Research Article

Evaluation of Nursing Students' Perceptions about Classroom Climate and the Associated Factors*

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Abstract

Classroom climate is a significant concept that influences both students' learning levels and their social and emotional development. Receiving an education in a positive classroom climate has a fostering effect on students' development. Accordingly, the study aimed to evaluate the nursing students' perceptions of classroom climate and associated factors. This descriptive and cross-sectional study was carried out with 417 volunteer students out of 786 students studying at the nursing department of a health sciences faculty of a university. The data were collected using the Information Form and the Classroom Climate Inventory and were analyzed with the number, percentage, mean, ANOVA, and t-test. According to students' perceptions, the classroom climate inventory total score was 50.43±15.37. Male students (t= -2.016; p=0.044), first and fourth-grade students (p<0.05), those who thought that instructors supported in-class collaboration (t=9.387; p=0.000), who felt a sense of belongingness to the class (t=10.061; p=0.000), who were satisfied with the basic vocational courses (t=6.871; p=0.000), and who evaluated the communication between students as positive (t=13.161; p=0.000) had statistically significantly higher scores in the classroom climate inventory. Students generally had average positive perceptions about classroom climate. However, the class climate perceptions of the following students were higher: male students, first and fourth grade students, those feeling satisfied with basic vocational courses, those who thought that instructors supported in-class collaboration, who felt a sense of belongingness to the classroom and who evaluated the communication among students as positive.

Keywords: Perception, classroom climate, classroom environment, nursing, students

1. INTRODUCTION

Classroom climate refers to a complex concept that is used interchangeably with the learning environment, classroom environment, and classroom atmosphere (Adelman & Taylor, 2005). It is also called the social-psychological environment which involves student and teacher perceptions, attitudes, behaviors, and classroom interactions (Rowe, Kim, Baker, Kamphaus & Horne, 2010) and in which learning takes place (Johnson, 2009).

Classroom climate is a versatile dynamic concept that directly affects learning processes in the cognitive and affective domains and reflects the classroom environment. Each class has its own characteristic, climate, and social structure. Classroom climate is influenced by various variables such as students' interactions/relationships with their teachers and each other, the organization and structure of the classroom environment, the rules to be followed and the physical conditions of the classroom, as well as the psychological, social, and physical effects, students' own perceptions, satisfaction levels and fears (Adelman & Taylor, 2005). These variables directly affect students' learning processes by influencing the classroom climate positively or negatively (Adelman & Taylor, 2005; Wang & Degol, 2016). While a positive classroom climate encourages students to achieve more in learning, a negative classroom climate can act as a barrier to students' learning processes (Lee, 2005). Comfortable, understanding, and tolerant classroom environments contribute to the improvement of the classroom

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climate by increasing social interaction between teachers and students. A productive classroom environment can be created by improving the learning processes of students in a positive way. However, behaviors such as bullying, aggression, and social and emotional incompatibilities in the classroom environment disrupt social interaction in the classroom, leading to a negative classroom climate and negatively affecting students' learning processes (Gazelle, 2006). Thus, a positive classroom climate stimulates the learning level of the students, whereas a negative classroom climate reduces their academic achievement. Different classroom climates are reported to have an impact on students' behaviors as well (Matsumura, Slater & Crosson, 2008).

A meta-analysis showed that the general classroom climate had a moderate positive correlation with social competence, motivation, participation, and academic achievement and had a low level of correlation with socio-emotional distress and externalizing behaviors (Wang, Degol, Amemiya, Parr & Guo, 2020). An increasing amount of research emphasizes that students' perceptions of a positive classroom environment directly affect their academic achievement (Baker, 2006) as well as their satisfaction (Djigic & Stojiljkovic, 2011), motivation (Anderson, Hamilton & Hattie, 2004), social skills, and competencies (Baker, 2006). Positive classroom climate was reported to improve the collaboration between students and decrease the bullying and conflicts between them (DiLalla & Mullineaux, 2008).

