ORIGINAL RESEARCH ARTICLE

# Attitudes Toward Field of Study and Career Prospects among Emergency Medical Services Students in West Azerbaijan Province, Iran

Arezou Shekarchi[1], Yaser Moradi[2], Samira Orujlu[2]

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## Abstract

**Background** The attitudes of Emergency Medical Services (EMS) students toward their field of study and future careers are essential for workforce sustainability and the delivery of high-quality emergency care. This study examined these attitudes among EMS students at Urmia and Khoy Universities of Medical Sciences to inform educational program development and policy planning.

**Methods** This descriptive-analytical study was conducted in 2025 among 122 EMS students using a validated questionnaire comprising three sections: (1) demographic information, (2) attitudes toward the field of study, and (3) attitudes toward career prospects. Responses were recorded on a five-point Likert scale. Data was analyzed using descriptive statistics, independent t-tests, and one-way ANOVA.

**Results** Most students expressed a positive attitude toward their field of study, with over 75% reporting satisfaction with their academic choice and an increased interest after enrollment. Although 79% indicated a willingness to pursue a career in EMS, substantial concerns were noted regarding future employment. Nearly 46% of students reported dissatisfaction with salary and job market stability. The year of admission was significantly associated with attitudes, with second-year students demonstrating more favorable perceptions of both their field of study and career prospects than first- and third-year students ($p < 0.05$).

**Conclusion** EMS students generally exhibit satisfaction with their field of study but express concern about their professional futures, particularly in relation to financial security and job stability. Educational and policy measures, such as enhancing employment conditions and providing targeted career counseling, are recommended to sustain motivation and secure a competent future EMS workforce.

**Keywords** Attitude, Career choice, Education, Emergency medical services, Job satisfaction, Medical, Students

✉ Samira Orujlu
orojlo.s@umsu.ac.ir

1. Student Research Committee, School of Nursing and Midwifery, Urmia University of Medical Sciences, Urmia, Iran
2. Department of Medical Surgical Nursing, School of Nursing and Midwifery, Urmia University of Medical Sciences, Urmia, Iran

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## 1 Introduction

The field of Emergency Medical Services (EMS) represents a vital component of higher education, aimed at preparing specialized professionals capable of responding effectively to medical emergencies through proficiency in prehospital care and patient stabilization protocols.[1,2] As the first point of contact during emergencies, EMS professionals operate in unpredictable and dynamic environments. Their role has evolved considerably, now encompassing a broad spectrum of responsibilities designed to safeguard patient welfare from the incident scene to the healthcare facility.[3-5] This expanding role has led many countries, including Iran, to transition from traditional on-the-job training toward structured, university-based pre-employment programs, underscoring the importance of a robust educational foundation.[4,6]

Effective EMS education must foster a comprehensive range of competencies, including clinical expertise, communication, teamwork, and professional conduct.[3] However, studies indicate that some graduates may lack readiness in essential domains such as interpersonal communication and the practical application of knowledge, challenges intensified by aging populations and increasingly complex health systems.[3,7,8] Students often report difficulties related to the quality of clinical training, the gap between theory and practice, and the limited alignment of curricula with field realities.[4,9] Although simulation-based learning is valuable, inadequate hands-on experience can lead to skill deficits, while insufficient integration of non-technical skills, such as leadership and teamwork, remains a concern.[3,10,11]

In this context, evaluating EMS students' attitudes toward their field of study and future careers is of particular importance. A positive attitude is closely associated with professional identity, job satisfaction, and effective performance, all of which contribute to career success and workforce retention.[12-15] Such attitudes, most flexible during the student years, are shaped by diverse factors, including personal motivation, perceived career opportunities, and the quality of educational experiences.[16,17] Understanding these perspectives is therefore essential for curriculum reform, alignment of programs with student expectations, and the development of a motivated, competent workforce.[18-20]

Studies conducted in Iran reveal mixed findings regarding the attitudes of medical sciences students. For instance, while dentistry[21] and radiologic technology[22] students generally report positive perceptions, students in fields such as public health and other paramedical disciplines often express concerns, particularly about their future employment.[6,16,23] A recurrent observation is the discrepancy between satisfaction with the academic major and pessimism regarding career prospects, a pattern also noted among medical students.[14,24] A systematic review further confirmed that students in certain health-related fields exhibit less favorable attitudes toward both their academic discipline and career outlook compared with others.[25]

