status	Unemployed	185	79.40
	Employed	48	20.60
Marital Status	Single	198	84.98
	Married	35	15.02
Enrollment Status	Regular	170	72.96
	Guest	40	17.17
	Transfer	23	9.87

Table 2 presents the means and standard deviations for the General Self-Efficacy Scale (GSE-10) items among the participants.

Table 2. Mean and Standard Deviation of Self-Efficacy Scores of the Questionnaire Completed by Midwifery Students, Tehran Islamic Azad University of Medical Sciences

Item	Statement – Related to the Student's Personal Characteristics	Mean	Standard Deviation (SD)	N
1	If I try hard enough, I can always manage to solve difficult problems.	3.06	.72	233
2	If someone opposes me, I can find ways and means to achieve what I want.	2.85	.70	233
3	Sticking to my goals and achieving my objectives is easy for me.	2.67	.76	233
4	I am confident that I can effectively deal with unexpected events.	2.72	.73	233
5	Due to my competence, I know how to manage unforeseen situations.	2.75	.71	233
6	If I make the necessary effort, I can solve most problems.	3.23	.70	233
7	When facing difficulties, I can remain calm because I can rely on my coping abilities.	2.81	.78	233
8	When confronted with a problem, I can usually find several solutions.	2.93	.72	233
9	If I am in distress or difficulty, I can usually think of a solution.	2.81	.77	233
10	I can usually manage whatever comes my way.	2.68	.74	233

Students assigned the highest scores to the item reflecting effort exerted to achieve intended goals. According to the scale's standard classification, scores above 25 indicate a high level of self-efficacy. The mean self-efficacy score of the participants was 28.55 ± 4.90, meaning that the students demonstrated a high level of self-efficacy in clinical environments. The mean self-efficacy score of the students is presented in Table 3.

Table 3. Mean Self-Efficacy Scores of Midwifery Students at Tehran Islamic Azad University of Medical Sciences

Variable	Mean	Standard Deviation (SD)	Maximum	Minimum	N
Self-Efficacy Score	28.55	4.90	40	13	233

An independent samples t-test was used to compare the mean self-efficacy scores between the two groups across the demographic and educational characteristics. The results indicated no statistically significant differences between self-efficacy scores and age, semester, completed clinical credits, housing status, marital status, or university status (p>.05). However, a statistically significant difference was observed between the students' employment status and their self-efficacy scores (p <.05). Self-efficacy scores were significantly higher among employed students (p=.042). However, the magnitude of this difference was small (d=0.31), and the relationship weakened after controlling other variables in the regression model. The results of

independent samples t-test are presented in Table 4.

Table 4 Comparison of Mean Self-Efficacy Scores According to Demographic and Educational Characteristics among Midwifery Students at Islamic Azad University of Medical Sciences

Variable	Group	N	Mean Self-Efficacy Score	Standard Deviation (SD)	t-test	*p*-value
Age	≤22 years	163	28.80	4.18	.300	>.05
	>22 years	70	27.95	6.26		
Academic Semester	Semester 5 and below	113	29.14	4.54	.076	>.05
	Semester 6 and above	120	28.00	5.18		
Completed Clinical Credits	<15 clinical credits	162	28.85	5.00	.162	>.05
	≥15 clinical credits	71	27.87	4.62		
Housing	Private home	224	28.49	4.94	.26	>.05
	Dormitory	9	30.00	3.67		
Employment Status	Unemployed	185	28.23	4.97	.04	<.05
	Employed	48	29.77	4.45		
Marital Status	Single	198	28.78	4.86	.083	>.05
	Married	35	27.22	5.01		

In addition, the results of one-way analysis of variance (ANOVA) indicated no statistically significant difference in mean self-efficacy scores among students based on university status (regular, guest, or transfer), (p =.146).

Discussion

This study was conducted to determine the level of self-efficacy among midwifery students and to examine its relationship with selected demographic and educational characteristics. The findings revealed that the mean self-efficacy score of the participants was 28.55 ± 4.90, which is considered to fall within the high range of self-efficacy.

Also, in our study, students assigned the highest score to Item 6, which indicates greater effort toward achieving goals. This finding is consistent with the findings reported by Rajabi [13].

No statistically significant associations were observed between self-efficacy scores and age, semester, completed clinical credits, housing status, marital status, or university status. However, employment status demonstrated a statistically significant relationship with the mean self-efficacy score (p <.05), although the effect size was small.