Classes exist for teaching and learning activities. Learning mostly occurs in classrooms. Both the quality of teaching and the level of learning can be improved through effective classroom management. For effective classroom management, it is essential to create a positive classroom climate to achieve the expected gains and goals in higher education (Gülbahar & Ekici, 2018). In nursing education, one of the higher education programs, students acquire professional skills and practices in many different educational environments such as the classroom, laboratory, and clinical settings. They are consequently affected by the variable educational environments, instructors, clinician nurses, other members of the healthcare team, and the physical environment. Thus, the success of student nurses depends mainly on the experiences in the learning environment, and a positive learning environment is required for the success of education. A review of previous studies on this subject shows that the clinical environment is mostly evaluated within the learning environment of nursing students. While a positive clinical learning environment has been reported to affect students' learning processes and facilitate the achievement of clinical practice goals positively (Aktaş & Karabulut, 2016; Cabar, Kaya, Kaya & Karacuha, 2019), a negative clinical learning environment causes stress and anxiety in students (Cabar et al., 2019).

In nursing education, giving applied and theoretical education in unsuitable educational environments will probably fail to provide the targeted contribution to the student, and students will be adversely affected by this inconvenience. The literature cites that positive classroom climates play a key role in students' academic achievement throughout their academic life. However, the evaluation of classroom climates in the learning process of nursing students has been mostly neglected, and available studies mostly focus on the clinical learning environment of the students. Given that, evaluating nursing students' classroom climates is a critical requirement for students' academic success. Exploring the positive or negative classroom climate perceptions of the students according to their grades and identifying associated factors should contribute to the quality of nursing education. Therefore, the study aimed to evaluate the nursing students' perceptions of classroom climate and associated factors. The results of the research can contribute to building a positive learning environment by considering the individual differences of educators and students and can improve students' learning success and motivation. It can help identify the associated factors for a positive classroom climate for nursing students to develop their knowledge and skills.

2. METHOD

2.1. Research Type

This is a descriptive and cross-sectional study to determine the perceptions of nursing students regarding classroom climate and associated factors in the spring semester of the 2019 academic year.

2.2. Research Population and Sample

The population of the study consisted of 786 student nurses studying in the nursing department of a university in the Black Sea Region of Turkey. The study's sample size calculated using the sample size method for frequency in a population with OpenEpi, Version 3 program was 259 students (95% confidence level and one design effect). However, the study was conducted with 471 nurse students who were larger than the calculated sample size and volunteered to participate in the study. When the class climate levels of the female and male student groups were taken into account, the power of the sample of the study was 51%.

2.3. Data Collection Tools

The data were collected with the information form to determine the socio-demographic characteristics of the students and the "Classroom Climate Inventory" to identify students' classroom climate perception levels.

Information Form: Developed by the researchers, the form consists of 12 questions on students' age, gender, grade, grade point average, place of residence, instructors' support for in-class collaboration, activities of the school administration that support in-class collaboration, the opportunities that support the collaboration across the school, activities organized at the school, feeling a sense of belongingness in the classroom, being satisfied with the basic vocational courses and in-class communication between the students.

The Classroom Climate Inventory: Originally named "Connected Classroom Climate Inventory (CCCI)", the inventory was developed by Dwyer, Bingham, Carlson, Prissbell, Cruz and Fus in 2004 to measure perceptions of student-to-student connectedness. Turkish adaptation study was carried out as Classroom Climate Inventory (CCI) by Sağkal, Kabasakal and Türnüklü in 2015. It is a self-assessment inventory with a 5-point Likert type rating system (1=Strongly Disagree, 2=Disagree, 3=Undecided, 4=Agree, 5=Strongly Agree). The inventory consists of 18 items with a single factor structure, and all items are positive. The scores to be obtained from the inventory range from 18 to 90. The Cronbach's alpha coefficients were 0.93. and 0.96. respectively for the original and the version used in this study.

2.4. Data Collection Process

After the permission was granted by the relevant institution, the data collection tools were duplicated, slightly more than the number of classrooms, received the consent of the volunteer students, and distributed the information form and students. Later, researchers informed the students about the purpose and significance of the study in the the inventory to the students. An explanation was made when necessary, and the data collections tools were collected by the researchers in person between May 24, 2019 and June 14, 2019.

2.5. Data Analysis

Numbers, percentages, and averages were used to describe the demographic characteristics of the students. Kolmogorov-Smirnov tests were performed to determine the normal distribution of the data, and it was seen that the data were normally distributed. ANOVA, Bonferroni for Post-Test and t-test were used to compare students' demographic characteristics and inventory scores. The results were evaluated at a 95% confidence interval and a 5% significance level.

