

RESEARCH NOTE

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The challenges of medical students in their internship : a qualitative study from Iran

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Abstract

Background and objectives Medical students experience different types of challenges during their MD program, which become more challenging when it comes to the internship, putting too much pressure on them. This study aimed to explore the challenges of medical interns of Shiraz University of Medical Sciences (SUMS), Shiraz, Iran.

Methods In this qualitative research, which was conducted from September 2023 March 2024, medical interns of SUMS were selected using purposeful sampling method. The data were collected through deep and semi-structured interviews, and it was continued until data saturation was achieved. The data analysis was performed through thematic content analysis.

Results A total of 13 participants (6 men and 7 women) with a mean \pm SD age of 25 ± 1.6 years were interviewed. The challenges of medical interns consisted of 423 meaning units, 79 open codes, 14 subthemes, and 6 main themes; the main themes consisted of educational challenges, challenges following university regulations, health and behavioral issues, economic/employment-related issues, sociocultural and recreational challenges, and ethical issues.

Conclusion The results of this study highlight the necessity for reforms in the medical internship phase aiming to tackle interns' issues and establish a supportive and nurturing environment for future medical doctors.

Keywords Medical interns, Internship, Challenges, Qualitative study, Iran

Introduction

Medicine is a field of study with great importance in society as it encompasses the knowledge, skills, and practices needed for the diagnosis, treatment, and prevention of illnesses. Studying medicine not only provides individuals with a rewarding and fulfilling career but also plays a crucial role in promoting the overall health and well-being of communities across the globe [1, 2]. The importance of studying medicine can be observed through multiple aspects, such as its influence on individual lives, healthcare systems, and advancements in the field of medical science. Medical internship plays a crucial role in shaping the future of healthcare professionals by offering them practical exposure and hands-on experience in real clinical settings, enabling them to use theoretical knowledge,

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improve clinical skills, and acquire practical experience to various specialties they may choose for their residency. Internships serve as a connection between academic education and practical work experience, allowing interns to work under the guidance of experienced healthcare professionals, observe patient care, take part in medical procedures, and interact with multidisciplinary teams. The responsibilities of medical interns include patients' assessment, diagnosis, treatment planning, and follow-up care, all being supervised by the attendings, residents, and nursing staff. Moreover, interns are responsible for documenting the patients' information, participating in rounds and conferences, engaging in research activities, and cooperating with healthcare teams to ensure the delivery of high-quality patient care [3].

On the other side, it is frequently accompanied by a number of challenges that can significantly affect both the learning process and the overall well-being of the students [3]. According to previous studies, medical interns often encounter various types of stress, such as excessive workloads, exam pressures, and challenges in maintaining a healthy work-life balance [4–6]. Moreover, they are reported to have high rates of depression, yet many do not seek mental health treatment due to time constraints, limited accessibility, and concerns about confidentiality, which tragically increases the risk of suicide among them [7–9].

To improve the quality of internship experiences, it is crucial to have a clear understanding of the specific challenges faced by medical interns, particularly in the aftermath of the COVID-19 crisis. Therefore, this study aimed to provide valuable insights into specific areas that pose obstacles to medical interns' growth and development, which would help policymakers to design evidence-based plans to mitigate or overcome them.

Methods

Study design and data collection

This qualitative research was conducted from September 2023 to March 2024 in Shiraz, Iran. The data in this study was carried out through deep and semi-structured interviews with the target population. Medical interns of SUMS, who had completed at least one year of their internship program were eligible to participate in this study.

They were selected through purposive sampling, and after providing them with information about the objectives of the study, they were enrolled if they expressed willingness to participate. If they preferred to have a phone interview, we performed the interview as they wished. Written informed consent was obtained from each of them, and their verbal consent were recorded during the interviews.

It should be noted that in order to maintain diversity in the target group, interns of both genders, with different ages, races, ethnicities, nationalities, and serving in different wards were invited to participate.

The interviews began with a primary question: "What challenges did you face in your internship period?" Additionally, follow-up/probing questions like "How?", "Why?", and "May you explain more?" were also asked. Furthermore, some of the questions were adjusted and modified based on the analysis of the initial interviews. The interviews took place at a convenient time for the participants and were conducted in a quiet location. To ensure uninterrupted recording of the interviewees' voices, two tape recorders were used, thus minimizing any potential problems or disruptions.

