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Medical Residents' Viewpoint about the Effective Stressors on Professional Identity Formation during Residency in Tehran University of Medical Sciences: A Qualitative Study

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ABSTRACT

Introduction: Professional identity, or how a doctor thinks of himself or herself as a doctor, is considered to be as critical to medical education as the acquisition of skills and knowledge relevant to patient care. As stress can affect learning, it can be considered as one the factors influencing the formation of professional identity during the training of physicians. According to existing evidences, transition undergraduate level to post-graduate and residency level is most stress course in medical education. Therefore, the aim of this study is to determine the effective stressors on professional identity formation from residents' viewpoint in Tehran University of medical sciences.

Method and Materials: 17 residents (male and female) aged 26-40 years old were participated in this study which was done by qualitative content analysis method. A purposeful sampling was conducted in 4 specialty hospitals affiliated to Tehran University of medical sciences. Data was collected by semi-structured in-depth interviews and was analyzed by conventional content analysis.

Result: According the results, the main categories were discipline-specific stress, Interpersonal relationship stress, Personal stressors, Educational Climate stress and subcategories were including, Gender preference stress in some disciplines, Nature of profession, lack of specialty knowledge, Occurrence of medical error, Curriculum-related issues, Failure to have effective communicate, Linguistic and culture differences, Conflict between Personality characteristics and specialty, Work-life imbalance due to multiple roles and responsibilities, working atmosphere (situation-long hours), Ineffective residency support.

Conclusion: Determining the occupational stress and managing them can prevent the negative impacts on the professional identity formation of residents and their daily life. The results of this paper can be considered in residency's training programs and coping with negative stressors in order to train the specialists with professional identity by managers and trainers.

Key words: Professional identity formation, Stressors, Residents

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INTRODUCTION

Professional identity is a social identity that is created through relationship with others and practical training and learning and professional experiences [1]. Professional identity, or how a doctor thinks of himself or herself as a doctor, is considered to be as critical to medical education as the acquisition of skills and knowledge relevant to patient care [2]. Professional Identity reflects a very complex process, or series of processes, best understood by applying aspects of overlapping domains: professionalism, psychosocial identity development and formation [1]. Forming the professional identity of physicians, developing of professional values, activities and goals should be the basis of medical education [3] and contributing to professional identity formation in physicians is equal to programs related to clinical skills learning and medical knowledge [4-7]. In last two decades, there was a lot of pressure on medical education [8]. Everyone needs a

certain amount of pressure for the best performance, but when stress becomes excessive and too much to deal with, it will prevent from focusing on patient [6]. Medical education inherently causes stress in students. Excessive stress can impact on both physical and mental health [9]. Stress can be described as a double sword that leads to efficiency or inefficiency in students.

Residency is a stressful course in medical education which is known by long working hours and heavy workload. It can have negative impact on mental health. Resident not only acquires the specialized skills, but also should provide care services [10]. Martin et al. stated that the transition from undergraduate to postgraduate training has been described as the most stressful transition during medical training [6]. Levey indicated that gender differences, pregnancy, family's stress, economical issues, minorities and cultural issues are stress sources [11]. They also showed that the development of the professional identity and mental preparation in students to deal with problems are influenced by environmental factors. Ebrahimi et al. stated that job stress has negative impacts on the life quality of residents and as a result, it also affects patient care [12]. It is noted that there are few studies about residents' stress which some of them have quantitative approach. Despite its advantages, Quantitative approaches do not provide a deep understanding about this issue. Stress meaning is different in each country; therefore, existing findings cannot be easily generalized [13]. Because there is no qualitative study about professional stress of residents in Iran, the aim of this study is to determine the effective stressors on professional identity formation of from residents' viewpoint in Tehran University of medical sciences. The results of this paper can be considered in residency's training programs and coping with negative stressors in order to train the specialists with professional identity by managers and trainers.

METHOD AND MATERIALS

This qualitative study was conducted by conventional content analysis and its aim was to understand and discover data by using semi-structured interviews with residents of hospitals affiliated to Tehran University of medical sciences (Imam Khomeini Hospital, Sina Hospital, Shariati Hospital, Mohebb Yes Hospital and Children's Medical Center). After 14 interviews, we achieved saturation. But for getting information and more details, we conducted 3 more interviews. At first, goals of the study were explained to residents and their satisfaction for voice recording was obtained. Residents were assured that their names will not be used in text. We used an interview guideline to ensure that all issues were covered during the interview. These questions gave participants the opportunity to express their thoughts freely.

