ADAPTATION OF THE SCHOOL CLIMATE QUESTIONNAIRE: ITS ASSOCIATION WITH PSYCHOLOGICAL DISTRESS, ACADEMIC SELF-EFFICACY, AND MENTAL WELLBEING IN AZERBAIJAN

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Abstract

School climate is an important concept in the field of education. Therefore, the aim of this study was to adapt the School Climate Questionnaire for use with Azerbaijani adolescents and explore the relationships between school climate, psychological distress, academic self-efficacy, and mental wellbeing. Data were collected from 1204 adolescents in Azerbaijan using convenience sampling. During the adaptation process, confirmatory factor analysis, criterion-related validity, and reliability analyses were performed. Additionally, the relationships between school climate and psychological distress, academic self-efficacy, and mental wellbeing were examined using PROCESS mediational analysis. The results of the confirmatory factor analysis indicated that the scale consisted of 22 items, had a three-dimensional structure, and showed a good fit. Moreover, the results showed that school climate was negatively associated with depression, anxiety, and stress, and positively related to academic self-efficacy and mental well-being. Lastly, the results revealed that school climate had a mediating effect on mental well-being via psychological distress and academic self-efficacy. All of these results suggest that the Azerbaijani version of the School Climate Questionnaire has acceptable psychometric properties.
Keywords: *academic self-efficacy, mental wellbeing, psychological distress, school climate, educational psychology, quantitative research*

Introduction

Aside from academic education, adolescents learn a variety of skills related to establishing relationships, developing behavioral skills, and socializing. Crosnoe (2011) has argued that individuals' adult behaviors are largely developed during their time in school, as schools not only provide academic education but also teach about social rules and how to live in society (Aliyev, 2018). Therefore, school climate can be the basis of all these teachings for individuals.

The concept of school climate has recently received a lot of attention in the literature, and it has been explored and described in many ways in several research studies. For instance, Preble and Gordon (2011) explain that school climate refers to all stakeholders in the school working together to provide a safe educational environment and cooperate in order to achieve success. According to Bradshaw et al. (2021), school climate is a multifaceted and complex structure that characterizes the quality and character of individuals' school lives. It provides a framework for understanding the feelings, thoughts, and interpersonal relationships of all stakeholders in the school, including students, teachers, school administrators, and parents

(Davis & Peck, 1992; Ozdemir et al., 2010). This framework includes all experiences in school life (Thapa et al., 2013) and enables individuals to develop in a healthier way, both academically and socially. Freiberg (1998) has supported this perspective, reporting that school climate can have an impact on the learning environment and adolescents' achievement.

The dimensions that stand out among the characteristics of school climate in the literature are safety, relationships, learning and teaching, and environmental structure (La Salle et al., 2015). Safety refers to the physical, social, and emotional support of adolescents in the school environment (Capp et al., 2020), and relationships mean that all stakeholders act in cooperation in the school environment (Wang & Degol, 2016). While the concept of learning and teaching is explained by the quality of education, the environmental structure is related to the physical environment of the school (Cohen et al., 2009). In the School Climate Questionnaire (SCQ) developed by Bochaver et al. (2022), three dimensions of school climate are explained: (1) Deviant behavior, (2) school wellbeing, and (3) subjective unsafety. Deviant behavior is related to the adequacy of the school environment and compliance with social norms. School wellbeing is the dimension of the school climate related to internal problem areas such as depression and anxiety and external problem areas such as aggression and bullying. Lastly, subjective unsafety is related to safety competence in the social field of the school. These studies demonstrate that school climate is explained by various sub-dimensions in different studies.

A positive school climate is reflected in the attitudes and behaviors of adolescents towards the school (Pehlivan & Özgenel, 2020). Many research findings in the literature have revealed the benefits of a healthy school climate (e.g., Berkowitz et al., 2017; Ebbert & Luthar, 2021; Kelley et al., 2005; Syvertsen et al., 2009). In the aforementioned studies, it has been reported that a positive school climate increases academic achievement and school adjustment. Similarly, in the study by Demirtaş-Zorbaz et al. (2021), it was stated that a positive school climate predicts academic achievement. Moreover, there is a significant correlation between school climate and academic motivation (Wang et al., 2020), peer support (Volk, 2020), and academic self-efficacy (Asıcı & İkiz, 2019; Zysberg & Schwabsky, 2021). In a recent study by Zhang et al. (2022), it was stated that school climate is a significant indicator of academic self-efficacy. Apart from this, there are also research findings showing that school climate is associated with psychological distress (e.g., Collie et al., 2012; Nwafor et al., 2016; von der Embse et al., 2016) and mental well-being (Aldridge et al., 2018; Cocorada et al., 2018) in individuals. All these studies prove the importance of school climate for adolescents, both individually and in terms of education and training.

Research Problem

The research problem is the need to adapt and validate the School Climate Questionnaire for use with Azerbaijani adolescents in order to examine the associations between school climate, psychological distress, academic self-efficacy, and mental wellbeing in the Azerbaijani context.