Data analysis

Data collection and analysis were done concurrently. The interviewer precisely transcribed the recorded audio files and took notes during the interviews. Following each interview, the transcript was written and thoroughly reviewed multiple times to gain a general understanding of its content. The data analysis for this part involved utilizing the smith method [10]. The texts were carefully reviewed, and the meaning units were extracted. Then, open codes were shaped, and we categorized them into subthemes. Next, the main themes were created via interpretation of the subthemes. The interviews continued until data was saturated, and no new codes was extracted. Finally, the study finished with a total of 13 interviews, ranging from 28 to 42 min, with an average time of 34 ± 8 min.

Trustworthiness

To ensure the quality of the study, we used the Guba and Lincoln method [11], which encompasses four criteria: credibility, confirmability, dependability, and transferability [12].

Credibility, was assured through multiple methods to ensure data are appropriate. For example, extensive engagement with data was performed through in-depth interviews and persistent observation which facilitated bracketing. Also, data source, investigator, and theoretical triangulation were used. Internal checks were done participant validation or member checks, researcher's self-monitoring and expert member checks. Also, external checks were done through peer debriefing. Searching for disconfirming evidence was considered. Moreover, all contributors of this study specially the corresponding author have a great background in qualitative research which increased the study's credibility.

The data transferability was ensured by providing a comprehensive explanation and thick description of the topic, along with the characteristics of the interviewees,

and through the collection and analysis of the data. Also, purposive sampling technique was used to select participants can be the representative of the target population.

To increase dependability, a prominent independent researcher specializing in qualitative research, who had no involvement in this project, was recruited to conduct audits evaluating the research process and results.

Data confirmability was ensured by the lead researcher by meticulously recording and documenting every stage of the research process. Also, the audit trail increased confirmability.

Results

Overall, 7 women and 6 men participated in this study. Their mean \pm SD age was 25 \pm 1.6 years. In addition, the mean time from starting the internship period was 12.5 \pm 4.4 months (Table 1).

After performing deep and semi-structured phone interviews, we identified the participants' challenges during their internship program. Totally, 423 meaning units and 79 open codes were extracted. Then, we reached 14 subthemes; finally, six main themes including educational challenges, challenges following university rules, health and behavioral issues, economic/employment-related issues, sociocultural and recreational challenges, and ethical issues were provided (Fig. 1).

More details in terms of their challenges are explained below as well as in Table 2.

Table 1 Demographic characteristics of the participants (n = 13)

Characteristics	Divisions	Frequency (%)
Gender	Male	6 (46.2)
	Female	7 (53.8)
Relationship status	Single	9 (69.2)
	In a relationship	3 (23.1)
	Married	1 (7.7)
Employment status	Yes (except being an intern)	4 (30.8)
	No (just being an intern)	9 (69.2)
Expenses equals monthly incomes	Yes	2 (15.4)
	No	11 (84.6)
Place of residence in Shiraz	At the parents' house	4 (30.8)
	At a rented house with other students	2 (15.4)
	At dormitory	7 (53.8)
Starting / increasing alcohol consumption / smoking / substance use during internship	Yes	7 (53.8)
	No	6 (46.2)
Starting / increasing the symptoms of mental health conditions requiring medication during internship	Yes	9 (69.2)
	No	4 (30.8)

Challenges of medical interns

Educational challenges

The first theme extracted from the data analysis was educational challenges, which included the sub-themes of limited medical knowledge, amount of study materials and number of exams, lack of a proper training in the internship stage, and challenges regarding MD Thesis.

According to the interviews with medical interns, they felt challenges regarding their medical knowledge. Inadequate medical knowledge and amount of study materials and number of exams were the issues that made them feel so stressed. One of the participants noted:

"All people, I mean attendings, residents, and even our family members, think that an intern knows everything, while it is not the case. The number of study materials and exams were so large that I could not even read the reference books completely once, and I had to read summary books to pass the non-standard and very difficult exams. This, this high expectation makes me much worried and stressed, to the point where I don't even dare to ask the residents and attendings about what I don't know because I am afraid of becoming embarrassed." (Participant 1, male).