In the present study, GSE-10 developed by Ralf Schwarzer et al. (1997) was used to measure self-efficacy. This scale has been standardized in Iran and, due to its brevity

and objectivity, is considered appropriate for clinical and field studies [13,15]. The results of present study are consistent with those reported by Iwanowicz-Palus and colleagues, who also employed Schwarzer et al.'s General Self-Efficacy Scale to assess self-efficacy among midwifery students at various educational levels (first- and third-year undergraduate and graduate students) in Poland. They reported a mean self-efficacy score of 28.36 (SD = 4.41), which is comparable to the mean score obtained in the present study. Furthermore, the mean self-efficacy scores among students at different academic levels in their study did not differ significantly. This finding is also in line with the present study, in which semester and the number of completed clinical credits were not significantly associated with the level of self-efficacy among midwifery students. In their study, the mean self-efficacy score was 28.34 (SD = 4.65) among first-year undergraduate students, 28.33 (SD = 4.44) among third-year undergraduate students, and 28.42 (SD = 4.11) among graduate students (p >.05), [11].

Many researchers have employed more specialized instruments to assess clinical self-efficacy. For example, Rezaei and colleagues used a clinical self-efficacy scale developed by Cheraghi to measure clinical self-efficacy among midwives working in labor wards and healthcare centers [16]. Salimi and colleagues assessed clinical performance self-efficacy among nursing students using the clinical performance self-efficacy questionnaire [7].

Li and He conducted study on midwifery students in China and revealed moderate self-efficacy within this group. Their findings highlighted per-capita monthly household income and the students' initial choice of midwifery as a major as the most significant determinants of their self-efficacy [17].

Midwifery students and graduates are responsible for a wide range of duties, including preconception counseling, antenatal care, intrapartum care, postpartum care, as well as newborn care and breastfeeding support. The level of self-efficacy may vary across each of these domains. Therefore, it is preferable to assess self-efficacy in each specific domain using instruments tailored to that particular area of practice.

In this regard, many researchers have measured self-efficacy within specialized clinical domains. For example, Yolcu et al. (2025) developed a specific instrument to measure self-efficacy in the domain of episiotomy [5]. Goroshani et al. (2023) designed an instrument to compare self-efficacy between midwife and non-midwife healthcare providers working in health centers of Ahvaz. Their tool assessed self-efficacy separately across multiple domains, including maternal care, child health, adult care, preconception care, and healthy fertility [18].

Therefore, although the findings of present study are valuable as an initial contribution to research in this area, generalizing its results to all professional domains of midwifery, such as childbirth and episiotomy care, should be approached with caution.

In the present study, a weak statistically significant relationship was found between students' employment status and their self-efficacy. This finding is consistent with the study of Mohammadi and colleagues,

demonstrating that prior work experience and the duration of employment had a positive and statistically significant effect on the clinical performance self-efficacy of nursing students [19]. It appears that gaining experience and expanding professional networks in the workplace positively influences self-efficacy among students.

In the present study, no significant association was found between academic semester or the number of completed clinical credits and students' self-efficacy levels. In contrast, Kababi and colleagues reported a positive and statistically significant relationship between nursing students' self-efficacy and their academic semester [20]. Similarly, Salimi and colleagues found that clinical self-efficacy among nursing students increased with progression in academic semesters [7]. Previous studies have also demonstrated that self-efficacy improves with increased knowledge acquisition and greater opportunities for practical training in real clinical environments [1]. It appears that the type of instrument used to measure clinical self-efficacy may explain this discrepancy. Since the instrument employed in the present study was not domain-specific and assessed general self-efficacy rather than clinical self-efficacy, no differences were observed in self-efficacy among midwifery students across different academic semesters. In addition, numerous challenges in the clinical environments of midwifery students [12] can hinder their development of self-efficacy in later semesters.

A significant limitation of this study was the lack of control over contextual variables, such as students' personality traits. Additionally, conducting the research at Tehran Islamic Azad University of Medical Sciences limits the generalizability of the results to other centers. Finally, data collected via self-report questionnaires may be subject to biases related to the desire for a socially desirable image.

Conclusion

The findings of present study indicated a high level of self-efficacy among midwifery students of Islamic Azad University. No statistically significant association was observed between demographic and educational characteristics and self-efficacy levels, except for employment status. To identify the strengths and weaknesses of midwifery students more precisely, further studies are recommended using domain-specific instruments designed to measure clinical self-efficacy across the various clinical domains, such as prenatal care, childbirth and episiotomy.

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Conflict of Interest

The authors declare that there are no conflicts of interest regarding this study.

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