



Voice of Resilience: A Qualitative Content Analysis Study of the Experiences of Mother Students in Medical Sciences in Iran

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Abstract

Background: Mother students in the medical sciences face unique challenges that often intensify their stress compared to their peers in other disciplines. Balancing academic demands with parenting responsibilities, they encounter financial difficulties, health issues, and family emergencies. Recognizing these specific needs is crucial for educational institutions to develop effective support systems.

Objectives: The present study offers crucial insights into the experiences of mother students in facing the challenges of multiple roles in Iran's medical sciences, a subject largely neglected in current literature.

Methods: This qualitative study utilized conventional content analysis to identify themes and patterns in the experiences of mother students. Conducted from October 2023 to September 2024 at Mashhad University of Medical Sciences in Iran, the study involved semi-structured interviews with 15 mother students, selected based on the criteria of being current students enrolled in various medical disciplines. The sample size was determined using the principle of data saturation, ensuring comprehensive insights without redundancy.

Results: The analysis revealed two main themes: "Demands of Mother Students" and "Coping Ability in Mother Students". The demands included "Educational Needs" and "Emotional and Social Support", while coping ability in mother students includes three categories: Coping strategies, empowerment through education, and empowerment through spirituality.

Conclusions: This study concludes that Iranian medical science students who are mothers face significant challenges, underscoring their need for tailored educational, emotional, and social support. Maternal efficacy, awareness of security threats, and supportive networks are key to fostering resilience. Educational institutions should implement targeted support systems to improve the academic success and well-being of these students.

Keywords: Medical Students, Mothers, Resilience, Qualitative Research, Iran

1. Background

Higher education in Iran has seen a notable increase in the enrollment of women, including student mothers. However, their experiences are often overlooked in academic discussions and policy. Student mothers face unique challenges in balancing

educational and caregiving roles, especially in a cultural context that may not fully support these dual responsibilities. Exploring their needs is essential to develop support systems that enhance their academic success and well-being (1). In medical fields like nursing and midwifery, the demands of academic responsibilities are compounded by maternal duties

and clinical placements, necessitating enhanced educational support to help them thrive (2, 3).

Student mothers encounter multiple barriers, including the stress of rigorous coursework and clinical training, while managing childcare and family duties (4, 5). Some research highlights their struggle to balance these responsibilities, leading to stress that negatively impacts academic performance and mental health (6, 7). Additionally, societal stigma and expectations exacerbate feelings of isolation and guilt (8). Institutional neglect, such as inadequate childcare, forces these students to sacrifice either academic or family needs, undermining their education (9, 10). Financial pressures also significantly impact their experiences, as the costs of education and raising children create substantial stress, often forcing them to work part-time (11). This precarious situation can lead to a cycle of stress and anxiety, further impairing their ability to focus on their coursework and excel academically (7).

However, despite these challenges, many student mothers demonstrate exceptional resilience and manage to achieve academic success while raising their children (12). This resilience allows them to succeed academically while fulfilling their maternal roles and balancing the demands of their families (13). They navigate not only the academic landscape but also the cultural and social expectations placed upon them as mothers (14). Understanding their needs and coping strategies is essential for developing effective support systems (7, 15, 16). While literature on student resilience is growing, specific studies on student mothers in Iran are limited (17, 18). Research reveals a gap in understanding the intersection of motherhood and education within this cultural context, emphasizing the need to address the unique pressures these mothers experience (6, 19).

Iran's unique cultural and economic context shapes student mothers' struggles with time, finances, and stress, harming both their education and well-being. The studies address a key research gap on the motherhood-education intersection (3, 20). These findings resonate with the experiences of Iranian student mothers, who navigate similar pressures, although influenced by unique cultural expectations and societal norms that may further complicate their situation (21, 22). In Iran, the cultural significance of motherhood often emphasizes traditional roles that can conflict with academic aspirations (23, 24). The pressure to conform to societal expectations of being a devoted mother can lead to internal conflicts for student mothers who are pursuing higher education (25).