Despite existing research, few studies have specifically examined the attitudes of EMS students.[26] The present study addresses this gap by focusing on EMS students enrolled in the nursing faculties of Urmia and Khoy Universities of Medical Sciences. Given the paucity of regional data and the unique demands of the EMS profession, this study seeks to provide a nuanced understanding of student attitudes. The findings aim to inform strategies for enhancing educational quality, strengthening clinical training, aligning curricula with workplace realities,[9] and promoting supportive learning environments through mechanisms such as constructive feedback.[27] Ultimately, this research is intended to support educational and health policy reforms that enhance workforce motivation, improve retention of skilled EMS personnel, and contribute to the overall quality of emergency care and public health.

## 2 Methods

This descriptive-analytical study was conducted in 2025 to evaluate the attitudes of prehospital EMS students toward their field of study and future career prospects.

The study population included all EMS students from the 1401–1403 Solar Hijri admission cohorts (corresponding to 2022–2024 AD), representing third-, second-, and first-year students enrolled at the Urmia School of Nursing and Midwifery and the Khoy School of Medical Sciences at the time of the research. Sampling was conducted using a census method, encompassing all eligible students who met the inclusion criteria. To be included, participants had to be actively enrolled as EMS students and willing to participate by providing informed consent. Students who had withdrawn from their studies or submitted incomplete questionnaires were excluded from the final analysis.

At the beginning of the study, an orientation session was held to explain the purpose of the research and the procedure for completing the questionnaire. The questionnaires and informed consent forms were distributed to eligible students and collected after completion. Data were collected using a standardized questionnaire adapted from the University of Minnesota Attitude Assessment Survey, which had been translated and validated in Iran by Samadi et al.[23] The validity of this instrument was confirmed through face and content validity methods, and its reliability was verified with a Cronbach's alpha coefficient of 0.83.[23]

The questionnaire comprised three main sections. The first section collected demographic information, including age, year of university admission, marital status, and place of residence. The second section measured attitudes toward the field of study (FS), assessing satisfaction with the choice of major, alignment between course objectives and student expectations, the perceived academic value of the major, and the societal perception of the profession. The third section evaluated attitudes toward career prospects (CP), exploring students' perceptions of career benefits, encouragement from professors to enter the job market, concerns regarding employment opportunities, and willingness to work in the EMS field. All items were rated on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). For each participant, total scores were calculated for the FS and CP components.

Data was analyzed using SPSS software, version 26 (IBM Corp., Armonk, NY, USA). The normality of the total attitude scores for both components was assessed using the one-sample Kolmogorov–Smirnov test, which indicated no significant deviation from a normal distribution. This confirmed the suitability of parametric tests for the analysis. Mean attitude scores between two independent groups, such as local versus dormitory students or single versus married students, were compared using the Independent Samples t-test. Differences among more than two groups, such as between different admission years, were evaluated using one-way analysis of variance (ANOVA). When ANOVA results were statistically significant, Tukey's Honestly Significant Difference (HSD) post-hoc test was performed to determine which specific groups differed from one another. In all analyses, a p-value of less than 0.05 was considered statistically significant.

## 3 Results

A total of 122 EMS students participated in the study, all of whom were male. The mean age of the participants was 21.51 ± 1.97 years, ranging from 19 to 28 years. Most students were single (95.9%) and non-local, with 85.2% residing in university dormitories. Based on the Solar Hijri admission cohorts, the participants included third-year students from the 1401 cohort (n = 20, 16.4%), second-year students from the 1402 cohort (n = 53, 43.4%), and first-year students from the 1403 cohort (n = 49, 40.2%).

Analysis of students' attitudes toward their FS revealed that the majority expressed positive perceptions. More than three-quarters of participants reported satisfaction with their choice of major (FS2; 75.4% "agree" and "strongly agree") and indicated that their interest in the field had increased after entering the program (FS4; 75.4% "agree" and "strongly agree"). A similarly high proportion of students believed that the value of their major increases with higher academic levels (FS5; 73%) and that course content is consistent with societal needs (FS10; 72.9%). Responses to the item related to compulsion in major selection (FS1: "I chose this major because my grades only allowed admission to this field") were more diverse, although over half of the students (55.7%) disagreed with this statement. The strongest disagreement was observed for item FS9 ("I was mistakenly admitted to this major"), with 85.3% of respondents disagreeing or strongly disagreeing, indicating that students generally did not regret choosing EMS as their academic field.