Lack of a proper training in internship stage was another important challenge, which was reported by many of them. They claimed that the curriculum of the MD, as well as its internship, is very specialized and super-specialized and does not prepare them for functioning as a GP. This disproportion of training with the educational level makes them very worried about how they should offer healthcare services for the manpower planning after their graduation. One of the participants mentioned:

"All trainings are specialized and super-specialized and focus on complicated patients. We only have two months of internship related to family medicine, while the focus of our internship should be in this area. Maybe, I will never enter the specialization level, so why should I attend such complicated trainings instead of GP-related training? Can you believe I know how to manage liver cirrhosis, but I don't know what to do if a patient comes in with diarrhea or a cold." (Participant 3, female).

Moreover, many of the participants expressed their dissatisfaction with presenting too many lectures from their reference books instead of receiving practical trainings by attendings. They also express concerns about group training of medical students across all stages of education, from studentship to fellowship. They believe that this type of training could be beneficial, considering that

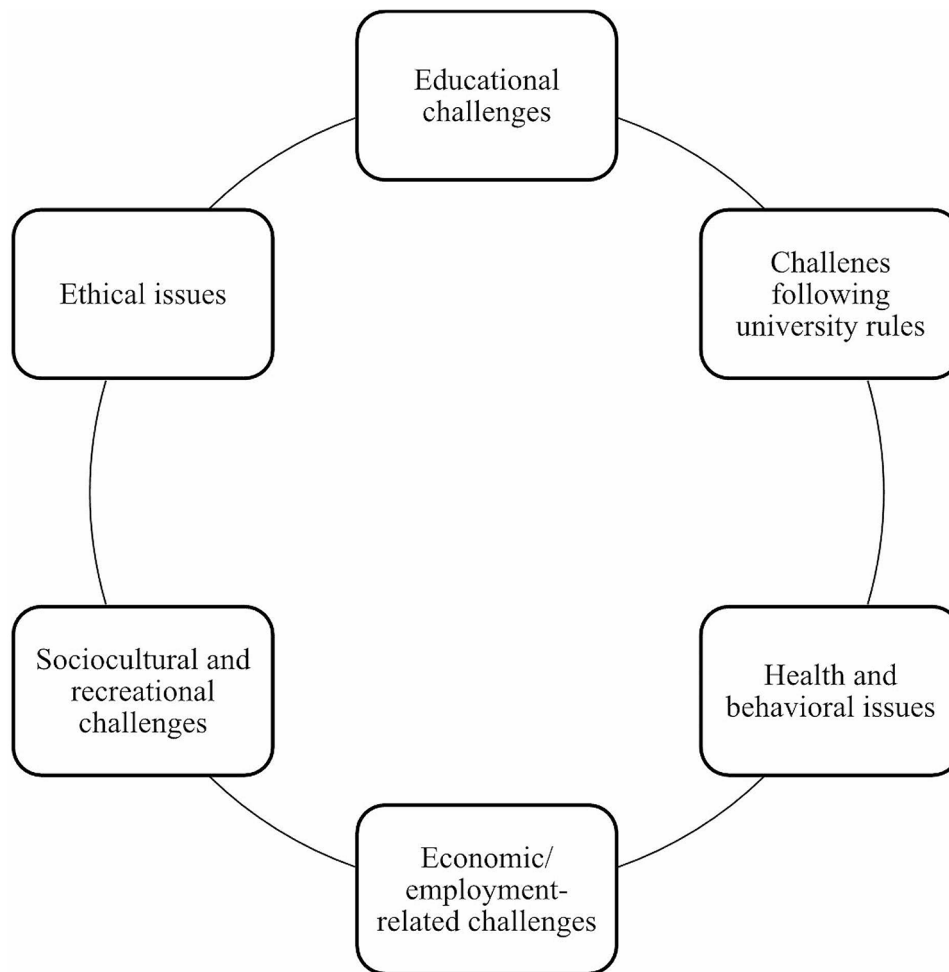


Fig. 1 Main themes of the challenges of medical interns

Table 2 Challenges of medical interns

Themes	Sub Themes
Educational challenges	Limited medical knowledge Amount of study materials and number of exams Not receiving a proper training in internship Challenges regarding MD Thesis
Challenges following university rules	Inappropriate rules
Health and behavioral issues	Starting / increasing Physical issues Starting / increasing psychological issues Starting/increasing high risk behaviors
Economic/Employment-related issues	Financial concerns
Sociocultural and recreational challenges	Interfering with / stopping sociocultural habits and plans Interfering with or stopping recreational and leisure plans
Ethical issues	Job-related abuse Research-related abuse Violence and harassment

each educational stage has different educational needs. Additionally, they mentioned that many educational materials are out of date, hindering them from receiving a quality practical training. Furthermore, some participants had complained about MD thesis they have to offer to be graduated. In this regard, an intern said:

“The internship itself is already very demanding, and adding a thesis to it only increases the pressure on an individual. Throughout the seven-year medical program, there is minimal focus on research, yet, during the internship, we are required to conduct research amidst heavy workload at hospital, sleep deprivation, numerous lectures and exams, which can be overwhelming. I had to request a leave from the hospital wards to collect data for my research, and the attendings assumed that I was using thesis project as an excuse to skip my clinical duties. Personally, I find the thesis to be pointless, as my passion lies in clinical practice, not in research.” (Participant 8, female).

Challenges following university regulations

The second theme extracted from the data analysis was negative experiences related to university regulations. Some interns in this study were worried about inappropriate regulations established by the university or ministry of health. One of them said:

“Every single day, they establish a new legislation, leading to a lack of stability. See how much the expenses of man-power planning and service obligations have increased based on the recent unfair laws. As per regulations, interns are not allowed to engage in additional employment or even take more shifts for making money, risking suspension. Additionally, these irrational and unfair regulations created many challenges for those who want to immigrate. Well, obviously, when we can’t even predict the future of our career and life, we get anxious. You can see that many of our friends committed suicide in the country because they could not bear this level of instability and pressure.” (Participant 11, male).

Health and behavioral issues

The third theme identified through data analysis pertained to the health and behavioral problems experienced by medical students because of their internship. It included the sub-themes of physical health issues, psychological health issues, and behavioral issues.

Due to the interviews with medical interns, they reported experiencing various physical symptoms such as persistent headaches, backaches, neck pain, muscle pain, fatigue, insomnia, poor-quality sleep, and gastrointestinal issues that either began or worsened during their internship due to the excessive pressure they faced during this period. Additionally, most of the participants stated that they suffered from transitory psychological problems in their internship stage such as stress, anxiety, irritability and nervousness, and aggression. An intern mentioned:

“I am aware that I become extremely anxious and nervous in this period. I feel irritable, short-tempered, and would easily get into arguments with everyone. All people know that insufficient sleep and eating problems can lead to increased aggression, decreased attention span and concentration, and impaired memory. How can I be expected to study effectively after only getting four hours of sleep following a 24-hour shift? After a full day’s shift, the following day I am exhausted, and upon waking up, I feel completely confused due to my disrupted sleep pattern. Thus, at this point, my focus is solely on getting through each day and surviving, and I no longer care about becoming a good physician or anything

else. You know, at this stage nothing can make me happy, and I don’t enjoy anything. I just want to survive.” (Participant 13, male).

Moreover, many of them mentioned that low confidence, fear of making medical errors, feeling of guilt following medical errors and persistent self-blame, overthinking, feeling of inadequacy and worthlessness, and feeling of embarrassment and humiliation were among the negative emotions they experienced during this period, causing significant distress for them. Additionally, a few participants mentioned that feelings of loneliness, and lack of hope and motivation led to depression and a few participants claimed that, after couple of months of starting depression without treatment, they reported experiencing delusions or suicidal thoughts. A participant noted:

“For five months, I had no social contact with anyone, and I couldn’t tolerate even a little more pressure. I had completely isolated myself. I thought that I, who wanted to serve humanity, could not manage even one hospital ward now. I was ready to give my all so that I could leave the hospital 5 minutes earlier. I told the residents and attendings that I was not feeling well, but they did not believe me, and they thought I wanted to make an excuse. I think our health is not important for them; they look at us as a work force, not a human or patient. My music taste changed, and I only listened to heavy metal music. Every night, I cried and hoped that I wouldn’t wake up and would die. Every time I took a shower, I saw this scene that I am drowned in my own blood. I thought if I did not have the courage to commit suicide, at least I could change my lifestyle to the point where death would happen to me, for example, smoking cigarettes, using drugs, drinking alcohol.” (Participant 2, male).

Also, some of them said that they started or increased risky behaviors such as using tobacco and drugs, multiple sexual contacts with various partners and unsafe driving during this period because they thought it could reduce their mental pressure and anxiety.