The studies underscore a resilience framework, showcasing how these mothers develop coping strategies to navigate their dual responsibilities (26, 27). The present study aims to amplify the voices of Iranian student mothers by documenting their unique experiences and the systemic barriers they face. Although the literature on student resilience has grown, it largely overlooks the specific challenges encountered by Iranian student mothers, leaving a significant gap in understanding the complex intersection of motherhood and higher education within this context. A qualitative approach is crucial to capturing the nuanced realities of their lives – encompassing cultural expectations, social norms, and personal struggles – that cannot be fully addressed through quantitative methods. Gaining this in-depth understanding is essential for developing effective support systems tailored to their needs within Iranian higher education. Ultimately, the goal is to shed light on their experiences, emphasizing the challenges and systemic obstacles that shape their educational journeys.

2. Objectives

The present study aimed to explore the experience of Iranian mother students in medical sciences in facing the challenges of multiple roles, a topic that has been largely ignored in the current literature.

3. Methods

3.1. Study Design

This qualitative study employed conventional content analysis to explore the experiences of Iranian student mothers in medical sciences and their challenges, needs, and resilience in balancing multiple roles.

3.2. Setting and Sample

This study, conducted at Mashhad University of Medical Sciences from October 2023 to September 2024, explores the experiences of mother students across various academic levels, from bachelor's to doctoral degrees. Utilizing qualitative research methods, it examines real-life settings where participants engage in their daily lives (28), such as homes, neighborhoods, and classrooms, to gain insights into the environments influencing these students. Participants for the study were selected through purposive sampling with a maximum diversity strategy, considering factors like age, field of study, and educational level. The study included 15 mother students from various disciplines

within the Department of Medical Sciences. All participants consented to take part and communicated in Persian, sharing their experiences of managing multiple roles. The only exclusion criterion was any physical or mental illness that could impede participation in the study. Participants were recruited through targeted outreach, including flyers and announcements in relevant academic departments. The sample size was determined using the principle of data saturation, ensuring comprehensive insights without redundancy. To minimize potential sources of bias, we ensured a reflexive approach throughout the research process, which included continuous self-reflection by the researchers and member checks with participants to validate the findings. This approach ensured that the sample size was sufficient, as the researchers explored participants' experiences thoroughly until they reached a point where additional interviews would not yield new information.

3.3. Interview Procedures

Data were collected through 15 semi-structured, in-depth, face-to-face interviews, recorded at the participants' convenience, with the first author taking notes. Interviews continued until data saturation was reached, and two additional interviews were conducted to confirm this when new information emerged. An interview guide featuring open-ended questions was used, starting with, "Please describe your experience of balancing roles simultaneously?" and including follow-up questions about participants' needs. The average interview duration was 45 minutes, ranging from 30 to 90 minutes. The interviews employed open-ended questions to assess specific variables related to their academic challenges, parenting responsibilities, and available support systems, allowing us to gather rich qualitative data.

3.4. Data Analysis

A conventional content analysis approach was employed to address the research question, with data being analyzed concurrently during collection using Graneheim and Lundman methods (29). This process examined individual experiences, revealing conflicting opinions and unresolved issues supported by MAXQDA software (version 20). After each interview, the first author reviewed the recordings multiple times for an overview and then translated them verbatim for comprehension. The interview texts were divided into meaning units – words, phrases, sentences, and paragraphs – which were condensed, abstracted, and assigned descriptive codes. These codes were then

categorized into subcategories based on similarities and differences, ultimately leading to the identification of key themes.

3.5. Ethical Considerations

This study was approved by the Local Research Ethics Committee of Mashhad University of Medical Sciences, Iran (IR.MUMS.NURSE.REC.1402.019). In accordance with the Helsinki guidelines of the Declaration of Helsinki, all the experimental protocols involved human subjects (30). The participants were informed about the study's purpose and voluntary role, including their right to withdraw without consequence. Their data privacy and confidentiality were assured. Written informed consent was obtained before the interviews. If any question caused discomfort, the interview was paused and resumed with the participant's consent. At the end of the interviews, the participants were provided with information on counseling services to support their needs and resilience as students.