With respect to CP, the findings demonstrated that most students showed enthusiasm toward working in the EMS profession. A substantial proportion expressed willingness to be employed in the field (CP5; 78.7% "agree" and "strongly agree") and believed that their professors encourage them to seek appropriate employment opportunities (CP1; 62.2%). Moreover, 69.6% of participants agreed that the educational content of their program aligns with the practical needs of the workplace (CP7). Nevertheless, students expressed more cautious views about the economic and employment dimensions of their career. Approximately 45.9% disagreed or strongly disagreed with the statement concerning satisfactory salary benefits (CP2), while 38.5% selected "no opinion," reflecting uncertainty about financial rewards and job stability in the field. Concerns were also evident regarding the job market, as 45.9% of students disagreed with the statement "I am not worried about the job market in this field" (CP3), whereas only 35.3% agreed. Additionally, more than half of the respondents (55.8%) disagreed with the notion that employment opportunities are better for lower academic levels than for higher ones (CP4), suggesting a general perception that job prospects do not necessarily improve with reduced academic attainment(Table 1).

### Roles of demographic variables

Total scores for attitudes toward the FS and CP were obtained by summing the scores of the corresponding items in each section of the questionnaire. To determine the normality of score distributions and guide the selection of appropriate statistical tests, the one-sample Kolmogorov–Smirnov test was applied. The results showed that the distribution of scores for attitudes toward the field of study ($Z = 0.998$, $p = 0.272$) and attitudes toward career prospects ($Z = 1.255$, $p = 0.086$) did not significantly deviate from normality. These findings confirmed that the assumption of normal data distribution was met, thereby justifying the use of parametric tests in subsequent analyses.

**Table 1** Frequency Distribution of Student Attitudes towards Their Field of Study and Future Career

| Question Code | Questions | Strongly Disagree N(%) | Disagree N (%) | Neutral N (%) | Agree N (%) | Strongly Agree N (%) |
|---|---|---|---|---|---|---|
| **Student Attitudes Towards Field of Study** | | | | | | |
| FS1 | I chose this field because my grades only allowed admission to it. | 41 (33.61) | 27 (22.13) | 17 (13.93) | 16 (13.11) | 21 (17.21) |
| FS2 | I am satisfied with choosing this field. | 3 (2.46) | 4 (3.28) | 23 (18.85) | 31 (25.41) | 61 (50.00) |
| FS3 | The objectives of the courses offered are consistent with students' individual needs and expectations. | 4 (3.28) | 23 (18.85) | 17 (13.93) | 47 (38.52) | 31 (25.41) |
| FS4 | I became more interested in my field after studying in it. | 2 (1.64) | 13 (10.66) | 15 (12.30) | 36 (29.51) | 56 (45.90) |
| FS5 | In my opinion, my field gains more value at higher education levels. | 4 (3.28) | 10 (8.20) | 19 (15.57) | 23 (18.85) | 66 (54.10) |
| FS6 | In my opinion, students from other fields have a favorable view of my field. | 28 (22.95) | 28 (22.95) | 33 (27.05) | 23 (18.85) | 10 (8.20) |
| FS7 | In my opinion, the society I live in has a positive view of this field. | 12 (9.84) | 25 (20.49) | 27 (22.13) | 21 (17.21) | 37 (30.33) |
| FS8 | After completing my bachelor's degree, I will continue my studies at a higher level. | 6 (4.92) | 4 (3.28) | 29 (23.77) | 23 (18.85) | 60 (49.18) |
| FS9 | I was mistakenly admitted to this field. | 70 (57.38) | 34 (27.87) | 9 (7.38) | 6 (4.92) | 3 (2.46) |
| FS10 | The courses offered or educational content are consistent with societal needs. | 4 (3.28) | 6 (4.92) | 23 (18.85) | 53 (43.44) | 36 (29.51) |
| **Student Attitudes Towards Future Career** | | | | | | |
| CP1 | The professors in this field encourage students to find suitable employment. | 6 (4.92) | 10 (8.20) | 30 (24.59) | 38 (31.15) | 38 (31.15) |
| CP2 | In my opinion, the salary benefits of employment in this field are appropriate. | 29 (23.77) | 27 (22.13) | 47 (38.52) | 15 (12.30) | 4 (3.28) |
| CP3 | I am not concerned about the job market in this field. | 12 (9.84) | 44 (36.07) | 23 (18.85) | 25 (20.49) | 18 (14.75) |
| CP4 | In my opinion, employment prospects are better for lower educational levels than higher ones. | 40 (32.79) | 28 (22.95) | 35 (28.69) | 14 (11.48) | 5 (4.10) |
| CP5 | I like working in the field of Medical Emergencies. | 6 (4.92) | 4 (3.28) | 16 (13.11) | 36 (29.51) | 60 (49.18) |
| CP6 | The courses offered are practical and applicable in the workplace. | 0 (0.00) | 19 (15.57) | 16 (13.11) | 47 (38.52) | 40 (32.79) |
| CP7 | The courses and their content meet my occupational needs in the workplace. | 3 (2.46) | 12 (9.84) | 22 (18.03) | 47 (38.52) | 38 (31.15) |

