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Level of Moral Distress in Operating Room Technologist Students in Iran: A Cross-Sectional Study

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Abstract

Introduction: Moral distress is one of the issues considered in the educational environment. That it can affect the physical, psychological, and social dimensions of individuals and access to ethical and educational goals. This study aimed to investigate the moral distress in operating room technologist students of Iran University of Medical Sciences.

Methods: This cross-sectional study was performed on Iran University of Medical Sciences' operating room technologist students in 2017. Data were collected with two questionnaires, including demographic information and a moral distress questionnaire. Data were analyzed by SPSS software using an independent t-test and one-way ANOVA ($P < 0.05$).

Results: In this study, 121 operating room technologist students participated. The mean score of moral distress in the scores' severity and frequency dimensions was (3.5 ± 1.76) and (3.11 ± 1.6), respectively. The results showed that only age and semester had a significant relationship with the total score of moral distress, and with increasing age and semester, students' moral pain has decreased.

Conclusions: This study's results indicated that the moral distress in operating room technologist students was moderate, which requires investigating the factors involved in creating moral distress and providing strategies and measures to reduce its adverse effects in the educational setting.

INTRODUCTION

In today's world, higher education aims to develop skills, abilities, and a better understanding of the conditions preparing people for more effective performance in their future work environment [1]. Training of talented, interested, and efficient graduates is an educational priority of the education system and ministry of Health. Therefore, paying attention to training the workforce needed to manage and perform health care services is of particular importance [2]. Undoubtedly, ethics and moral values play a significant role in guiding people. As an educational institution's spirit and character, the academic environment have an undeniable role in people's decisions and behaviors [2].

Recent studies have revealed the prevalence of psychological problems at various degrees among students. Evidence suggests that most students of clinical courses report the schooling years as highly stressful, which is a function of academic and clinical training [3]. Given that a large part of life in these students is spent in the study or internship setting, the impact of problems and stressors associated with training in these disciplines on students' mental health is of high importance [4].

Moral distress is a problem that hurts the mental health of people and leads to physical and psychological stress [5]. Moral distress is the product of a situation in which a person knows the right thing to do but is convinced by a set of factors and obstacles that it is impossible to do it [6], positioning them in the opposite direction to moral values and undermining their integrity and honesty [7]. The term moral distress was first coined by Andrew Jameton, a nursing professor who noticed this phenomenon among the nursing students to whom he taught [8, 9]. Moral distress is the emotional, mental pain, and discomfort in which the individual commits an honest error due to real or mental limitations while having the necessary knowledge and ability to make an ethical decision [10]. The point to note about the conditions causing moral distress is the inability to perform the right thing, which is not due to the lack of awareness of ethical issues but instead because of exposure to a situation where the individual is afraid of behaving correctly [11].

Studies show that medical students are exposed to conditions causing moral distress over their study period [12]. The results of Escolar-Chua research show that most students in the clinical field are faced with the requirements of moral distress and that nearly 80% of them have a tendency to forsake their profession [12]. For example, a situation where a trainee witnesses' unfavorable circumstances or behaviors but cannot deal with the problem independently because of the hierarchical status [13], leading to the factors provoking moral distress and ethical issues [14]. In the study of Matchett, all the students experienced administrative problems that prevented them from what they felt or believed to be right [15]. Things like communication problems with the patient, feeling incompetent in the presence of physicians, giving patients incorrect information about their treatment, insufficient allocation of resources, hierarchical relationships between physicians and others, a deep sense of loneliness in the internship experience, and perception of incapacity in clinical education setting have also been linked to moral distress in students [16].

In addition to the clinical setting, moral distress can occur in an educational environment with several consequences [17]. In several studies, students have noted the relationship between professor and student as a moral distress source [5]. In addition to erroneous standards at the university, cultural concerns, and professional standards, managerial-educational approaches meant to increase the acceptance of students who are not able to obtain a passing score, inappropriate and indecent behavior, literary abuse, teamwork of students, cheating, plagiarism, copying, bullying and violence, regulations and procedures for professional education are all creating factors of moral distress [18, 19].