Questions were included: What do you know about stress?; How do you get stress?; What factor causes you feel stress?; Does stress affect you to become a good physician?; What stressors do you experience in residency course?

If there was an ambiguity, participants would be asked to give an example. All interviews were recorded and encoded. To do this, interviews were first typed. Then, we performed content analysis manually. The content analysis method is used to determine the existence of specific words and concepts in the texts, in which data is reduced, structured and ordered [14]. Interviews were read several times to get a sense of the whole. Then the initial codes were written in the right margin of the text and were listed in a coded table. Thus, next data was created. Coding process was continued. Sub-codes were categorized in a general subset. This process decreased the initial codes. Then codes were placed in a subcategory in terms of similarity. Similar categories were placed next to each other. The categories with similar specification were combined and formed the main categories. For validity and reliability, we achieved agreement of team's members regarding interview and coding methods and descripting the findings and used from external supervisors' comments about the study and finding process. The analysis was done manually. The study was done by approval of University's ethical committee, obtaining consent from the hospital managers and written informed consent from participants. Participants were assured for the anonymity and confidentiality for their responses. Time of interviews was determined according to work schedule of residents. In this study, 17 residents (5 men and 12 women) from 4 specialties and at different residency levels were participated. Their average age was 28.5 years (Table 1).

RESULTS

According to data analysis (Table 2), stress in residency course in Tehran University of Medical Sciences was classified in 4 main categories: Discipline-specific stress, Interpersonal relationship stress, personal stress, Educational Climate stress. Each of them is explained in detail below.

Table 1: Demographic status of participants

Participants	Gender	Age (years)	Year of specialty	Resident's specialty
1	Female	31	3	Pediatrics
2	Female	26	1	Pediatrics
3	Female	32	4	Pediatrics

4	Female	27	2	Pediatrics
5	Female	36	4	Gynecology
6	Female	32	2	Gynecology
7	Female	32	3	Gynecology
8	Female	28	1	Gynecology
9	Male	26	1	Internal medicine
10	Female	27	2	Internal medicine
11	Male	29	3	Internal medicine
12	Female	30	4	Internal medicine
13	Male	30	4	Surgery
14	Male	28	2	Surgery
15	Male	30	1	Surgery
16	Female	40	3	Surgery
17	Male	33	2	Surgery

Table 2: Categories, subcategories and codes extracted from the interviews

Categories	Subcategories	Codes
Discipline-specific	Gender preference stress in some disciplines (such male in surgery)	Negative view of women abilities
		Women physical ability
		Socialization
	Nature of profession	Social development index
		More Emotional sensitivity in disciplines
		Pain expression by patients
	Lack of specialty knowledge	Lack of study time
		Fear of inaccurate answers (to the questions of senior and junior residents)
	Occurrence of Medical Errors	Incorrect clinical actions
		Fearing of patient death
		Fearing of error disclosure
	Curriculum-related issues	Curriculum changes
		Lack of supervision on curriculum
		Lack of awareness about expectation
Interpersonal relationship	Failure to have effective communication	Interaction between Residents
		Pressure from trainer
		Failure to relationship physician–patient
	Linguistic and cultural differences	Cultural differences with counterparts
		Linguistic differences with patient
Personal	Conflict between Personality characteristics and specialty	Defective Assistant Recruitment Criteria
		Disinterested in specialty
	Work-life imbalance due to multiple roles and responsibilities	Responsibility towards society
		Accountability to patients
		Marital and Maternal affairs
		Learner's role

Educational Climate	Working atmosphere (situation-long hours)	Overcrowding and inadequate time for patient care
		Inadequate response to physiological needs
		Changes in social and family relationships
		Aggressive patients and their relatives
	Ineffective residency support	Low income and weak financial system
		Inadequate welfare and housing
		Inadequate psychological support (from system and family)

Discipline-specific

This main category includes: Gender preference stress in some disciplines (such male in surgery), Nature of profession, lack of specialty knowledge, Occurrence of Medical Errors and Curriculum-related issues.