Economic/employment-related issues

The fourth theme identified through data analysis was the economic and employment-related issues; all the participants emphasized this as the most significant challenge that was a burden on them during this period. An intern claimed:

“The money we receive is not a salary as it is not tied to the hours or workload we put in. It’s merely a small allowance, ranging between 40 and 60 dollars

per month. This amount is insufficient to cover our basic needs. Thus, I have to get other jobs; however, I know this is illegal. I have reached a point where I prefer not to rely on my family for even the smallest expenses, and I feel embarrassed about it. I constantly worry about running out of money midway through the month. The stress of the internship itself is too much, which is also added. Now, all our peers in other majors have provided basic amenities for themselves, but what about us? At this age, we have nothing.” (Participant 9, male).

Sociocultural and recreational challenges

The fifth theme extracted through data analysis was challenges in sociocultural and recreational areas. The participants believe that high workload and its consequences have left them in a situation where they no longer care about their sociocultural habits and plans and recreational and leisure plans and even quit them. Two participants noted:

“At this age, I feel very lonely, and I really like to date someone and get married, but I find myself lacking time, money, sufficient rest, and peace of mind. Therefore, it would be better for me to be single; otherwise, love failure will add to my other misfortunes.” (Participant 6, female).

“I used to exercise, but since the internship, I didn’t have the time for that anymore and that ruined my mood a lot. I don’t have time to join my friends’ gatherings or even taking a trip; of course, I don’t have the money either.” (Participant 10, female).

Ethical issues

The sixth theme extracted through data analysis is ethical issues, which included the sub-themes of job-related abuse, research-related abuse, and violence and harassment. They complained that they were given unrelated mandatory tasks that they must perform due to a strict hierarchical and leveling system and if they disagree, there would be consequences for them. They particularly expressed sadness from being bullied by the residents and thought that the hierarchical system made an opportunity for residents to abuse medical interns. In terms of research, they also stated that some residents and attendings recruited the interns in their research projects; finally, they did not respect the authorship rights of interns. Also, some of them stated that they were harassed verbally, physically, visually, and sexually by some attendings, residents, and professors.

Discussions

Based on our findings, medical students experience several challenges in their internship period including educational challenges, challenges following university regulations, health and behavioral issues, economic/employment-related issues, sociocultural and recreational challenges, and ethical issues.

Similar to our research which showed that medical interns thought they did not have enough medical knowledge to work independently in their internship, a study by Capinpuyan and Miguel discussed the challenges faced by interns due to their lack of experience and knowledge, which can potentially lead to harming patients they serve [13]. Additionally, a study by D’Eon focused on the knowledge loss of senior undergraduate medical students and emphasized the issue of retaining information among these students [14]. Also, our study showed that medical interns complained regarding memorizing a large volume of study materials and lack of enough time for studying them. Moreover, they felt difficulties regarding overwhelming exams with non-standard questions. Furthermore, medical interns criticized not receiving proper training in this period. Similarly, a study by Kulkarni showed that medical interns claimed to have insufficient training, supervision, and support, impacting the interns’ ability to acquire necessary skills and competencies [14]. Therefore, it is recommended that hands-on training for interns should be prioritized with a specific emphasis on equipping them with the necessary skills and knowledge for a GP-related roles and associated responsibilities. MD thesis was another challenge medical interns were faced with. Given that the MD program is a professional program and not research one, the provision of the thesis should be removed so that the interns can better focus on their clinical works.

Moreover, the unstable, irrational, and unfair regulations by universities and Ministry of Health in Iran pose a concern for medical interns, leading to uncertainty in making decisions about their future and exacerbating their anxiety. While evidence shows that the migration of Iranian medical doctors has been a significant issue, leading to a substantial exodus of healthcare professionals from Iran [15], recent strict laws are not the solution and the situation only increases the anger of doctors and medical students in Iran and make them more determined to emigrate. Also, the allowance they receive should be sufficient to meet all their expenses, eliminating the need for them to seek additional employment during this critical period.

