Clinical and Experimental Health Sciences

Investigating the Effect of School Climate on Adolescents' Psychological Resilience and Healthy Lifestyle Beliefs

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ABSTRACT

Objective: Adolescents are prone to many unhealthy behaviors and psychological problems such as anxiety. It is fair to say that the psychological resilience and healthy life behaviors of students who spend most of this transition period in school are largely influenced by the school climate.

Methods: This descriptive, correlational study was conducted to examine the effect of school climate on adolescents' psychological resilience and healthy lifestyle beliefs. A total of 767 students were included in the study. To ensure a homogeneous distribution of students, a stratified random sample was drawn by school and the data were collected by the researchers in the classroom after informing the students about the study. The research data were collected using the 'Adolescent Data Collection Form', 'Delaware School Climate Survey', 'Child and Youth Resilience Measure', and 'Healthy Lifestyle Belief Scale for Adolescents'.

Results: In this study, which aimed to investigate the effects of school climate on psychological resilience and healthy lifestyle beliefs of adolescents, it was found that there was a moderate positive relationship between school climate and students' psychological resilience and healthy lifestyle beliefs. A number of factors have been identified as contributors to school climate, including gender, feeling healthy, and the resilience of children and youth.

Conclusions: The results of this study show that school climate is important for adolescents' psychological resilience and healthy life beliefs.

Keywords: school climate; adolescents; psychological resilience; healthy lifestyle

1. INTRODUCTION

A significant part of adolescence, during which relationships with peers become more important and social interactions more complex, is spent in the school environment. Schools are not only institutions where students learn courses for their academic development but also environments where they acquire social skills and autonomy and learn many healthy behaviors for life (1,2). For this reason, the physical structure of the school and the surrounding environment in which it is located, as well as the parents, teachers, and administrators in the school, are the cornerstones of the school where students continue their development after the home environment. When the school climate is considered as an ecological framework in which the social and physical characteristics of a school come to the fore, it reflects the patterns of experience and norms, values, group relationships, teaching-learning practices and organizational structures in people's school life (1,3,4). School climate, understood as the quality and character of school life, has a direct impact on students' cognitive, social, and psychological development (5). The five general areas of school climate are order-safety-discipline, learning-teaching, social relationships, school environment/structure and school engagement. Safety includes the physical, social, and emotional well-being of students. Teaching and learning includes the learning environment, including academic achievement, expectations, praise and reinforcement, and social, emotional, and ethical learning. The Relationships dimension includes norms related to respect for differences, relationships with adults and peers, and school engagement. Safety includes the physical, social and emotional well-being of students. The final domain, environmental structure, includes aesthetic issues of the environment, such as current books and materials, the physical condition of the school building, cleanliness, and the efforts of school staff and students to preserve the school building and resources (5–7).

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Current evidence shows that school climate is directly correlated with student behavior and academic performance. It has been shown that in schools with poor social relationships, students' attendance decreases, their disruptive behaviors increase and their academic performance decreases (1,4).

School climate is critical to how young people perceive the quality of their school experience. A consistently positive school climate provides physical and social safety and supports students' cognitive, spiritual and emotional development, behavior and learning outcomes (4). Students' personal development, perceived social support, quality of life, school satisfaction, motivation to learn, and health behaviors and psychological resilience develop under the influence of school climate (8). Given that the development of health perceptions begins in childhood and lifelong behaviors are established during adolescence, the importance of school climate becomes clear. It is well known that adolescence influences the psychological, social and intellectual development of students and is considered one of the determining factors for the next stage of life. Adolescents are prone to many unhealthy behaviors and psychological problems such as anxiety (4). It is reasonable to assume that the psychological resilience and healthy life behaviors of students who spend most of this transition period in school are largely influenced by the school climate (4,9,10). Therefore, it was aimed to investigate how school climate affects adolescents' psychological resilience and healthy lifestyle beliefs.

1.1. Research Questions:

– Do adolescent characteristics adolescents affect school climate, healthy lifestyle beliefs and psychological resilience?

– Is there a relationship between school climate and adolescents' healthy lifestyle beliefs and psychological resilience?

2. METHODS

This descriptive, correlational study was conducted to examine the effect of school climate on adolescents' psychological resilience and healthy lifestyle beliefs.