To evaluate potential differences in attitudes toward the field of study and career prospects according to demographic characteristics, specifically, place of residence and marital status, Independent Samples t-tests were conducted (Table 2). The comparison between local students and those residing in dormitories revealed no statistically significant difference in mean FS scores (local: 33.78 ± 6.03; dormitory: 33.85 ± 6.47; $p = 0.967$). Although the mean CP score was higher among dormitory residents (25.11 ± 4.57) compared with local students (22.83 ± 4.15), the observed difference approached but did not reach statistical significance ($p = 0.051$), falling just above the conventional threshold of $\alpha = 0.05$.

Similarly, no significant differences were found in students' attitudes based on marital status. Single students demonstrated a mean FS score of 33.95 ± 6.33, while married students recorded a mean score of 31.20 ± 7.85 ($p = 0.348$). The mean CP scores for single and married students were 24.81 ± 4.52 and 23.80 ± 6.10, respectively, also showing no statistically significant difference ($p = 0.629$). Collectively, these results indicate that neither place of residence nor marital status had a meaningful influence on students' attitudes toward their field of study or future career. The consistency of findings across demographic groups may suggest a relative stability of professional attitudes among EMS students, regardless of personal background factors.

**Table 2** Comparison of Mean Attitude Scores by Demographic Variables (Place of Residence and Marital Status)

| Attitude Score (Dependent Variable) | Demographic Variable (Independent Variable) and Groups | N | Mean (Standard Deviation) | Mean Difference (95% Confidence Interval) | t-statistic (degrees of freedom) | p-value |
|---|---|---|---|---|---|---|
| **Attitude towards Field of Study (FS)** | | | | | | |
| | Native Resident | 18 | 33.78 ± 6.03 | -0.07 (-3.31 to 3.17) | -0.042 (120) | 0.967 |
| | Dormitory Resident | 104 | 33.85 ± 6.47 | | | |
| | Single | 117 | 33.95 ± 6.33 | 2.75 (-3.03 to 8.52) | 0.942 (120) | 0.348 |
| | Married | 5 | 31.20 ± 7.85 | | | |
| **Attitude towards Future Career (CP)** | | | | | | |
| | Native Resident | 18 | 22.83 ± 4.15 | -2.27 (-4.55 to 0.01) | -1.974 (120) | 0.051 |
| | Dormitory Resident | 104 | 25.11 ± 4.57 | | | |
| | Single | 117 | 24.81 ± 4.52 | 1.01 (-3.13 to 5.15) | 0.484 (120) | 0.629 |
| | Married | 5 | 23.80 ± 6.10 | | | |

Analysis of the Difference in Attitude Scores Based on Students' Year of Admission

To examine the influence of academic year on students' attitudes, an ANOVA was performed (Table 3). The results indicated a statistically significant difference in the mean attitude scores toward the field of study across academic years ($F(2, 119) = 5.434$, $p = 0.006$). Specifically, third-year students (1401 cohort; $M = 35.45$, $SD = 5.08$) and second-year students (1402 cohort; $M = 35.30$, $SD = 6.61$) demonstrated higher mean scores compared with first-year students (1403 cohort; $M = 31.59$, $SD = 6.04$). Tukey's post-hoc analysis confirmed that the attitude of second-year students was significantly more positive than that of first-year students ($p < 0.05$).