Moral distress can affect a person's physical, mental, and social dimensions and lead to physical and psychological outcomes, including feelings of failure and guilt, anger, tension, sadness, anxiety, shamefulness, low self-esteem, sense of insecurity, fear, discouragement, depression, and job dissatisfaction [20-23]. The factors involved in the development of moral distress in the educational setting damage the ethical authenticity of the academic environment and turn it into a destructive ambient. The moral distress circumstances will make this environment unsafe and negatively affect the performance of students. Students' dissatisfaction and lack of motivation in educational settings will disrupt the learning process, which involves the quality of care provided by them as the future workforce and can lead to their tendency toward dropout [18]. Moreover, operating room technologist students are members of the surgical team that is continuously under pressure to perform a complex surgery correctly. Multi-professional and inter-professional teams provide patient care. The multi-disciplinary surgical team's exposure to a high level of stress in a high-risk environment may lead to susceptibility to moral distress and unethical behavior [19]. However, according to reports, the concept of moral distress in operating room nurses and operating room technicians has not been studied [20].

Given that human resources training is the essential element of higher education and one of the most prominent factors of national development, it is of high importance to pay attention to the problems and stressors during the education period. The student community of any society is the spiritual and human fruit of that society and determines the future destiny. This study aimed to investigate moral distress and its relationship with operating room technologist students' demographic factors as part of the medical community.

METHODS

Study Design

The present cross-sectional study is part of a master's thesis from Iran University of Medical Sciences (IUMS). The population included all continuous & discontinuous bachelor students of operating room technician in IUMS, and the sampling method was the census. This study's inclusion criterion was entry into the clinical setting (students in semesters 1 and 2 were excluded), and exclusion criteria were guest students and those transferred from other universities.

After obtaining a license from the ethics committee of IUMS, the researcher introduced himself and communicated the study's purpose for the participants to collect their information after coordination in terms of time and place of completing the questionnaires and whether they wished to participate in research and give informed consent. Necessary explanations on how to answer the questionnaire items were presented to participants who answered the questions in the researcher's presence, after which the questionnaires were collected. To reduce the effect of intervening

factors in completing the questionnaire as a self-report, the researcher provided sufficient and clear descriptions for the participants regarding the confidentiality of the information and lack of judgment. The answers were closer to reality. Completion and collection of questionnaires were performed in the second half of the 2016-2017 academic year.

Materials and Subjects

The data collection questionnaire consisted of two parts: demographic information and moral distress. Demographic data included age, gender, marital status, grade, semester, family income, and current place of residence.

The moral distress questionnaire of this study was developed by Mohammadi et al. [18]. The questionnaire includes 20 questions in three areas of educational delinquency (5 questions; I had to copy my friends' information to get a good grade), violence (7 questions; In my educational environment, I have had a history of conflicts with professors and educational officials) and educational deception (8 questions; Some students get unrealistic grades despite their academic adequacy). The score of this questionnaire is in two dimensions of intensity and frequency. According to the Likert scale, the score ranges 0-5 in the measurement of intensity (very low to very high) and 0-5 in the dimension of frequency (never to frequently). The validity and reliability of the questionnaire were investigated by Mohammadi et al. in 2014. In the mentioned study, this questionnaire was validated by 10 members of the nursing faculty in terms of relevance, simplicity and transparency criteria and its content validity index (CVI) was reported to be 80%. Also, the reliability of the questionnaire (Cronbach's alpha) was reported to be 86% with a sample size of 30 students.

Statistical Analysis

The collected data were analyzed using descriptive and inferential statistics by SPSS software version 21. Independent t-test was used to investigate the differences in moral distress scores according to variables of gender, marital status, grade, and one-way ANOVA was employed for age, an academic semester, current place of residence, and family income, and $p < 0.05$ was considered as the significance level.