Our research findings have demonstrated that medical interns encounter a range of health concerns and behavioral issues. In this regard, a study by Howie et al. indicated that better physical health and lower body pain of medical students were associated with their participating

in any leisure time physical activity and having a quality sleep [16]. Similar to our research, two studies investigated the mental health consequences, including depression, anxiety, stress, insomnia, and loneliness, among intern doctors, shedding light on the psychological challenges faced by interns, particularly during the COVID-19 pandemic [17, 18]. Also, a research by Zhao et al. indicated that many medical interns in Kenya and Uganda reported suffering from stress, depression and burnout, working unreasonable hours due to staff shortages, and being treated like they are nobody [19]. Additionally, a study conducted by Jahangiri et al. mentioned that medical students in Iran had a high level of depression and suicidal thoughts [20] and a recent research by Ghorbanpour et al. demonstrated that 25% of medical students of SUMS reported experiencing suicidal ideation [21]. Moreover, our findings revealed that high-risk behaviors among medical interns were an important concern. Similarly, a study by Marcon et al. demonstrates that there is a high-risk of alcohol drinking among medical students, among which tobacco and cannabis use and family income were the most important predictors [22]. Likewise, a study carried out by Shabila et al. also revealed that medical students in Erbil, Iraq, reported high frequencies of several serious risky driving behaviors [23]. In contrast to our results, research showed that most of sexually active medical students had a safe sex and monogamous relationships, and a low percentage was engaged in high-risk behaviors like involvement with commercial sex workers or multiple sexual partners [24]. Health issues and behavioral issues of medical interns are very important challenges which call for an immediate action. It is recommended that the interns' physical, mental, and behavioral well-being should be regularly monitored to promptly identify and address any new symptoms that may arise.

According to our results, interns also face financial difficulties stemming from inadequate allowance and no work permit. The lack of financial support for interns can impact the quality of their work and study [13]. This highlights the need to address this issue through allocating more budgets.

Our research found the medical interns had challenges regarding their sociocultural and recreational activities. Evidence showed that participating in sociocultural and recreational activities was essential for the youth to experience personal development, connect socially, and enhance their skills. Involvement in arts and cultural endeavors can bring about advantages like strengthening social ties, offering personal enjoyment, and fostering skill enhancement [25]. Nevertheless, juggling these activities alongside the rigors of medical training can pose a difficulty for medical interns, necessitating efficient time management and prioritization to uphold a

harmonious work-life balance. Many students lack the knowledge of how to establish a balance between their work and personal life and effectively utilize their free time. Therefore, it is essential to receive training from experienced consultants in this matter and have their situation continuously assessed. Furthermore, it is advised that universities periodically plan compulsory and free recreational programs for medical interns to improve their physical and mental well-being.

The present study also demonstrated that medical interns felt abused in terms of their clinical job and research. Therefore, supportive regulations should be established to clearly outline their responsibilities and rights, ensuring that no one can abuse them because of their undergraduate level of education. Moreover, a few participants were bothered by some types of violence and harassment. In this regard, a study indicated that 3 out of 4 female interns experienced sexual harassment [26], which is a high rate and needs further investigations. It is a very important and sensitive challenge, requiring a more reliable and intern-centered supervisory system to ensure the dignity of interns regardless of the power of attendings and residents and the hierarchical system.

Limitations

While purposive sampling is a valuable tool, it may pose a bias to the research regarding being informative and representative. So, we tried to establish specific, justifiable criteria for selecting participants based on the research questions and aims, which made the sampling rationale explicit and reduced researcher bias. Also, the maximum variation sampling was considered to help capture a higher range of perspectives and increase generalizability, although we know that the qualitative studies cannot be generalizable in the same statistical sense as quantitative research. Moreover, an iterative approach of sampling, analyzing and re-sampling was done to ensure theoretical saturation, allowed us to fill gaps in the sample as they emerge.

Conclusion

Based on the obtained results, medical interns have various challenges, especially regarding their psychological health and economic status. It is suggested that policy-makers and decision-makers in ministry of health and medical sciences universities should establish necessary reforms regarding medical students' challenges during the internship period and develop strategies to tackle the issues faced by them.

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Author contributions

F.Sh. and M.A.M. were responsible for the study conception and design. All authors prepared the first draft of the manuscript. All authors did the analysis of the data and supervised the study. All authors have read and approved the final manuscript.

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Data availability

The datasets used and analyzed during the current study available from the corresponding author on reasonable request.

Declarations**Ethics approval and consent to participate**

The study proposal was approved by ethics committee of Shiraz University of Medical Sciences encoded IR.SUMS.NUMIMG.REC.1402.151. Informed consent was obtained from all subjects. Prior to conducting each interview, all participants were given sufficient information regarding the study objectives, and written consent was obtained from them. The interviewees were assured that the interviews would remain confidential, and audio files and notes would be saved anonymously. They were also informed that they could withdraw from the study at any stage they wish.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

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