Gender preference stress in some disciplines (such male in surgery)

Gender preference stress in some disciplines one of the stressors in residents is negative perception of "Negative view of women abilities": The reactions of male residents and the beliefs of professors about women in surgery specialty leads to stress. Some people believed that lacking the physical strength and disproportion with surgery can lead to stress. Social acceptance and lack of confidence in women to attend in specialized surgery are other factors that can cause mental stress in female residents. Participant number 16 stated about "Negative view of women abilities": "Some professors still think that women should not be attend in this field. It will affect your mental health" (40 years old woman, Surgery, third year)." Participant number 17 told us about "women physical ability":" In terms of mental and physical condition, men are more stable than women. Maybe you do not agree with me." He said about socialization (specialty-gender):" This is a fact; "people may not be able to easily accept woman as a surgeon." (33 years old man, Surgery, second year).

Nature of the profession

One of subcategories in our study is "Nature of profession". This includes "Social development index" and "More Emotional sensitivity in disciplines" and "Expressing pain by patients. Because of development index and requiring the quick and urgency treatment, nature of some profession leads to more stress. "Expression of pain by patients" affects medical environment and therefore, stress on residence in such environment will be increased. "The high rate of maternal mortality leads to decrease the development index. Therefore, our specialty is very important and sensitive" (28 years old woman, Gynecology, First year). "Assume that we must actually consider two people, a mother and her child" (36 years old woman, Gynecology, fourth year). "Some disease such as diabetes can be managed easily and this makes us calm. But in surgical ward, pain or bad condition of the patient is stressful for us." (30 years old woman, Internal medicine, fourth year).

Lack of specialty knowledge

One of subcategories is "lack of specialty knowledge" stress in residents. It includes: "lack of study time "and "Fear of inaccurate answers (to the questions of senior and junior residents)". Due to different diseases and variety of patients, residents need to increase their specialty knowledge in relevant area. They don't have enough time to study and so, treatment is done more often on the basis of practical experiences. With burnout resulting from therapeutic activities, they cannot study and focus on scientific resources in leisure time "when we visit a case, we should have time to study and find out how treat him/her. But we don't have time and as a result, we learn by trial and error." (31 years old woman, Pediatrics, second year). "I am worried that if a professor or a senior resident, or even a junior resident, ask me a question and I cannot answer it. This makes me feel stressed". (31 years old women, Pediatrics, second year).

Occurrence of medical error stress

It is another subcategory in which "Incorrect clinical actions", "Fearing about patient death "whom their illness is not complicated and "Fearing of the disclosure of errors" can make stress in residents. "Although a resident should not tolerate insomnia for more than 24 hours, we work for 36-40 hours, here. This will increase faults, as well as decrease our performance." (28 years old woman, Gynecology, first year): "I wanted someone else to handle patients, because I thought I might make a mistake or cause patient death. Facing a patient with febrile seizure make me confused." (27 years old, Pediatrics, second year). "For example, fearing of being blamed, a few times I lied about something. I discharged a patient whom should get a special medicine. This could have been killed this mother. That was a fault. I don't like to lie". (32 years old woman, Gynecology, second year).

Curriculum-related issues

It is a subcategory of discipline-specific. Changing the curriculum such as decreasing or increasing the years of residency can lead to stress. The lack of supervision in the implementation of the curriculum and lack of awareness about course goals in residents are other expressed stressors. "Neither ministry nor university provides us a coherent curriculum. We did not know what to do in the last year. There were many problems for our group which should be trained for four years." (32 years old woman, Pediatrics, fourth year). "A resident was selected for vascular surgery group and another resident

was in a group that perform hundred Gallbladder removal surgery with his/her senior, but they have been often compared with each other. There must be a proportion." (40 years old woman, Surgery, third year). "It's not clear exactly about what we should know." (26 years old man, Internal medicine, first year).

Interpersonal related stress

It is another main category which includes the following subcategories: "Failure to have effective communication", "Linguistic and cultural differences". Difficult relationships between different residency levels, relationship with educator and physician- patient relation are part of failure to effective communication subcategory.