RESULTS

In the present study, 121 operating room technologist students from Iran University of Medical Sciences, including 55 males (45.5%) and 66 females (55.5%), were recruited. The age range of students was 19-40 years with an average age of 23.39±5, and a majority of subjects (80.5%) were single. Ninety-eight students (81%) were studying for a continuous bachelor grade, and 23 students (19%) for a discontinuous bachelor grade (Table 1).

Table 1. Distribution of Demographic Variables of the Operating room technologist students

Variable	No.	%
Gender		
Male	55	45.5
Female	66	55.5
Marital status		
Single	95	80.5
Married	23	19.5
Grade		
Continuous bachelor	98	81
Discontinuous bachelor	23	19
Age		
<25	98	81
25-30	7	6
>30	16	13
Semester		
Continuous bachelor		
4	30	24.8
5	4	3.3
6	30	24.8
8	34	28.1
Discontinuous bachelor		
2	3	2.4
3	20	16.5
Current residence		
Dormitory	38	31.9
Living with family	77	64.7
Personal house	4	3.4
Family income (Toman)		
<2*106	36	54.5
2-3*106	18	27.3
3-4*106	8	12.1
>4*106	4	6.1

Table 2. T-Test Results

Variable	Moral Distress (Intensity)	Moral Distress (Frequency)
Gender	T = 2.014, P=0.127, df=119	T=0.092, P=0.960, df=119
Marital status	T=2.288, P=0.510, df=116	T=2.609, P=0.857, df=116
Grader	T=1.833, P=0.550, df=119	T=2.600, P=0.825, df=119

Table 3. One-Way ANOVA Results

Variable	Moral Distress (Intensity)	Moral Distress (Frequency)
Age	F = 6.067, P=0.001**, df=120	F=8.009, P=0.021*, df=120
Semester	F=2.775, P=0.04*, df=120	F=2.418, P=0.021*, df=120
Current residence	F=1.916, P=0.152, df=118	F=2.305, P=0.481, df=118
Family income	F=6.08, P=0.613, df=65	F=0.632, P=0.597, df=65

*The mean difference is significant at the 0.05 level.

**The mean difference is significant at the 0.001 level.

Table 4. The Operating room technologist students' Scores on the Intensity and Frequency of Moral Distress

Moral Distress	Intensity (Mean ± SD)	Frequency (Mean ± SD)
Educational delinquency	1.49±0.96	1.34±0.86
Violence	1.21±0.99	1.04±0.87
Educational deception	2.43±1.14	2.22±1.11
Total score	3.5±1.76	3.11±1.6

The mean score of moral distress in the intensity dimension was 3.5±1.76, and it was 3.11±1.6 in the frequency dimension. Students in different semesters were not statistically significantly similar in terms of intensity and moral distress frequency (Table 3). However, there was no significant difference between other demographic information (gender, marital status, grade, family income, and current place of residence) and intensity and frequency of moral distress (Tables 2 and 3). The results were evaluated at a significance level of < 0.05 as well.

Examination of the questionnaire items also revealed that the highest mean of intensity and frequency of moral distress was related to the following question in the field of educational deception: "Some students achieve unrealistic scores contradicting their academic competence." The lowest mean of moral distress intensity was related to the question "I was threatened in my educational setting" in the field of violence. The lowest mean of moral distress in the dimension of frequency was related to the question "My misbehavior in the field of education has been imitated by my classmates" in the educational deception field.

In general, the highest and lowest mean of moral distress in terms of intensity and frequency were related to educational deception and violence, respectively (Table 4).

DISCUSSION

The present study's findings generally indicate that the mean score of students' moral distress was at a moderate level. In the study of Lomis, 97% of the students had high distress levels, which is not consistent with the present study [13]. Powell reports that almost all college nurses (97.3%) experienced some degree of moral distress [24]. Escolar-Chua showed that most nursing students in the clinical setting are in a state of moral distress. Their perception of inexperience in the healthcare group is a factor in this phenomenon, and that nearly 80% of them tend to quit their profession. Also, it should be noted that various situations such as incompetence, poor patient care, and improper communication among healthcare providers are some of the factors leading to the recurrence of moral distress in students. Moral pain in students occurs due to internal and external limitations such as inexperience, low self-esteem, and competency, patient care practices. Incorrect collaboration is reminding students that students need to recognize these circumstances and learn how to cope with them because negative experience and environment can prevent students from their careers [12]. In Iran, Mohammadi et al. have reported a moderate level of moral distress among Paramedical Faculty students, which is consistent with the current study [18].