3.6. Strategies to Achieve Rigor in the Study

The study assessed data trustworthiness using Lincoln and Guba's criteria: Credibility, conformability, dependability, and transferability. Credibility was achieved through member checks with participants and confirmation from three expert coauthors, alongside maximum variation in sampling. Conformability involved reviewing findings and interpretations by three supervisors and establishing an audit trail, while two independent qualitative researchers validated the research process for dependability. To enhance transferability, the study included a thorough description of the culture, context, participant selection, characteristics, data collection, and analysis, supplemented by relevant quotations in the results (31, 32).

4. Results

4.1. Participants' Characteristics

The participants included 15 mother students studying in medical sciences, specifically in the fields of dentistry, midwifery, nursing, laboratory sciences, and public health. These participants represented various academic levels, including bachelor's, master's, doctoral, and professional doctorate degrees. The profile of the participants is shown in Table 1.

In this study, 960 codes, nine subcategories, five categories, and two main themes emerged from the data analysis. The data analysis procedures identified

Table 1. Characteristics of Participants

Row	Age	Education Level	Number of Children	Residential Type	Interview Duration (min)	Interview Location
1	29	Dental student	1	Native	50	Faculty of Dentistry
2	33	PhD student in reproductive health	2	Nonnative	70	Faculty of Nursing and Midwifery
3	29	Pediatrician student	1	Nonnative	52	Participant's house
4	32	Nursing undergraduate student	1	Native	60	Faculty of Nursing and Midwifery
5	40	PhD student in healthcare management	1	Nonnative	30	Faculty of Health
6	35	PhD student in nursing	1	Native	90	Faculty of Nursing and Midwifery
7	39	PhD student in environmental health	2	Native	50	Faculty of Health
8	41	PhD student in nursing	1	Nonnative	60	Faculty of Nursing and Midwifery
9	43	Senior nursing student	3	Nonnative	55	Faculty of Nursing and Midwifery
10	35	Midwifery graduate student	2	Nonnative	52	Faculty of Nursing and Midwifery
11	25	Dental student	1	Native	65	Faculty of Dentistry
12	32	Senior student of laboratory sciences	3	Native	56	Faculty of Laboratory Sciences
13	21	Midwifery undergraduate student	1	Native	50	Faculty of Nursing and Midwifery
14	24	Medical student	1	Native	40	Faculty of Medicine
15	28	Master's student in environmental health	2	Native	45	Faculty of Health

two main themes: “Demands of Mother Students” and “Coping Ability in Mother Students”. The demands of mothers comprised two categories: “Educational Needs” and “Emotional and Social Support”. Coping ability in mothers comprises three categories: Coping strategies, empowerment through education, and empowerment through spirituality. The detailed breakdown of these themes and categories is presented in [Table 2](#).

4.2. Theme 1: Demands of Mother Students

Many student mothers highlighted their challenges related to academic needs, emphasizing the need for support and flexibility to balance their multiple roles.

4.2.1. Category 1: Educational Needs

Mother students in medical sciences faced significant challenges in balancing their various roles and responsibilities. In discussing their experiences, they highlighted unrecognized educational needs specific to their field, which were categorized into two main areas: Access to resources tailored for medical students and flexibility in the curriculum to accommodate their unique circumstances.

4.2.1.1. Access to Resources

Iranian mother students in the medical sciences have a strong need for accessible educational resources that cater to their unique circumstances. They expressed the necessity for facilities such as libraries that allow them to bring their children, daycare centers next to these libraries to care for their kids, online course materials,

virtual classes at home, and tutoring services that accommodate their schedules. One participant explained this matter as follows:

"I wish there were more places where I could study with my child by my side, like a library with a daycare. It would make it so much easier for me to focus on my education while knowing that my little one is safe and cared for" (participant 8).

"I often feel torn between my responsibilities as a mother and the demands of my studies. Access to online classes with flexible schedules and home-based resources would make a meaningful difference, allowing me to better balance my child's needs with my educational goals" (participant 12).

4.2.1.2. Flexibility in the Curriculum

Mother students faced significant challenges in balancing their various roles and responsibilities. In discussing their experiences, they identified unmet educational needs that were categorized into flexibility in the curriculum.