Failure to have effective communication

It includes: "Interaction between Residents", "Relationship with Educator "and "Failure to relationship physician-patient". "Participant number 8 told about "Interaction between Residents": "Neither patient nor our training course cannot benefit from such behaviors in medical centers. It just creates a non-friendly atmosphere in which people feel uncomfortable." (28 years old woman, Gynecology, first year). "We had disciplinarian senior residents. Their behaviors were very stressful." Participant number 7 told about "Relationship with Educator". (32 years old woman, Gynecology, third year). Participant number 5 told about "Failure to relationship physician -patient": "A patient should get energy from you and *vice versa*. People who are aggressive or have no good relationship with the patients, cannot get to professional identity." (36 years old woman, Gynecology, fourth year).

Linguistic and culture differences

That includes: "Cultural differences with counterparts", "linguistic differences between doctor and patient". Participant number 9 told us about "Cultural differences with counterparts": "there is a kind of stress when you meet counterparts. Cultural and personal differences in residency course create many challenges." About "linguistic differences between doctor and patient", he mentioned: "sometimes, we have patients who are spoken with a local language and we did not understand what they are saying. In this situation, we fear about not considering something in patient history or not diagnosing disease. This makes us feel bad." (26 years old man, Internal medicine, first year).

Personal stress

This main category includes: "Conflict between Personality characteristics and specialty" and "Work-life imbalance due to multiple roles and responsibilities"

Conflict between Personality characteristics and specialty

It includes: Defective Assistant Recruitment Criteria and Disinterested in specialty. Those are as stressful factors. It looks like entering exam that people just select some special disciplines. While, that person may not be appropriate for this. Perhaps he/she needs to choose a discipline which is based on his/her personality and morals." Participant number 8 told about "Defective recruitment criteria". About "Disinterested in specialty", she explained: "because of stressful atmosphere, percentage of abandonment in gynecology and Orthopedics is higher than other disciplines. Workload is high in surgery ward and because women are more flexible and sensitive, they cannot tolerate this situation; as a result, they give up." (28 years old woman, Gynecology, first year).

Work-life imbalance due to multiple roles and responsibilities

Residents mentioned that responsibility towards society, Accountability to patients, Marital and Maternal affairs and Learners role can lead to continuous stress. Resident number 4 told about "responsibility towards society": "if we do not learn capabilities of a physician, we will get into trouble." She mentioned about "Learners role": "both system and professor have some expectations. It may be helpful from scientific dimension." (32 years old woman, Pediatrics, second year). Participant number 8 told us about "Accountability to patients": "expected patients or companies who cause disorder in the emergency room, make us feel stress." (28 years old woman, Gynecology, first year). Responder number 6 said about "Marital and Maternal affairs": "I rarely see my child. It is a tough condition." (32 years old woman, Gynecology, third year).

Educational climate

This includes: working atmosphere (situation-long hours), Ineffective residency support. Residents pointed out that hard condition and long working hours, inadequate response to physiological needs, overcrowding and inadequate time for patient care, changes in social and family relationships and aggressive patients and their relatives are some stressful factors.

Working atmosphere (situation-long hours)

Residents stated that long working hours reduces motivation and the quality of healthcare services. A resident mentioned that this can lead to impatience and inappropriate contact with patients. Sometimes, people with heavy workload may ignore their physiological needs such as eating, sleeping and etc. there is not enough time for providing ideal care and meeting all expectations. Participant number 6 told about we have many physical activities. "Sometimes we do not have time for eating or praying. Sometimes, I did not eat for 12 hours; even I did not drink a glass of water. It is hard to believe that." (32 years old woman, Gynecology, second year). "We do not have enough time for doing multiple jobs simultaneously. That's why things do not go well, sometimes." Participant number 15 stated about "Overcrowding and inadequate time for patient care". When we asked him about "Changes in social and family relationships", he answered: "I could not keep my relationship with my family or friends strong in residency course." (30 years old man, Internal medicine,

first year). Responder number 1 told about "aggressive patients and their relatives": "sometimes, parents and their relatives start a shouting match in emergency room and this disrupts our workplace." (28 years old woman, Pediatrics, third year).