2.6. Ethical Considerations

Written institutional permission was received from the faculty dean's office (63582098/299) and the University's Institute of Health Sciences' Ethics Committee (24237859/208). Verbal consents were obtained from the students, and permission was received from the author of the inventory through e-mail.

2.7. Limitations of the Study

The research is limited only to the views of students studying at the faculty of health sciences nursing department of a university.

3. RESULTS

The mean age of the students was 20.43±1.55, and 79.6% of them were female, and 30.7% were in the first year. 51.3% had a grade point average above 3.0, and 61.2% stayed in dormitories (Table 1).

Table 1. The demographic characteristics of the student nurses and their views on the classroom climate

Demographic Characteristics		
Mean age	**n**	**Mean±SD**
Age	417	20.43±1.55
Gender	**n**	**%**
Female	332	79.6
Male	85	20.4
Grade		
1st Year	128	30.7
2nd Year	74	17.8
3rd Year	99	23.7
4th Year	116	27.8
Grade point average		
≤ 3.00	214	51.3
> 3.00	203	48.7
Place of residence		
Dormitory	55	61.2
Others	62	38.8
Instructors' support for in-class collaboration		
Yes	80	67.1
No	37	32.9
Feeling a sense of belongingness in the classroom		
Yes	236	56.6
No	181	43.4
Being satisfied with the basic vocational courses		
Yes	286	68.6
No	131	31.4
In-class communication between the students		
Positive	234	56.1
Negative	183	43.9
Total	417	100

The students' total score on the classroom climate inventory was 50.43±15.37 (Table 2).

Table 2. Student nurses' classroom climate inventory scores (n=417)

Classroom Climate Inventory	**n**	**Mean**	**SD**	**Min.**	**Max.**
Total	417	50.43	15.37	18.00	90.00

The students' grades and scale scores were compared, and the male students' scores on the classroom climate inventory were statistically significantly higher than that of female students (t= -2.016; p= 0.044) (Table 3). A statistically significant difference was found when the average classroom climate inventory scores of nursing students were compared according to their classes (F= 10,870; p= 0.000). The classroom climate inventory total score of the first-year students was higher than those of second and third-year students (Bonferoni test p=0.000; p<0.001), and fourth-year students' classroom climate inventory total score was found to be statistically significantly higher than that of third-year students (Bonferoni test p=0.037; p<0.05) (Table 3). A statistically significant difference was also found between the classroom climate inventory total scores of those who thought that instructors supported in-classroom collaboration and those who did not (t= 9.387; p= 0.000) (Table 3). Besides, the classroom climate inventory total score of the students who had a sense of belongingness to the classroom was statistically significantly higher than those who did not (t= 10.061; p= 0.000) (Table 3). The students who were satisfied with the basic vocational courses had statistically significantly higher mean scores than that of the students who were not (t= 6.871; p= 0.000) (Table 3). The total score of the classroom climate inventory of the students who stated that the in-class communication between the students was positive and statistically significantly higher than that of those who did not (t= 13.161; p= 0.000) (Table 3).

Table 3. Comparison of students' socio-demographic characteristics and the total scores of the classroom climate inventory (n=417)

Socio-demographic characteristics	**n**	**Classroom Climate Inventory**	
Gender		**Mean.**	**SD**
Female	332	49.66	14.66
Male	85	53.42	17.67
		t=-2.016; p = 0.044	
Grade			
1st Year [a]	128	55.61	13.04
2nd Year [b]	74	45.77	14.90
3rd Year [c]	99	45.92	17.90
4th Year [d]	116	51.53	13.80
	F =10.870; p =0.000		
	Bonferroni test= a>b,c; d>c (p<0.05)		
Instructors' support for in-class collaboration		**Mean**	**SD**
Yes	280	55.07	13.35
No	137	40.95	14.91
		t=9.387; p =0.000	
Feeling a sense of belongingness in the classroom		**Mean**	**SD**
Yes	236	56.38	13.59
No	181	42.66	14.07
		t=10.061; p =0.000	
Being satisfied with the basic vocational courses		**Mean**	**SD**
Evet	286	53.85	14.10
No	131	42.96	15.43
		t=6.871; p =0.000	
In-class communication between students		**Mean**	**SD**
Positive	234	57.84	12.55
Negative	183	40.96	13.33
		t=13.161; p =0.000	

No statistically significant difference was observed between the students' classroom climate inventory total scores according to their age, grade point average, and place of residence (p>0.05).

