

Original Article

Evaluation of the Relationship between Classroom Management Styles and Responsibility of Dental Students during COVID-19 Pandemic

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Abstract

Background & Objective: Classroom management is the first level of educational management that affects the quality of education. In fact, classroom management plays a fundamental role in the formation of education structure, teaching process and personality development, and mental, emotional, educational, and training process of learners. The present study aimed to determine the effect of teachers' classroom management style on dental students' responsibility.

Materials & Methods: This was a descriptive and correlational study performed on dental students of Rafsanjan University of Medical Sciences following passing the basic sciences exam. The sample size was estimated at 97 (out of 132) using the Morgan table. In addition, data were collected using a framework by Wolfgang and Glickman (1986) and the Five-Factor Model by Costa & McCrae (1991). Furthermore, data analysis was performed in SPSS version 26 using descriptive statistics and a linear regression model.

Results: In this study, the mean score of classroom management and responsibility variables was 4.0 ± 11.36 (out of 5) and 3.83 ± 1.22 , respectively. Among the classroom management dimensions, the highest mean estimated was related to behavior management (4.1 ± 29.01). According to the results, education management, individual management, and behavior management had a significant positive effect on dental students' responsibility. Overall, teachers' classroom management style predicted 55% of the responsibility of dental students.

Conclusion: According to the results of the study, all three dimensions of education management, individual management, and behavior management had an impact on students' responsibility. In addition, the individual management dimension had the most effect on the responsibility of participants. Based on our findings, dental students will gain more responsibility during the training by benefiting from the guidance and support of teachers.



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Introduction

Iran's first official coronavirus disease 2019 (COVID-19) case was recorded on 19 February 2020, causing several problems for all walks of life. The pandemic even affected the education area. Even though virtual education helped, it was not able to fully compensate for school closure. In medical sciences, education is a result of experience, and experience is a result of linking book theory information with objective clinical cases (1). The coronavirus epidemic can be used as an educational opportunity for medical students passing the clinical course. This is the best chance to internalize ethical concepts such as responsibility, altruism, as well as the professional and ethical commitment of students (2). Education is fundamental to the development and growth of human societies. One of the key responsibilities and missions of education is training qualitative, developed, and specialized human beings. An efficient workforce causes the transformation and progress of society by emphasizing knowledge, skill, and lofty thoughts (3). Educational quality depends on various factors, including classroom

management, which is actually the first level of educational management and plays a basic role in shaping the structure of education, teaching process and personality development, and mental, emotional, educational, and training process of students (4, 5). In fact, management style and method are important factors affecting the efficiency of different types of organizations. Accordingly, educational administration can be of paramount importance since the goals of educational institutions are based on human beings and human relations, and their mission is to turn individuals into creative, self-conscious, and developed people and supply the human resources required in various cultural, social and economic parts of the society (5).

The classroom is a social system, and as a group, has common beliefs, norms, and values. It is actually recognized as a small community. The teacher of the classroom is responsible for performing management functions (i.e., planning, organization, leadership, monitoring, control, and assessment) as the administrator. The realization of these affairs will prepare the classroom conditions for learning.

Considering a classroom as an educational subsystem highlights the role of teachers, instructors, and management styles in the realization of educational goals and training people who could fit today's world (6). Wolfgang and Glickman (1986) have presented an accurate and comprehensive definition of classroom management, introducing it as the wide variety of skills and techniques that teachers use to manage students in the classroom, including social interactions, learners' behavior, and learning process. In this definition, classroom management has various basic aspects, including discipline and behavior management. Therefore, classroom management involves discipline even though it is not limited to this concept (7, 8). Teachers' role in education is the most important factor for creating learning. In fact, teachers are responsible for the establishment of effective learning environments. Accordingly, teachers' work quality and classroom management styles are the main affairs related to creative learning and education. Little research has been done on classroom management, which is one of the most common and important classroom issues (9). Classroom management affects students' responsibility, which is defined as a person's improved resistance to circumstances to act based on internal obligations instead of yielding to external pressures (10).