2.1. Design and sample

The universe of the study consists of public high schools in Fethiye district of Muğla province. In the academic year 2022-2023, 6880 students are studying at high schools. The software program G* Power 3.1.9.7 was used to calculate the sample size (11). When calculating the sample, it was determined that 721 high school students were needed to perform the Multiple Logistic Regression analysis with a confidence interval of 95%, a sampling error of 0.05 and a power of 80% (12). A total of 767 students who were studying at the high schools and whose parents gave their written assent to voluntary participation were included in the study. To ensure a homogeneous distribution of students, a stratified random sample was drawn by school and the data were collected by the researchers in the classroom after informing the students about the study.

2.2. Data collection instruments

The research data were collected using the 'Adolescent Data Collection Form', 'Delaware School Climate Survey', 'Child and Youth Resilience Measure (CYRM-12)', and 'Healthy Lifestyle Belief Scale for Adolescents'.

2.2.1. Adolescent Data Collection Form

This form, prepared based on current literature, consisted of six questions about age, gender, educational class, number of members in the family and the state of feeling healthy (4,9,10,13,14).

2.2.2. Delaware School Climate Survey

The scale was developed by Bear et al. (2011) (15). The validity and reliability of this scale were tested for the Turkish language by Durnalı and Filiz (2019) (3). The scale is a 4-point Likert scale: "strongly disagree (1)", "disagree (2)", "agree (3)", "strongly agree (4)". It consists of four sub-dimensions and 17 items. The sub-dimension "teacher-student relations" consists of six items, the sub-dimension "student-student relations" consists of four items, the sub-dimension "liking of school" consists of four items and the sub-dimension "fairness of school rules" consists of three items (3). The Cronbach's alpha coefficient was found to be 0.84. In our study, the Cronbach's alpha coefficient of the scale was found to be 0.87.

2.2.3. Child and Youth Resilience Measure (CYRM-12)

The scale was developed by Liebenberg et al. (2013) (16). The validity and reliability of this scale were tested for the Turkish language by Arslan (2015) (17). The short form of the scale consists of 12 items. The scale has a five-point Likert scale and is graded between "Completely describes me (5)" and "Does not describe me at all (1)". A high score indicates a high level of resilience (Cronbach's alpha= 0.91). In our study, the Cronbach's alpha coefficient of the scale was found to be 0.82.

2.2.4. Healthy Lifestyle Belief Scale for Adolescents (HLB Scale)

The scale was developed by Kelly et al. (2011) (18). The validity and reliability of this scale were tested for the Turkish language by Akdeniz et al. (2020) (19). The scale emphasizes the beliefs in the various aspects of maintaining a healthy lifestyle. It is a Likert-type, with each item in the scale is scored from 1 = strongly disagree to 5 = strongly agree. The increase in the score indicates the increase in the healthy lifestyle beliefs of the adolescents. Cronbach alfa' katsayısı

is 0.90. In our study, the Cronbach's alpha coefficient of the scale was found to be 0.87.

2.3. Data analysis

The data analysis was conducted using the IBM SPSS 20.0 package program (IBM Corp., Armonk, NY, USA). Means and percentages were used to analyze the descriptive data. Skewness and kurtosis were used to test the normality of the data set, and their values ranged from −1.5 and ±1.5, indicating a normal distribution (20). When comparing the characteristics of the adolescents and the scale values, the t-test was used for bivariate data and the one-way ANOVA test for data with more than two variables. The Bonferroni test was used for the post-hoc analysis of the data. The Pearson correlation test was used to examine the relationship between the scales. Multiple linear regression analysis was used to determine the factors influencing school climate.

2.4. Ethical Consideration

Before the start of the study, we sought approval from the Health Sciences Ethics Committee of Muğla Sıtkı Koçman University (Protocol Number: 220150, Decision Number: 1, Date:15.03.2023) and the directorate of national education, with which the schools in Fethiye (Number: E-70004082-605.01-74385002) are affiliated. Data collection took place between May and June 2023. All procedures involving human participants adhered to the ethical standards set by the institutional and/or national research committee and complied with the 1964 Helsinki Declaration, as well as its later amendments or comparable ethical standards. Oral assent was obtained from the children who agreed to participate in the research, while written informed consent was obtained from their parents.