"Greater flexibility in the curriculum would allow me to truly thrive in all my roles. It means being present for my family while still pursuing my dreams. Options like evening classes or online resources would enable me to integrate my education into daily life and nurture both my career and family aspirations" (participant 5).

4.2.2. Category 2: Emotional and Social Support

This category highlights the essential emotional and social resources needed by medical student mothers to

Table 2. Primary and Secondary Themes of the Experience of the Voice of Resilience and the Needs of Iranian Student Mothers

Themes and Categories	Subcategories
Demands of mother students	
Educational needs	Access to resources; flexibility in the curriculum
Emotional and social support	Childcare solutions; peer support networks; spiritual needs
Coping ability in mother students	
Coping strategies	Time management skills; stress reduction practices
Empowerment through education	Goal-oriented mindset; building a future for the family
Empowerment through spirituality	Finding inner strength; balancing; roles through spiritual practices

balance education and motherhood. Support through childcare solutions, peer networks, and spiritual resources can significantly improve their well-being and academic success.

4.2.2.1. Childcare Solutions

Student mothers identified the need for reliable childcare services on or near campuses as crucial. Affordable and trustworthy childcare would ease their burden, allowing them to focus on their studies and participate in campus activities, thereby enhancing their academic experience.

"Having access to reliable childcare services on campus would be transformative. It would allow me to fully focus on my studies without the constant worry about my child's well-being" (participant 1).

4.2.2.2. Peer Support Networks

Interviews highlighted the significance of peer networks among student mothers, emphasizing that connecting with others in similar situations fosters community and support. These networks offer emotional encouragement and practical advice, helping them manage the challenges of motherhood and academia.

"Connecting with other student mothers has been a lifeline. Sharing our struggles and celebrating our triumphs together reminds me that I'm not alone on this journey" (participant 6).

4.2.2.3. Spiritual Needs

Participants expressed a strong need for spiritual support, stating that resources like counseling, spiritual spaces, and faith-based groups could help them navigate the emotional challenges of balancing motherhood, education, and family responsibilities. Such spaces allow for reflection, connection, and guidance, which can enhance their comfort and resilience in coping with stress. One student's mother

highlighted her desire for spiritual resources to promote her mental and emotional well-being and achieve balance in her multiple roles.

"Having a space to reflect on spirituality and find meaning in my life helps me manage the stress that comes with being a mother, a student, and a wife. That sense of balance is essential to my well-being" (participant 10).

4.3. Theme 2: Coping Ability in Mother Students

This topic showcases the strength and determination of medical student mothers as they juggle education and parenting. Their resilience is evident in the coping strategies they develop, adapting to challenges while maintaining motivation and overcoming obstacles through their educational pursuits.

4.3.1. Category 1: Coping Strategies

This category highlights how medical student mothers manage their responsibilities through effective coping strategies, enhancing their resilience. They develop practical skills like time management and stress reduction while also drawing on spirituality to balance their roles and find purpose in their busy lives.

4.3.1.1. Time Management Skills

Many student mothers develop practical time management skills to fulfill their responsibilities, which increases their flexibility in the face of academic and personal demands. One student mother described how mastering time management allows her to balance her roles effectively and demonstrate flexibility in handling multiple responsibilities.

"I have learned to prioritize my responsibilities and develop a schedule that supports both my academic commitments and family life. For me, it's about making the most of every moment and staying intentional with my time" (participant 15).

4.3.1.2. Stress Reduction Practices

The participants shared various practices, such as mindfulness, exercise, and social support, which help them manage stress, contribute to their emotional well-being, and strengthen their resilience. The mother students emphasized the importance of self-care practices in maintaining emotional health, which is crucial for their resilience to stress. One participant explained:

"I make it a priority to take short breaks for recreation and exercise, as they help me clear my mind and restore a sense of calm amidst the demands of my tasks" (participant 14).

4.3.2. Category 2: Empowerment Through Education

This category explores how education empowers student mothers. Their commitment to learning benefits them personally and has a positive effect on their families.