Ineffective residency support

Financial, welfare and housing problems of residents, long distance from their residence to hospital, unbalance between income and workload are stressful factors in this subcategory. Inadequate psychological-emotional support from family, system and community can also increase stress in residents. Participant number 13 told about "low income and weak financial system": "we always preoccupied with low income. Compared to our workload at hospital, our income is very low." (30 years old man, Surgery, fourth year). "My main concern is about my life. Without a partner who can understand you, the conditions will be very difficult." Participant number 6 said about "weak psychological support from family" (32 years old woman, Gynecology, second year). About "inadequate welfare and housing", Participant number 1 stated: "physicians need to kind of inner peace. Being in traffic makes you tired. Perhaps you can endure for a while, but 4 years is too long." (31 years old woman, Pediatrics, second year).

DISCUSSION

The developmental stages of identity and moral development, along with a sense of self-efficacy and the availability of role models and unique experiences of each individual, combine with stressors inherent in the process of medical education to shape the formation of professional identity [1]. Post-graduate is a new stage for residents. A permanent and distinctive professional identity is formed during the residency years [6]. Existing studies demonstrated that residency is a stressful level for physicians. Stress can impact on healthcare and patient safety. Today, organizations have more attention to stress. Sleep disorders, heavy workload, accountability to patients, competition among coworkers and so on can be considered as potential stressors. The higher level of stress is associated with lower level of job satisfaction [14,15]. Evidences showed that residents in Iran also experience heavy stress [16,17].

Findings in this study demonstrated that "discipline-specific stress", "Interpersonal relationship stress", "Personal stressors", "Educational Climate stress" are 4 main categories that impact on the professional identity formation. In our country, gender preference is the most important problem for women. This has increased dramatically in past years; but fortunately, it has been reduced today. Inequity leads to stress. We can see such stress in some medicine disciplines such as gynecology, surgery and so on. Our study demonstrated that due to legal ban for men in Gynecology, this discipline is associated with female characteristics and sensitivities. General surgery, orthopedics and other surgery fields often are attributed to men, because of their physical fitness and physiological stability. Thus, the socialization of these disciplines is also affected by these issues. Fujimaki et al. stated that few female surgeons are married or have children in compare with other specialties. There is not adequate understanding and support from female surgeons [18]. We also achieved similar results in our study. Since maternal mortality is important in accordance with the WHO principles, it is considered as one of political-economic development index [19] and also according to emotional sensitivity, Gynecology is considered as most important specialty. Due to timely treatment to save mother and child, this field needs to fast and timely reaction and decision making. There is a stressful condition for training the resident in this field that can affect forming the profession identity. For better treatment in surgery ward, we also need a good condition in surgery room and a good team work. Then it can be said that specialties can be affected by patients, expressing pain by them and type of service provided. In such circumstance, residents may struggle with a stressful atmosphere of their job. This issue has not been addressed in previous studies. Acquiring knowledge and using it in practice (diagnosis, clinical reasoning and decision making) can make a change in residency training and profession identity formation [6]. This study showed that medical residents don't have enough time for studying about cases, because of long working hours. They mostly act on the basis of practical experiences (trial and error) and observational learning. Therefore, they get stress in diagnosis, prescribing medicine or treatment. Martin et al. demonstrated that adequacy of knowledge is a stressor in Canadian residents [6]. All physicians make a kind of mistake in training courses. Therefore, residency is the most reasonable time to use error management strategies. The lucky doctor has never experienced an unpleasant medical error. Many of them experienced their first mistake in residency [17]. We also achieved similar results. This is in line with Hevia et al. findings [17]. Interpersonal relationship stress is another factor that is including "failure to effective communication" and "linguistic and culture differences". Communication is a multi-dimensional, multi-factorial phenomenon and a dynamic, complex process, closely related to the environment in which an individual's experiences are shared [20]. Communication is a core competency that is not systematically taught in many residency programs. Communication skills can improve treatment adherence, increase patient satisfaction, and reduce medical errors [21]. Current studies showed that stress related to communication problem has negative consequences on patient health and probably physician. Relationship between patient and physician can affect to many aspects of health care such as history- taking, diagnosis or treatment [22]. In this study, residents have pointed to this issue. We demonstrated that linguistic and culture differences between physicians-patient and with counterparts and senior residents can cause stress. Ferguson et al. stated that how differences between physicians and patients in race, ethnicity, and language influence the quality of the physician-patient relationship. Minority patient are less likely to engender