Table 1. *Scale characteristics*

Scale	Mean	Standart Deviation	Minimum	Maximum	Skewness	Kurtosis
School Climate Survey	43.55	8.64	18.00	68.00	-0.146	-0.187
Healthy Lifestyle Belief Scale	57.95	11.01	16.00	80.00	-0.823	1.274
Child and Youth Resilience Measure	42.22	8.51	12.00	60.00	-0.574	0.404

3. RESULTS

It was found that 52% (n=399) of the adolescents were female, 42% were in the 9th grade (n=322) and 51.4% (n=394) lived in a family of four. 30.2% of the adolescents stated that they felt poor health (Table 2).

Table 2. *Distribution of descriptive characteristics of adolescents*

Variables	n	%
Age		
14	98	12.8
15	321	41.9
16	194	25.3
17	128	16.7
18	26	3.4
Gender		
Female	399	52.0
Male	368	48.0
Educational class		
9. grade	322	42.0
10. grade	249	32.5
11. grade	171	22.3
12. grade	25	3.3
Number of members in the family		
3	87	11.3
4	394	51.4
5 and above	286	37.3
The state of feeling healthy		
Yes	535	69.8
No	232	30.2
Total	**767**	**100**

When the mean scale scores were compared according to the descriptive characteristics of adolescents, it was determined that school climate, healthy lifestyle belief and psychometric properties of resilience scores showed significant differences according to gender and feeling healthy. The mean scores of male students on school climate survey (t:-2.322, p<.05), healthy lifestyle belief scale (t:-4.056, p<.05) and child and youth resilience measure (t:-2.603, p<.05) were significantly higher than female students. The mean scores of the school climate survey (t:10.339, p<.05), healthy lifestyle belief scale (t:11.213, p<.05) and child and youth resilience measure (t:9.811, p<.05) of the students who felt healthy were significantly higher than those who felt unhealthy. Conversely, there is no significant difference between the scale values and the variables age, education class, number of family members (Table 3).

When looking at the total scale scores of the adolescents, a statistically significant and positive correlation was found between the total scores of the School Climate Survey and the total scores of the Healthy Lifestyle Belief Scale (r=0.467, p<.01) and the total scores of the Child and Adolescent Resilience Measure (r=0.629, p<.01). A moderate, positive and statistically significant correlation was found between the total scores of the healthy lifestyle belief scale and the total scores of the measure of resilience in children and adolescents (r=0.677, p<.01) (Table 4).

As a result of the multiple linear regression analysis conducted using the Enter method to determine the variables associated with school climate, it was found that the mean scores of students' positive healthy thoughts 0.167 (95% CI= .102-.233) and psychological resilience 0.033 (95% CI= .029-.038) were influenced by school climate (p<.001). The mean values of age, gender and healthy lifestyle beliefs of adolescents were

not influenced by school climate. This model explains 42% of the sample. Thus, adolescents with higher mean scores on the school climate scale had higher mean scores for healthy thoughts and psychological resilience (Table 5).

Table 3. *Comparison of descriptive characteristics and scale scores of adolescents*

	n	School Climate Survey		Healthy Lifestyle Belief Scale		Child and Youth Resilience Measure	
		X̄	Ss	X̄	Ss	X̄	Ss
Age							
14	98	44.41	10.36	57.87	11.27	43.15	8.97
15	321	43.69	8.91	57.76	11.43	42.16	8.98
16	194	42.19	7.70	56.95	11.14	41.60	7.77
17	128	44.68	7.25	60.00	9.39	42.93	7.95
18	26	43.03	10.33	58.07	10.56	40.76	8.71
		F:2.057 p=.085		F:1.530 p=.191		F:0.968 p=.424	
Gender							
Female	399	42.85	8.35	56.42	11.18	41.46	8.55
Male	368	44.30	8.90	59.62	10.58	43.05	8.40
		t:-2.322 **p=.020***		t:-4.056 **p=.000***		t:-2.603 **p=.090***	
Educational class							
9. grade	322	44.05	9.54	57.86	11.05	42.67	8.71
10. grade	249	42.62	7.94	57.40	11.34	41.90	8.36
11. grade	171	43.46	7.67	59.00	10.17	41.90	8.16
12. grade	25	46.84	8.72	57.52	12.67	41.92	9.88
		F:2.546 p=.055		F:0.736 p=.531		F:0.510 p=.675	
Number of members in the family							
3	87	44.48	9.32	59.42	10.24	43.85	9.11
4	394	43.35	8.10	58.17	10.94	42.35	8.22
5 and above	286	43.53	9.15	57.22	11.30	41.56	8.67
		F:0.603 p=.547		F:1.491 p=.226		F: 2.495 p=.083	
The state of feeling healthy							
Yes	535	45.54	8.02	60.68	9.65	44.10	7.84
No	232	38.95	8.28	51.68	11.39	37.90	8.43
		t:10.339 **p=.000***		t:11.213 **p=.000***		t:9.811 **p=.000***	