Responsibility is a valuable human trait, through which mankind has become superior to all creatures in the world. To date, various definitions of responsibility have been proposed, each focusing on a different aspect of the concept. According to Clemes and Bean, responsibility is defined as the ability to respond. In general, it is related to effective and proper decision making, which means choosing within the framework of expected social norms in a way that could create positive human relations and success and increase comfort and security. In addition, an effective response enables the person to achieve goals, which can strengthen their self-esteem (10). In their research on the conceptualization of responsibility, Costa and McCrae (2004) considered six factors of competence, order, dutifulness, achievement striving, self-discipline, and deliberation. Accountable people can maintain controlled social motivation, meaning that they think about the action before performing it, can postpone satisfaction, follow norms and rules, and can prioritize matters. In addition, they often have long-term plans, technical skills, and an organized network (11). The hidden curriculum is more important than other curricula, including the visible curriculum, which has the most impact on the character building of learners, especially their responsibility aversion or accountability. The primary mission of universities is to

holistically develop humans, and ultimately the community. Aversion to responsibility leads to the neglect of one's role and position, which can cause precariousness in the community. This is mainly because students make the future of the country and their lack of responsibility toward their role results in the lack of progress and development in the country (12). In a study, Shahmohammadi (2020) reported the positive effect of self-awareness on the responsibility of medical students. In fact, this scholar exploited the self-awareness skill to improve students' responsibility (13). In another research, Chiedozi et al. (2016) expressed that the improvement of teachers' knowledge to adopt a suitable class management method could increase the knowledge of learners (14).

Dentistry is one of the difficult and sensitive businesses of society. This type of business deals with human beings' oral hygiene and, therefore, requires scientific and professional skills and responsibility toward patients. In fact, dental students are accountable to patients. Therefore, they should do their duties to the best of their ability, which requires a sense of responsibility. Given that professors of the discipline of dentistry teach theory alongside clinical practice, and since acquiring scores for theory courses is a necessity to take practical courses, the classroom management style of teachers in both types of courses can have a special impact on students' learning. In addition, it can enhance their social and communication skills and increase their self-confidence (15).

One of the challenges of the COVID-19 pandemic has been the incompatibility of education and the loss of the opportunity to fully train students (1). With this background in mind, the present study aimed to determine the relationship between teachers' classroom management style and dental students' responsibility.

Materials and Methods

This descriptive study evaluated teachers' classroom management styles in both theory and practical courses of the school of dentistry, Rafsanjan University of Medical Sciences during May-December, 2021. The statistical population included 132 students studying at the mentioned university after passing the basic science courses. In total, 97 individuals were selected based on the Morgan table. Notably, the students were selected from both theory and practical classes. Due to the COVID-19 pandemic situation and lack of presence of students in the university, a combination of electronic and print questionnaires was distributed among the participants. Primarily, the number of students of each entry year after the basic sciences courses was determined at 132 following referring the education department of the university.

Afterwards, the number of students who were present at the university was estimated at 30, and paper questionnaires were distributed among them and collected after five minutes. Moreover, questionnaires were distributed among the absent students electronically by sending a link. After a week, those who did not complete the questionnaires were reminded to fill out and send the tools. Sampling continued until the completion of 97 questionnaires and the process was discontinued after receiving the foregoing number of instruments. In total, two standard tools were used to collect data. Teachers' classroom management style was assessed using a framework developed by Wolfgang and Glickman (1986), which was translated into Farsi by Aali and Yazdi, and its reliability and validity were confirmed (16). The instrument encompasses 25 items that assess management styles in three dimensions behavior management, individual management, and education management. In addition, the items are scored based on a five-point Likert Scale, from extremely low to extremely high. Furthermore, 13, 8, and 4 items are allocated to the subscales of education management, individual management, and behavior management, respectively. The minimum and maximum scores of the tool are 25 and 125, respectively.

The Five-Factor Model (Costa & McCrae, 1991) was applied to assess students' responsibility. The tool includes five big personality areas of extraversion, neuroticism, openness to experience, agreeableness, and conscientiousness. Moreover, the instrument comprises 12 items, scored based on a five-point Likert Scale, from extremely low to extremely high. The minimum and maximum scores of the tool are 12 and 60, respectively (17). To determine the reliability of the instruments, 30 questionnaires were distributed among samples as a pilot study, and the Cronbach's alpha coefficient of the research variables was calculated. In the end, the reliability of all variables was above 0.7, which demonstrated the acceptable reliability of the research variables. Data analysis was performed in SPSS version 26 using skewness and kurtosis to

determine the normal distribution of the data, the one-sample t-test to compare different dimensions of the scale (education management, individual management, classroom management, and responsibility), and correlation coefficient and simple regression to evaluate the effect of classroom management style and its dimensions on students' responsibility.