4.3.2.1. Goal-Oriented Mindset

The desire to model perseverance for their children motivates student mothers to have a strong commitment to their educational goals and cultivate a flexible attitude toward challenges, reflecting the intrinsic motivation that drives student mothers toward academic success and strengthens their resilience in their efforts to set a positive role model for their children. One student mother explained her experience:

"I want my children to see that hard work truly pays off. Every time I sit down to study, I'm showing them that education matters" (participant 4).

4.3.2.2. Building a Future for the Family

Many participants emphasized that their educational goals aimed at providing better opportunities for their children served as an important source of motivation and resilience in the face of setbacks. This highlights the deep connection between their educational aspirations and their desire to create a better future for their families, acting as a strong motivator that strengthened their resilience. A mother student explained:

"Every night, I study for the sake of my children. I want to give them a life full of opportunities — ones I never had myself" (participant 8).

4.3.3. Category 3: Empowerment Through Spirituality

This category highlights how spirituality empowers student mothers, helping them balance multiple roles

while fostering resilience.

4.3.3.1. Finding the Inner Strength

Many college moms draw strength from their spiritual beliefs, which provide them with a sense of purpose and peace amid their busy lives. They describe how spirituality can serve as a foundation for resilience, emotional support, and a sense of community. One participant explained:

"My faith reminds me that I'm not alone on this journey. It gives me the strength to keep moving forward, even during difficult times" (participant 11).

4.3.3.2. Balancing Roles Through Spiritual Practices

Engaging in spiritual practices, such as prayer, reading the Quran, or participating in social activities, helps student mothers find balance and clarity in their lives. Many emphasize that spirituality can be a vital coping strategy, enabling student mothers to manage their responsibilities while enhancing their emotional well-being. This quote confirms the above:

"Spending time on spiritual practices helps me connect with my sense of purpose. It gives me a clearer mind and a lighter heart, which helps me approach my lessons and upbringing with more clarity and peace" (participant 7).

5. Discussion

The experiences of Iranian medical student mothers uncover significant challenges in balancing educational and family responsibilities. This study emphasizes their need for emotional and social support, particularly for accessible educational resources. Many expressed a strong desire for facilities, like libraries with daycare services, which accommodate both academic and childcare needs, enhancing their focus on studies. This aligns with findings that highlight the importance of on-campus childcare and flexible learning environments for student parents (33, 34). In regions with insufficient institutional support, access to resources like childcare can be inconsistent. For instance, some Western countries offer childcare services, but inadequate funding or accessibility forces student mothers to juggle education and childcare alone (35).

This qualitative study reveals that reliable childcare services are crucial for student mothers, enabling them to concentrate on their studies without childcare worries. Research indicates that access to affordable childcare significantly boosts academic performance and reduces stress for student parents (36-38). One

research indicates a persistent lack of such services in various educational institutions, which can lead to increased dropout rates among student mothers (39).

Flexibility in course structure emerged as a critical need among mother students. Participants highlighted the importance of educational institutions adapting curricula to meet their unique challenges, such as managing attendance and offering diverse course delivery options. Research indicates that flexible educational approaches can significantly enhance retention and success rates among mother students (40). However, some studies suggest that not all institutions are equipped or willing to implement such changes, leading to differences in support for mother students (41).

Another key finding from the data analysis was the need for student mothers to establish peer support networks, which are vital for emotional and social support. Participants noted that connecting with others facing similar challenges fosters community and provides essential emotional support. This aligns with research highlighting the importance of social networks in enhancing mental health and academic outcomes for student parents (42, 43). However, not all student mothers have access to such networks, especially those who may be isolated or lack opportunities to interact with peers, highlighting gaps in support systems (44).