t: Student T Testi, F: OneWayAnova

Table 4. *The relationship between scale scores of adolescents*

	School Climate Survey	Healthy Lifestyle Belief Scale	Psychometric Properties of Resilience Measure
School Climate Survey	1		
Healthy Lifestyle Belief Scale	0.467**	1	
Child and Youth Resilience Measure	0.629**	0.677**	1

*** p<.01*

Table 5. *Evaluation of factors affecting school climate with linear regression analysis*

Model		Unstandardized Coefficients		Standardized Coefficients	t	P	95,0% Confidence Interval for B		Correlations
		B	SE	Beta			Lower Bound	Upper Bound	
1	Constant	.927	.233		3.97	.000	.470	1.385	
	Age	.001	.014	.002	.07	.945	-.026	.028	-.018
	Gender (male)	.010	.029	.010	.34	.731	-.046	.066	.084
	the state of feeling healthy (yes)	.167	.033	.151	5.01	.000	.102	.233	.350
	CYRM-12 (total)	.033	.002	.556	14.67	.000	.029	.038	.629
	HLB Scale (total)	.001	.002	.032	.82	.411	-.002	.005	.467
F=109.54, p<.001, Durbin-Watson=1.91, R=.65, R^2=.42									
Abbreviations: CI, confidence interval; SE, standard error; β, standardized regression coefficient. *Dependent variable = School Climate.									

4. DISCUSSION

In this study, which aimed to investigate the effects of school climate on psychological resilience and healthy lifestyle beliefs of adolescents, it was found that there was a positive relationship between school climate and students' psychological resilience and healthy lifestyle beliefs. A number of factors have been identified as contributors to school climate, including gender (male), feeling healthy, and the resilience of children and youth.

Although school-level variables such as the average socioeconomic status of the school, school size, or student-teacher ratio determine school climate, student characteristics, the way students perceive, interact with, and feel toward the environment, and variables such as adaptation to the environment, seeking support, and achieving academic goals lead to individual differences in students' perceptions of school climate. Due to its multidimensional nature, perceptions of school climate may vary by student group characteristics such as grade level, gender, and ethnicity. When assessed by gender characteristics, boys generally report lower perceptions of school climate than girls (13,14). In this study, the mean scores of boys on the healthy lifestyle belief scale and child and youth resilience measure were higher than girls, and there was no difference between their perceptions of school climate. One study found that while female students had higher scores for general health than male students, their scores for mental health were significantly lower (14). A study examining school climate and health behavior found that female students were more likely to consume unhealthy foods, exercise less than male students and brush their teeth more often (2). The study by Bhat et al. (2018) reports that female students perceive a more positive school climate. The study found a significant and positive correlation between school climate and students' academic performance, although the perception of school climate varied significantly depending on the type of school. Students in private schools in particular reported a better school climate than students in public schools (21). The results also showed that there were no differences in perceptions of school climate by school type. This could be due to the schools being in the same region and all being public schools.