Results

In total, 38 subjects (39.2%) were male and 59 participants (60.8%) were female. Table 1 presents the demographic characteristics of the participants. The mean classroom management score was 4.0 ± 11.63 , whereas the mean responsibility variable was estimated at 3.1 ± 83.22 (Table 2). In this study, skewness and kurtosis indices were used to evaluate the normal distribution of the data. Table 3 shows the results related to the skewness and kurtosis tests. Given that the standard error for skewness and kurtosis of all variables was in the range of -2 and +2, the data was confirmed to have a normal distribution, which resulted in the use of parametric tests (Table 3). The mean research variables along with the one-sample t-test are presented in Table 4 to evaluate the status of the research variables. According to the results, the highest mean was related to the behavior management dimension among the classroom management dimensions (4.1 ± 29.01). In addition, the mean responsibility of students was estimated at 3.83 ± 1.22 . The one-sample t-test with a mean of 3, which is the middle of the score range of the questionnaire, was implemented, and its results indicated that all research variables had a status higher than the average level. Moreover, a simple regression test was applied to evaluate the effect of classroom management style and its dimensions on students' reliability. Table 5 presents the regression test results, which demonstrated the significant positive effect of education management, individual management, and behavior management dimensions on the responsibility of medical students.

Table 1: Frequency and Percent information of dental students during the Covid19 pandemic

Variable	Categories	Frequency	Percent
Gender	Female	38	39.2
	Male	59	60.8
Age	22 years and under	37	38.1
	23 years and older	60	61.9
Entering year	1394	25	25.8
	1395	29	29.9
	1396	23	23.7
	1397	20	20.6
Total		97	100

Table 2: Descriptive Statistics of the Impact Variables of Teachers' Classroom Management Style on the Responsibility of Dental Students during the Covid19 Pandemic

Variable	Minimum	Maximum	Mean	Standard deviation
Education Management	1	5	3.90	0.93
People management	1	5	4.15	0.94
Behavior management	1	5	4.29	1.01
Class management	2.05	5	4.11	0.63
Responsibility	1	5	3.83	1.22

Table 3: Check the Normality of Data Distribution

Variable	kurtosis	Standard kurtosis error	Skewness	Standard Skewness error
Education Management	1.50	0.48	-1.24	0.24
People Management	2.50	0.48	-1.62	0.24
Behavior Management	2.78	0.48	-1.07	0.24
Class Management	-0.22	0.48	-0.50	0.24

Table 4: One-sample t-test of the Variables of the Effect of Teachers' Classroom Management Style on the Responsibility of Dental Students during the Covid19 Pandemic

Variable	Mean	Standard deviation	t-test	Significance level
Education Management	3.90	0.93	9.49	0.001
People management	4.15	0.94	12.03	0.001
Behavior management	4.29	1.01	12.50	0.001
Class management	4.11	0.63	17.23	0.001
Responsibility	3.83	1.22	6.75	0.001

Table 5: Results of Regression Test of Variables of the Impact of Teachers' Classroom Management Style on the Responsibility of Dental Students during the Covid19 Pandemic

Criterion variable	Predictive variable	F	Significance level F	t-test	Significance level	Regression coefficient R	Coefficient Of Determination	Durbin-Watson
Responsibility of dental students	Education management	32.79	0.001	5.72	0.001	0.50	0.25	1.42
	People management	57.81	0.001	7.60	0.001	0.61	0.37	1.32
	Behavior management	14.24	0.001	3.77	0.001	0.36	0.13	1.31
	Class management	117.48	0.001	10.83	0.001	0.74	0.55	1.47

According to the results, the classroom management style of teachers predicted 55% of dental students' responsibilities. Since the degree of freedom of the research model was 87 and not zero, we estimated

the Chi-square goodness of fit statistic. According to the results, the Chi-square statistic of the model was estimated at 119.98. Given that Chi-square is interpreted based on the degree of freedom, the chi-

square to degrees of freedom ratio was estimated at 1.37, which demonstrated the fit of the model since it was lower than 3. The $RMSEA=0.063<0.08$ also approved the fit of the structural equation model. As observed, the highest coefficient (0.51) was related to the classroom management of teachers of Rafsanjan School of Dentistry, whereas the lowest coefficients were related to behavior management (0.29) and education management (0.43). Accordingly, the classroom management style of teachers focused on individual management, education management, and behavior management, respectively. Overall, the structural equation model predicted 33% of changes in students' responsibility through teachers' classroom management.