In a review of 157 articles published from 2004 to 2014, Sasso et al. examined factors such as difficult environmental, organizational, and communication conditions causing moral distress in nursing students' clinical and vocational education environment. Inequality and differences in health care, contact with students' instructor, and personal characteristics are among the factors influencing students' moral distress [8]. Wojtowicz et al. have also examined the relevant factors affecting students' moral distress and cite educators' inability to support students as a reason for moral pain in the students [16]. Rennó et al. classified essential aspects of moral distress in students' education into three categories, citing the professor or mentor as a source of anxiety and moral distress and noting that the time of student evaluation by the professor or educator during the process of teaching and learning highlights this problem. On the other hand, students state that educators' and professors' pressure during vocational training leads to physical and psychological symptoms such as stress [10]. In his research, Reader says that several limitations in education cause moral distress and that the students mention the fear of punishment or penalty for their mistakes as limiting factors in education [25].

There was a statistically significant relationship between academic age and semester with moral distress among the demographic variables. Mohammadi et al. reported a meaningful relationship between study years and moral distress, which can be claimed to be consistent with the present study [18]. Studies on nurses have reported a significant relationship between age and moral distress [11, 26-31]. In explaining the reason for this phenomenon, it has been stated that people's experience in facing the challenges and conditions of moral distress increases with older age. They are less likely to experience moral conflict and pain in repeated encounters due to knowledge and awareness of these issues. Another reason is that, over time, adaptive mechanisms are used in the face of these challenges [11, 26-31]. However, Wiggleton et al. did not report any significant relationship between age and moral distress, which is not consistent with the present study [32]. In our study, the age range was higher, and since some

students (discontinuous bachelors) had work experience, this could be the reason for the difference in the findings of the two studies.

Consistent with our study, in some studies on nurses, a significant negative correlation has been reported between years of service and moral distress. The results say increasing years of service to reduce moral distress, which has been attributed to improved work experience and adaptation with ethical distress conditions leading to less moral pain in an individual [11, 28, 33-35]. However, in the study of Baghdadi et al., the year level of the students has no significant correlation to their moral distress. Students refuse to give feedback in moral distress situations, citing fear of the clinical professor or clinical instructor and concern over grades [36]. Also, in the Bordignon et al. study, there was a direct correlation between the student's semester and moral distress levels. The highest rate of moral distress was reported among students in the final semester [37].

CONCLUSIONS

According to the results, operating room technologist students' moral distress in the educational setting was reported at a moderate level, which requires investigating the factors involved in creating moral distress and providing strategies and measures to reduce its adverse effects in the educational setting. Suppose the causes and factors of operating room technologist students' moral distress are identified and eliminated by the academia. In that case, the moral pain experienced by them during the educational setting can be prevented.

Also, it seems moral distress does not have been studied in operating room nurses and operating room technicians and is worth exploring as this specialty is challenging in an environment. And in the future, students will be the workforce in this environment.

This study is limited to a single discipline. Its results cannot be generalized to other fields of medical science; therefore, it is recommended to consider further studies in this regard and review the factors affecting moral distress given different educational conditions in other educational settings.

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Conflict of Interest

There is no conflict of interest.

Ethical Consideration

This study was published on IR: IUMS.REC.1395. 9411101005 by the ethics committee of the Iran University of Medical of Sciences.

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Authors' Contribution

Conceptualization: NK, SH, FA. Data curation: NK. Formal analysis: AFH. Funding acquisition: Iran University of Medical Sciences. Methodology: NK, SH. Project administration: NK, SH. Visualization: NK. Writing–original draft: NK, SM. Writing–review & editing: NK.

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