Teacher support and peer relationships are components of the psychosocial school climate that affect students. Belonging to a positive peer group increases student engagement in school and contributes to healthy behavior (2,7). When students learn in a regular environment where they feel supported, they feel safe and more connected to school. Improving the school climate can be seen as a prerequisite for creating a safe school. Adolescents tend to engage in positive health behaviors when they experience a positive emotional and social climate in a well-organized school. In addition, a good school environment not only promotes student engagement and attendance, but also the adoption of healthy lifestyle habits and psychological well-being among adolescents (4,22). In this study, adolescents who felt healthy had significantly higher scores on the School Climate Survey, the Healthy Lifestyles Scale and the Child and Adolescent Resilience Measure. Nassar et al. (2018) found a correlation between a negative school climate and poor toothbrushing habits. The study found a significant correlation between the sub-dimension of teacher support and physical activity and tooth brushing. In addition, the sub-dimension of peer support was significantly associated with toothbrushing (2). In their study of 47,888 students, Cornell and Huang (2016) found that a positive school climate helps to reduce risky health behaviors in adolescents such as substance abuse, aggression and suicide attempts (22). The school climate is shaped by the behaviors of individuals, including students, teachers, and parents. Consequently, school climate has the potential to influence adolescents' health behaviors in a positive or negative manner. It is noteworthy that the adolescent period, characterized by ongoing development, is a critical juncture for the acquisition of both risky and healthy behaviors, with the school environment playing a pivotal role in shaping these behaviors.

School climate is considered an important indicator of students' emotional and behavioral outcomes. Psychological characteristics of adolescents, including well-being, life satisfaction, ethnic and moral identity, and resilience, are directly related to the school environment. While a positive school environment promotes students' and school staff's social behaviors and supports their learning and psychological development, a negative school climate can hinder growth and development (7,23,24). The results of this study suggest that school climate may have an effect on adolescents' psychological resilience and optimism about their health. It was found that students who reported a more favorable school climate had higher mean scores on psychological resilience and felt positive about their health. A study of secondary school students (5th-8th grade) found that psychological resilience and school climate are significant indicators of life satisfaction (25). In another study, perceived social support and school engagement were found to be important determinants of psychological resilience in adolescents (26). A study of 618 high school students at 15 schools in Australia found statistically significant and positive correlations between students' perceptions of school climate and their self-reported levels of well-being, resilience and moral identity (8). The study's findings align with existing literature on the subject. The significance of the relationship between school climate and health has once again been highlighted.

School climate encompasses the broader environmental characteristics of an academic institution, such as its values, culture, student-teacher relationships, and focus on education. Students' views of school climate have been found to correlate with their psychological well-being (27). Research suggests that school climate is related to the mental and physical health of adolescents. According to László et al. (2019) and Patalay et al. (2020), high school engagement and a sense of safety at school can have a positive impact on students' overall well-being (28,29). This

study found that the school climate has a positive impact on adolescents's healthy lifestyle belief and their psychological resilience. Students who reported a better school climate scored better in both dimensions. A Scottish study of 2,571 students aged 15-16 found that school climate has a positive impact on various aspects of adolescent mental health. Long et al. (2021) reported that adolescents who were bullied by their peers had poorer mental health than those who were supported by their peers and had positive relationships with their teachers (14). In addition, Nie et al. (2020) found that students who experienced a more positive school climate had fewer depressive symptoms than students who experienced a negative school climate (30). In addition to the physical development of adolescents at these ages, their psychological development also continues, with peer and school influences playing a significant role in this process. Consequently, the importance of fostering a positive school climate for the purpose of promoting optimal psychological development in adolescents is underscored.

4.1. Limitations

Due to the preparation time for the university exams, very little data could be collected from grade 12 students. Limitations of the study include the fact that the research was conducted in a single district and that teachers and parents were not included in the determination of school climate. The large sample size is the strength of the study.

6. CONCLUSIONS

Adolescents in secondary school show a high level of involvement in risky health behaviors, such as insufficient physical activity, irregular eating and sleeping habits, consumption of convenience foods and carbonated drinks, and less tooth brushing. On the other hand, the search for identity during this period drives adolescents to many psychological emotions and influences the development of mental health. The results of this study show that school climate is important for adolescents' psychological resilience and healthy life beliefs. In addition, perceptions of school climate were found to vary according to students' gender and health beliefs. These findings suggest that school climate is critical to adolescent development. By examining the relationship between adolescent health and school climate, this study provides a framework for the key characteristics of adolescent health and school climate and sheds light on the goals of school interventions for adolescent development. An authoritative theory of school climate can play an important role in the healthy development of the younger generation by providing a useful conceptual framework for school intervention efforts.

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