4. DISCUSSION and CONCLUSION

Classroom climate is a reflection of the classroom environment, in which students and teachers come together and carry out educational activities. It is one of the main factors affecting the quality of education and the academic achievement of the student positively or negatively and has thus become a current topic of interest. Based on this, this study, which evaluated the perceptions of nursing students regarding classroom climate, demonstrated that students, most of whom were female and in the first grade, perceived the classroom climate positively at a moderate level. This result indicates that nursing students' perceptions of classroom climate are not at the desired level and should be improved. Consistent with our study, Koohestani and Baghcheghi (2016) performed a study with nursing students by comparing the traditional and team-based learning group and determined that the psychosocial classroom climate perception level of the traditional classroom was moderate. Parlak and Küçükoğlu (2008) examined the effect of classroom atmosphere variables on student achievement and noted that the positive classroom atmosphere perception of nursing students was at a moderate level. Specifically, classroom climate, which has a critical role in the learning process, helps students learn better when their learning environment is supportive, affectionate, and positive.

Among the determinants that affect the classroom climate is classroom management as well as student and teacher characteristics. Students' characteristics and behaviors are the significant components that make up the classroom climate. This study demonstrated that male students had higher classroom climate perceptions than female students, unlike the previous studies on the effect of gender on the perception of school and classroom climate reporting that male students had more negative class climate perceptions (Koth, Bradshaw & Leaf, 2008). On the other hand, according to the research conducted in five Scandinavian countries, male students perceived the classroom climate more positively than female students in Finland and Sweden (Sortkær & Reimer, 2018). This may be because male students perceive the classroom environment more positively thanks to their more positive experiences or because female students' expectations are higher in nursing faculties where faculty members are predominantly women.

Each class has its own characteristics and climate. Classroom climate, which reflects the classroom environment, can be perceived differently at different grades. The classroom climate perception levels of the first-year students in this current study were higher than those of second- and third-year students. Similarly, the fourth-grade students' perceptions of classroom climate were higher than the third-year students. In other words, students' perception of classroom climate varies depending on the grades. This can be attributed to the excitement of the first-year students in nursing education and the fact that they can get one-on-one attention; and to the increase in the professional knowledge and skills of the fourth-year students who are getting closer to performing the profession and their guidance and positive experiences. On the other hand, the lower perception of the classroom climate of the students in the second and third year may be due to the more intense vocational lessons in these periods. In the study of Marzieh and Khodayar (2016), contrary to our study, it was found that the perception of the learning environment decreased from the first year to the fourth year.

One of the essential components affecting the classroom climate is teacher-student interaction (Miller & Cunningham, 2011). The quality of teacher-student interaction makes a great contribution to students' social and behavioral adjustment (Baker, 2006). The present study determined that students who thought that instructors supported in-class collaboration had more positive classroom climate perceptions. In other words, students who noticed their teachers' supportive behavior towards them had a more moderate classroom climate perception. Rowbotham (2010) argued that when educators are more sensitive to the needs of nursing students, students felt more supported, more interested in lessons, and more satisfied with the classroom (Rowbotham, 2010). Developing and implementing a positive psychosocial environment in the classroom should be one of the main responsibilities of

educators. The teaching styles of educators will be a guide to understand the classroom and improve the environment in which students learn. Management applications or disciplinary practices that are harsh, reactive, or controlling can weaken students' self-motivation to regulate their behavior. In nursing education, the active participation of students in the classroom facilitates learning by transferring information from the classroom to the clinical environment (Wu, 2013). Therefore, an effective educator should create a positive classroom climate and be in active communication and interaction with their students with affection and respect and motivate students to learn by paying attention to individual differences, different educational interests, and needs. They should support each student to gain self-confidence by using diverse teaching methods. Using the rewarding method, one of the reinforcing factors for learning in the classroom, a positive climate should be created in the classroom, and the student should be motivated towards more learning and success (Başţepe, 2012). Thus, educators have a critical role in modeling positive interactions and displaying supportive behaviors in the classroom (Johnson, 2009). For example, calling students by name, asking research questions, smiling, and nodding can increase student participation (Crombie, Pyke, Silverthorn, Jones & Piccinin, 2003). In an environment that includes such behaviors, students' trust in teachers increases and they feel respected and supported (Banerjee & McCartin, 2018). According to Frisby and Martin (2010), creating a positive classroom environment requires developing student-student relations as well as teacher-student relations. Because the classroom environment is a dynamic social process, it includes not only teacher-student interaction but also student-student interaction (Miller & Cunningham, 2011). In this study, the students who had positive communication with their classmates had more positive classroom climate perceptions, indicating that the relationship between students affected the classroom climate. According to a study examining students' classroom participation, the relationships between students were much more effective than their relationships with their teachers (Sidelinger & Booth-Butterfield, 2010). Peer support that enables students to participate in the classroom has a positive impact on the classroom climate by creating a participatory classroom environment (Frisby & Martin, 2010). It is equally important for teachers and students to establish a positive relationship with each other, as well as for students to develop a positive relationship with their peers to foster a positive classroom environment. Evidence shows that getting support from peers facilitates psychological adjustment as well as social and academic goals. On the other hand, lack of peer support is linked to low self-esteem, depression, and problematic behaviors. This is because when students think that they are not valued and respected as individuals, they are less likely to participate in the lesson or be interested in the subject (Barr, 2016).