A similar pattern emerged in attitudes toward career prospects, where a significant difference was observed among the academic year groups ($F(2, 119) = 4.192$, $p = 0.017$). The mean score for second-year students ($M = 26.00$, $SD = 4.65$) was significantly higher than that for third-year students ($M = 22.90$, $SD = 3.82$), as supported by Tukey's post-hoc test ($p < 0.05$). No other pairwise comparisons were statistically significant.

Overall, these findings suggest that academic year plays a meaningful role in shaping students' perspectives on both their field of study and career outlook. The results point to a non-linear progression of attitudes throughout the educational trajectory, with mid-program students demonstrating the most favorable views, possibly reflecting a period of greater engagement and optimism before confronting the challenges associated with program completion and transition to the job market.

## 4 Discussion

The present study aimed to examine the attitudes of prehospital EMS students at the Urmia School of Nursing and Midwifery and the Khoy School of Medical Sciences toward their field of study and future career prospects. The findings revealed that the majority of students hold a positive attitude toward their academic major and are generally satisfied with their choice. This result aligns with previous studies, such as Mobarakabadi et al. in

**Table 3** Comparison of Mean Attitude Scores by Students' Year of Entry

| Attitude Score (Dependent Variable) | Year of Entry (Groups) | N | Mean | Standard Deviation | F-statistic (degrees of freedom) | p-value (ANOVA) | Significant Pairwise Comparisons (Tukey HSD, p < 0.05) |
|---|---|---|---|---|---|---|---|
| **Attitude towards Field of Study** | | | | | | | |
| | 1401 (Year 3) | 20 | 35.45 | 5.08 | 5.434 (2, 119) | 0.006 | Mean 1402 > Mean 1403 |
| | 1402 (Year 2) | 53 | 35.3 | 6.61 | | | |
| | 1403 (Year 1) | 49 | 31.59 | 6.04 | | | |
| **Attitude towards Future Career** | | | | | | | |
| | 1401 (Year 3) | 20 | 22.9 | 3.82 | 4.192 (2, 119) | 0.017 | Mean 1402 > Mean 1401 |
| | 1402 (Year 2) | 53 | 26 | 4.65 | | | |
| | 1403 (Year 1) | 49 | 24.2 | 4.45 | | | |

Arak, which reported positive attitudes among public health students, and research on dentistry and radiologic technology students in Ahvaz, which similarly indicated favorable perceptions of their fields of study.[15,21,22] The observed increase in students' interest after enrollment, as well as their perception of the enhanced value of their discipline at higher academic levels, suggests that EMS education has the potential to motivate and engage students. Notably, although approximately 30% of students agreed that their choice of major was influenced by admission scores, more than 85% disagreed with the notion that their admission was a mistake, indicating that experiences during the program and greater familiarity with the EMS profession foster a positive attitude over time. This finding is consistent with the study by Moghadam et al., which demonstrated that increased awareness and exposure to the field can enhance interest and positive attitudes among medical, dental, and pharmacy students.[28]

Regarding career prospects, most students (over 78%) expressed interest in working in EMS and positively evaluated the encouragement provided by their professors to pursue employment (over 62%). Approximately 70% of students also considered the educational content responsive to workplace needs. These results partially correspond with the findings of Mazaheri and Tahmasbi, who reported positive attitudes toward career prospects among radiologic technology students and graduates.[22] Despite these positive perceptions, substantial concerns were evident regarding salary benefits and job market stability, with nearly half of the students expressing negative or uncertain views. Such concerns are consistent with previous studies in various medical sciences fields, including public health, medicine, and paramedical disciplines, where students often reported apprehension about future employment despite satisfaction with their major.[14,16,20,23-25] For instance, public health students in Lorestan reported negative to moderate attitudes toward their career prospects,[20] and medical students in Isfahan and Qazvin expressed similar concerns,[14,24] reflecting a common pattern of satisfaction with academic choice but uncertainty regarding professional outcomes. Income considerations have also been identified as a critical factor in specialty choice in studies conducted in Saudi Arabia and other Arab countries.[29,30]

Analysis of demographic variables indicated that neither marital status nor place of residence had a statistically significant effect on students' attitudes toward their field of study or career prospects. This observation is in line with the findings of Mobarakabadi et al.[20] and Sadr-Arhami et al.[14] although the very small number of married students in the present study (n = 5) necessitates caution in interpreting results related to marital status. While the mean score of career attitude among dormitory residents was slightly higher than that of local students, this difference did not reach conventional statistical significance ($p = 0.051$).