Spiritual support is another significant need among mother students. Participants expressed the desire for resources that promote spiritual well-being, such as counseling services and faith-based groups. Studies indicate that spiritual well-being can play a crucial role in enhancing resilience and coping strategies for students (45-47). In our qualitative study, mother students viewed spirituality as essential for resilience, emotional support, and purpose. Many rely on their spiritual beliefs to navigate the challenges of balancing roles, with research highlighting spirituality's positive impact on mental health and resilience as a key coping mechanism (48, 49). Mother students in this study found that spiritual practices, such as prayer and social involvement, helped them achieve balance and clarity in their lives. These practices enhanced their emotional well-being and improved their ability to manage responsibilities. Some researchers underscored the importance of spiritual practices in promoting resilience and emotional health by fostering a sense of community and belonging, which is vital for coping (50, 51).

Many mother students reported that mastering time management significantly enhances their ability to

balance competing demands. Effective time management enables them to prioritize tasks and create structured schedules that accommodate both their studies and family commitments. Research emphasizes that strong time management skills not only reduce stress but also improve academic performance among student mothers (47). In addition to time management, mother students use a variety of stress-reduction practices, including mindfulness, exercise, and seeking social support. These practices are essential in maintaining emotional well-being and fostering resilience. Many studies support the idea that engaging in stress-reducing activities helps improve mental health and resilience among mother students (15, 16, 52, 53).

Education acts as a powerful source of empowerment for student mothers, enhancing their personal development and their families' well-being. Their commitment to academic goals is often motivated by a desire to model perseverance for their children. This intrinsic motivation fosters resilience and a flexible attitude toward challenges. Research indicates that viewing education as a pathway to a better future boosts persistence and reinforces the ability to overcome obstacles (15). These findings are essential for understanding the needs and resilience factors of Iranian medical student mothers. They highlight the challenges arising from the intersection of educational and familial responsibilities and stress the need for comprehensive interventions, particularly in access to childcare and educational flexibility. Future research should use quantitative methods to analyze how these needs relate to academic performance.

The study emphasizes the importance of emotional and social support, along with accessible educational resources, to help mother students balance their roles effectively. The demand for on-campus childcare and flexible learning environments aligns with prior research highlighting the significance of institutional support (34, 54). However, inconsistencies in resource availability, particularly in Western contexts, highlight the ongoing struggles of student mothers (7, 55). The findings illustrate the empowering nature of education for student mothers, impacting not only their personal growth but also their families positively. Their commitment to academic goals often reflects a desire to model perseverance for their children, reinforcing resilience through a flexible approach to challenges. A thorough understanding of these complex needs and resilience factors is vital for creating effective interventions tailored to support Iranian mother students.

This study is the first in Iran to explore the experiences of mother medical students, offering valuable insights into their unique challenges and needs. A key strength is the use of in-depth interviews, which provide rich, personal perspectives from participants across various medical disciplines. However, the study faces limitations, including cultural taboos that may inhibit mothers from openly discussing their experiences, potentially affecting the authenticity of the responses. Additionally, sensitive topics might lead participants to provide less comprehensive answers due to fear of judgment. Lastly, the time constraints of balancing academic responsibilities and motherhood may limit the depth of the insights shared during interviews.

5.1. Conclusions

This study highlights the challenges Iranian medical student mothers face while balancing education and parenting. Key findings show that accessible childcare and flexible learning environments are vital for improving academic performance and reducing stress. Peer support networks and spiritual resources also contribute to their emotional well-being. Effective time management and stress reduction practices are crucial for navigating their dual roles. Addressing these needs can create a more supportive educational environment, empowering student mothers to succeed academically and personally. This study's findings can guide future research by pinpointing interventions that better support student mothers in medical education. Further research should explore implementing recommended practices, like improved childcare and peer support, to enhance the academic success and well-being of this population.

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Footnotes

Authors' Contribution: F. Kh., A. E., M. A. B., K. M. N., J. M., and S. J. designed the study. F. Kh. was involved in data collection. F. Kh. and K. M. N. finalized the results verbatim. M. A. B., F. Kh., K. M. N., S. J., and A. E.

contributed to the data analysis and interpretation. F. Kh. wrote the draft of the manuscript, whereas A. E., M. A. B., K. M. N., J. M., and S. J. extensively reviewed the manuscript. All the authors read and approved the final manuscript.

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Data Availability: The dataset presented in the study is available on request from the corresponding author during submission or after its publication. The data are not publicly available due to privacy.

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