empathic response from physicians, establish rapport with physicians, receive sufficient information, and be encouraged to participate in medical decision making [23]. Five key predictors of culture-related communication problems are identified in the literature: cultural differences in explanatory models of health and illness; differences in cultural values; cultural differences in patients' preferences for physician-patient relationships; racism/perceptual biases linguistic barriers [24]. Another important factor in this study is personal stress. Responsibility towards society, Learners role in front of professors, accountabilities to patients and Marital and Maternal affairs and Work-life imbalance due to multiple roles and responsibilities can cause continues stress in residents. Some studies found that having no time to relax and have fun and marital relationships may lead to stress in married residents. Landau et al. showed that family relationships and social contact of residents can be affected by increasing stress. Over 40 percent of the respondents experienced important problems with their spouse or partner [25]. In this study, we showed that professional identity formation can be affected by postponing marriage, delaying parenthood, being away from partner, care of elderly parents, weakening the motherhood role, changing lifestyle and attention to self-care. Educational Climate stress is another important factor. Benson et al. found that many of self-perceived stressors related to learning environment. This study emphasized that some stressors are affected by organizational factors such as agenda, clinical responsibilities and clinical environment. They also showed that resiliency strategies and other conscious strategies and designing curriculum based on communication and rethinking strategies can decrease burnout in residents [26]. In current study, heavy workload is considered as a part of Educational climate stress that is in line with other national and foreign researches. Studies showed that heavy workload is one of the risk factor to create stress. Malek et al. [13] stated that most frequent stressors were work over load and responsibility. Sargent et al. about occupational stress orthopedics residents and Castelo-Branco et al. about gynecology residents demonstrated that workload is a significant predisposing factor [27,28]. Some studies showed that despite occupational stress, residents are facing with more stress because of the large amount of scientific and practical work that must learn in a compressive time, more workload, responsibilities that are not well defined for them and expecting to perform conflicting tasks [29,30]. Ogawa et al. demonstrated that long working hours might be a cause of stress reaction such as depression or mental problem in residents. Proper management of resident physicians' working hours is critical to maintaining their physical and mental health and to improve the quality of care they provide [31]. Baldwin et al. showed that residents reported an average of 5-6 hours or fewer hours of sleep per night for each specialty. There were significant differences in reported average weekly sleep hours between specialties [32]. Current study also demonstrated that heavy workload and sleep deprivation, especially in first year of residency, can lead to stress. In this study, residents noted to low income and over workload, especially in surgery. Malek et al. stated that low income must be considered as a stressful factor [13]. Housing and transportation issues are other issues which have not been addressed.

Failure resident's support can lead to stress in residency. Sarkar et al. introduced motivation-related factors as a stressful factor [9]. Hope can help you to cope with stressful conditions. Medical errors and patient safety are important concerns for both patients and physicians, especially since the Hope is an important personal resource that influences an individual's ability to cope with stressful, life-threatening situations [33]. Sarkar et al. stated that the quality of parental care from residents and high expectance from residents are also contributory factors to stress [9]. In the present study, inadequate psychological-emotional support from Educational system, inappropriate income, hope reduction and motivation can be described as stressful factors that affects the residents, his/her concerns, learning and formation of professional identity.

CONCLUSION

Results of present study and determining the stressors such as occupational stress, interpersonal related stress, personal stress and climate bounded stress can be considered in residency curriculum in order to train a good specialist with a positive professional identity. Therefore, to avoid negative effects of stress on residents' performance and welfare, we must discover stressful factors, consider stress management and burnout management in residency and train them the stress coping strategies.

Limitations to study: Because medical assistants were busy and had little free time, it was difficult to meet and interview them.

CONFLICT OF INTEREST

The authors declared no potential conflicts of interests with respect to the authorship and/or publication of this paper.

ETHICS CONCENTRATION

The ethics committee of the Tehran Medical University approved the study (decree number: IR.TUMS.UCR.REC. 1396.9221486001. Agreement forms were given to them to sign or thumb print. Ethical issues were completely observed by the authors.

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