Discussion

In general, classroom management is a key variable in creating a good atmosphere for the education and learning of learners. Today, equipping teachers with efficient skills of management in planning professional training, especially medical and dental education, is an undeniable necessity. Therefore, it is crucial to identify factors related to effective classroom management styles as prerequisites for the design of methods to develop management styles and skills (18). The present study was conducted on 97 dental students of Rafsanjan School of Dentistry in 2020-2021. According to the results of the present study, the mean of each classroom management dimension was significantly higher than the hypothetical mean, which is consistent with the results obtained by Amini et al. (18). In addition, the highest mean was related to the behavior management dimension, which is inconsistent with the results achieved by Amini et al. (18). In their research, the highest mean was related to education management style, and this lack of consistency between the results might be due to differences in research settings since the foregoing study was performed at Kashan University of Medical Sciences. The difference in teachers' classroom management styles might be another cause of the difference between the results of the two studies. Furthermore, the high mean of classroom management style was indicative of the exploitation of the interventionist management style by teachers of Rafsanjan School of Dentistry, which is congruent with the results obtained by Amini et al. (18). This indicated the important role of teachers in education and learning because of the sensitivity of education in the dentistry discipline, which deals with people's health.

In this regard, studies conducted by Hepburn et al. (19) and Larson et al. (20) demonstrated the use of the interventionist management style by teachers.

Moreover, Akbari et al. (21) and Soheili et al. (22) reported the use of the interventionist classroom management style by Iranian teachers, which is consistent with our findings. In this regard, our findings are not in accordance with the results obtained by Bakhshaish (5), Hozhabri et al. (23), Mozafari et al. (24), Rezaei et al. (25), Kukhyeon et al. (26), and Luistro et al. (27), since, according to their results, teachers exploited the interactive classroom management style, which demonstrated the mean score of the classroom management style. As mentioned before, this lack of consistency between the results might be due to differences in the educational environment of schools and universities, as well as between non-medical and medical, and dentistry disciplines. Moreover, the results were indicative of the significant positive effect of the education management dimension on students' responsibility, and the coefficient of determination of 0.25 indicated that 25% of changes in students' responsibility were predicted by education management. Accordingly, supervising students' work during class activities, determining classroom teaching materials, focusing on students' abilities and motivations, requiring students to follow classroom rules, and other issues related to educational administration could increase students' responsibility. According to the results of the current research, individual management had a significant positive impact on students' responsibility, and the coefficient of determination of 0.37 demonstrated that individual management predicted 37% of dental students' responsibility. In other words, rewarding and encouraging students when they do the right thing, giving students group work, giving students choice in extracurricular activities, and guiding students in group work can improve student responsibility. Based on our findings, behavior management had a significant positive effect on students' responsibility, and a coefficient of determination of 0.13 predicted 13% of dental students' responsibility. Scheduling learning activities, strictly enforcing classroom rules, providing teaching aids to students, and allowing students to interact freely with each other affect the improvement of student responsibility. Based on the comparison of the structural equation model and the regression model, the coefficient of determination of the regression model and structural equation model was 55% and 33%, respectively, which was due to the higher accuracy of estimation in the structural equation model since the correlation of questions and variables is examined in this method and a more accurate coefficient of determination is provided. Overall, the classroom management coefficient of teachers of dental school with a coefficient of determination of 0.33

demonstrated that the classroom management style of teachers predicted 33% of dental students' responsibility.

Conclusion

The classroom management style of teachers, which encompassed three dimensions of education management, individual management, and behavior management, affected students' responsibility. However, the individual management dimension had the most impact on the responsibility of the participants. Given the use of the interventionist classroom management style by teachers, dental students would gain more responsibility during the training by benefiting from the guidance and support of instructors. It is recommended that the effect of three classroom management styles of interventionist, non-interventionist and interactive on dental students' responsibility be assessed in future studies. It is also suggested that the favorable classroom management style from the perspective of dental students in each entrance year be evaluated, and the proper classroom management style be determined based on the experience of students. One of the major drawbacks of the current research was the lack of access to several students in person due to the COVID-19 pandemic and virtual education, which led to the use of electronic questionnaires. Another limitation was the unwillingness of some of the subjects to participate in the current study and incomplete questionnaires. In addition, there was an insufficient number of in-person classes, based on which students filled the questionnaires.

Conflicts of Interest

There is no conflict of interest in the present study by the authors.

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