One of the most noteworthy findings of this study was the significant influence of academic year on student attitudes. Second-year students exhibited more positive attitudes toward their academic major compared with first-year students and toward their future career compared with third-year students, suggesting a non-linear progression of perspectives across the curriculum. This pattern, in which attitudes peak during the middle years of study before being moderated by advanced clinical exposure and impending graduation, warrants further exploration. Comparable findings have been reported by Vetter and Carter, who observed that fourth-year medical students were more inclined toward academic careers than first-year students, reflecting increased experience and familiarity with opportunities.[31] Similarly, Nguyen et al. demonstrated that career preferences can evolve over the course of an academic year with the implementation of counseling programs,[32] while studies of graduate students in the United States have shown higher resilience and motivation during initial program stages.[33] Conversely, Navidjouy et al. in Urmia reported that higher-level students (doctoral stage) exhibited more positive attitudes, highlighting the potential influence of discipline-specific educational structures and experiences on attitude formation.[6] The observed differences in the present study may reflect the developmental trajectory of EMS students, with first-year students still becoming familiar with their field, third-year students facing the pressures of impending graduation and employment realities, and second-year students having gained sufficient exposure to core coursework to appreciate the field's value while not yet confronting end-of-program challenges.

Overall, this study indicates that EMS students are generally satisfied with their field of study and demonstrate a strong interest in pursuing careers in EMS; however, financial and employment-related concerns remain prominent. These findings underscore the need for targeted interventions, including improving employment conditions, providing comprehensive career counseling, revising curricula to align with workplace and community needs, and strengthening internship programs. Previous research has similarly emphasized that curriculum revision, enhanced practical training, and employment opportunities can increase student satisfaction and readiness for professional practice.[20,23]

A major strength of this study is its focus on EMS students, a population that has been relatively underrepresented in research. Nonetheless, the study is limited by its conduct in only two faculties and the use of census sampling, which may restrict generalizability. Future research

should include larger, more diverse samples across multiple universities and explore qualitative factors underlying positive and negative attitudes to achieve a deeper understanding of student perspectives in this field.

## 5 Conclusion

The findings of this study indicate that prehospital EMS students at the Urmia School of Nursing and Midwifery and the Khoy School of Medical Sciences, although largely satisfied with their chosen field and increasingly interested in it throughout their studies, experience significant concerns regarding their future career prospects, particularly in terms of salary and job market opportunities. While students maintain a positive attitude toward the nature of their discipline and express a strong desire to continue in the field, these professional aspirations are moderated by anxieties about future livelihood and employment stability. The students' year of admission also influences their attitudes, with second-year students demonstrating a more positive outlook toward both their major and career prospects compared with first- and third-year students, highlighting the importance of addressing student experiences and concerns at different stages of their education.

Given the critical role of EMS professionals in the healthcare system and the growing societal demand for their services, it is recommended that policymakers and educational authorities enhance student attitudes and motivation by revising curricula, strengthening practical training, improving employment and economic conditions for graduates, and providing targeted career counseling. Such measures are likely to support the recruitment and retention of specialized personnel, ultimately improving the quality of emergency medical services and community health. Future research employing broader and qualitative approaches is guaranteed to gain a deeper understanding of the challenges and needs of students in this field.

## Declarations

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**Artificial Intelligence Disclosure**
The authors used an AI-powered language tool for assistance with grammar checking and the correction of typographical errors. The authors are fully responsible for the final content of the manuscript.

**Authors' Contributions**
In this study, the authors participated in the initial conceptualization, study design, data collection, and drafting of the manuscript. All authors have read and approved the final version. Furthermore, they have no disagreements regarding the various sections of the paper.

**Availability of Data and Materials**
The data and materials used in this study are available from the corresponding author upon reasonable request.

**Conflict of Interest**
The authors of this study declare that this work is the result of independent research and that there is no conflict of interest with other organizations or individuals.

**Consent for Publication**
Not applicable.

**Ethical Considerations**
The present study was reviewed by the Ethics Committee in Research at the university under the identification code IR.UMSU.REC.1404.083 and has received ethical approval. The entire research process was conducted in accordance with the relevant guidelines. All participants were informed about the objectives and procedures of the study, and written informed consent was obtained prior to participation.

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