The positive classroom climate is closely related to students' feelings of belongingness to the school environment (Osterman, 2000). In the study, students who felt a sense of belongingness to the classroom had more positive classroom climate perceptions. Students with high levels of class connectedness attend courses, are willing to talk in the classroom, are less likely to engage in wrong behaviors and have good relationships with both their instructors and classmates (Frisby & Martin, 2010; Sidelinger & Booth-Butterfield, 2010). In addition, there is a positive relationship between students' class engagement and learning, and students' perceptions of class engagement are associated with many factors regarding their teachers and the course (Frisby & Martin, 2010; Johnson, 2009). Students who feel more connected to their friends, class, or school may be more prone to learning because when students work together and provide peer education to each other, their learning becomes easier, and they become successful (Ünver & Akbayrak, 2013). Thus, a positive relationship can be established between students who feel connected to the classroom, have a positive classroom climate perception and perception of learning. In this respect, a co-created positive classroom climate should foster student participation and minimize student passivity (Sidelinger & Booth-Butterfield, 2010).

Classroom climate is defined as the satisfaction students get from the classroom environment. Among the variables considered as determinants of classroom climate, the structure of the lesson appears to be an important factor (Gillen, Wright & Spink, 2011). The study revealed that the students who were satisfied with the basic vocational courses had more positive class climate perceptions because classroom climate has a determining effect on students' learning outcomes (Banerjee & McCartin, 2018). A meta-analysis pointed out a positive relationship between students' perceptions of classroom climate and motivation and learning outcomes (Wang et al., 2020). In this sense, the positive classroom climate enables students not only to succeed in their lessons but also to make them satisfied with their lessons and positively affect their learning process. Supporting this view, the study conducted by Akman, Baltacı, Metin, Benli, Doğan, Deniz and Kulakaç (2019) found that nursing students who were satisfied with the clinical practice had more positive perceptions of the clinical learning environment (Akman et al., 2019). In other words, students who were highly satisfied with clinical practice also evaluated their clinical learning environment positively.

It is desirable and critical for effective education that students perceive the classroom climate positively. In this study, in which nursing students' classroom climate perceptions were evaluated, the classroom climate perceptions of students were found to be moderate. The classroom climate perception levels of male and first and fourth-year students were found to be higher. Also, students who thought that instructors supported in-class collaboration, perceived positive communication between students in the classroom, felt a sense of belongingness to the classroom, and were satisfied with the basic vocational courses had higher classroom climate perception levels. These results suggest that the classroom climate perceptions of female and second and third-grade students needs to be improved. In addition, initiatives should be taken to improve the classroom climate perceptions of students who are not satisfied with their lessons and the cooperation and communication in the learning environment. To this end, regular meetings can be held to listen to the students' requests, expectations, wishes, and complaints so that nursing students perceive the classroom climate more positively. Improvements can be made by making use of the meetings and the findings of this research, and they can be shared with students on the web page and via social media. Peer education methods, groups, and teamwork can be integrated more into lessons. The factors that reduce the classroom climate perceptions of second and third grade students can be eliminated by examining them through face-to-face interviews. Social activities and exchanges can be organized to increase student-student and student-teacher interaction. Educators can be trained on classroom management and classroom climate. Further comprehensive studies can be conducted to examine the socioeconomic status of nursing students, such as their ethnic origins, and to identify the classroom climate perceptions of faculty members as well as nursing students.

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