Research Focus

The research focuses on the adaptation of the School Climate Questionnaire to the Azerbaijani context. In this study, a model examining the mediating role of distress and self-efficacy in the relationship between school climate and mental wellbeing was explored.

Research Aim and Research Questions

School climate, which has been the subject of many research studies recently, has been examined by using different measurement tools. It has been found that the concept of school climate, which has numerous definitions and sub-dimensions in the literature, is measured with diverse assessment tools across various cultures (e.g., Bugay et al., 2018; Calderón & González, 2021; Gage et al., 2016; İnceoğlu & Aslan, 2022; Mehmood et al., 2021; Olsen et al., 2018). This study was necessitated by the lack of any scale development or adaptation studies on school climate, which is a relatively new term in Azerbaijani literature. Accordingly, the validity and reliability of the SCQ developed in the recent study by Bochaver et al. (2022) will be tested in the Azerbaijani population as part of this research. In addition, this study examined the association between school climate and psychological distress, academic self-efficacy, and mental wellbeing. The research questions (RQ) are provided below.

RQ1. Is the School Climate Questionnaire (SCQ) adapted for use with Azerbaijani adolescents a valid measurement tool for assessing school climate?

RQ2. Does the adapted SCQ demonstrate sufficient reliability in measuring the dimensions of school climate among Azerbaijani adolescents?

RQ3. What is the relationship between school climate and psychological distress, academic self-efficacy, and mental well-being among Azerbaijani adolescents?

RQ4. Do psychological distress and academic self-efficacy mediate the relationship between school climate and mental well-being among Azerbaijani adolescents?

Research Methodology

General Background

The research methodology of this study employed a cross-sectional survey design. The adaptation of the School Climate Questionnaire for use with Azerbaijani adolescents was conducted through a multi-step process, including translation and back-translation, expert reviews, and pilot testing. The School Climate Questionnaire was adapted for use with Azerbaijani adolescents through a multi-step process, which included translation and back-translation, expert reviews, and pilot testing. Data were collected from 1204 adolescents in Azerbaijan using convenience sampling. Confirmatory factor analysis, criterion-related validity, and reliability analyses were conducted to assess the psychometric properties of the adapted questionnaire. The correlation between school climate, psychological distress, academic self-efficacy, and mental wellbeing was examined using PROCESS mediational analysis. Overall, a quantitative research approach was utilized in this study to examine the association between school climate and various psychological outcomes among Azerbaijani adolescents.

Sample

Participants completed an online survey, developed on a Google form. The participants who agreed to participate initially completed the consent form. The research sample consisted of 1204 Azerbaijani adolescents, including 714 (59.3%) girls and 490 (40.7%) boys, ranging in age from 11 to 17 years, with a mean age of 13.35 (*SD* = 1.71). In determining the sample size, we took into account the findings from Wolf et al. (2013), who highlighted the wide range of sample size requirements, ranging from as low as 30 to as high as 460 cases. Furthermore, Mundfrom et al. (2009) raised concerns about the use of simplistic rules such as having 10 or 20 participants per item in the instrument. "With these insights in mind, the study aimed to obtain a substantial amount of data to ensure a high level of representativeness and enhance the reliability

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of the conclusions. By including a sample size of 1204 Azerbaijani adolescents, the study aimed to capture meaningful patterns of association between school climate, psychological distress, academic self-efficacy, and mental wellbeing. This approach acknowledges the complexity of determining an appropriate sample size and aligns with the recommendation in the field. In terms of their relations with their peers at school, 778 (64.6%) were satisfied, 344 (28.6%) were partially satisfied, and 82 (6.8%) were dissatisfied. Regarding their relationship with the teacher, 800 (66.4%) were satisfied, 339 (28.2%) were partially satisfied, and 65 (5.4%) were dissatisfied. The parents of 105 (8.7%) of the participants are divorced, and the parents of the rest are together ($n = 1099$, 91.3%). Information regarding the participants is presented in Table 1.

Table 1
Participant Information

Variable	N	%
Gender		
Girl	714	59.3
Boy	490	40.7
Association with their peers at school		
Satisfied	778	64.6
Partially satisfied	344	28.6
Dissatisfied	82	6.8
Interactions with the teacher		
Satisfied	800	66.4
Partially satisfied	339	28.2
Dissatisfied	65	5.4
The marital status of the parents		
Divorced	105	8.7
Together	1099	91.3
Birth order		
Oldest child	582	48.3
Middle child	205	17.0
Youngest child	349	29.0
Only child	68	5.6

Instrument and Procedures

The SCQ-Azerbaijani was utilized as the primary measure, and three additional scales were employed to assess criterion-related validity and facilitate mediational analysis.
Depression Anxiety Stress Scales-21 (DASS-21; Henry & Crawford, 2005). DASS-21, which aims to measure the psychological distress (depression, anxiety and stress) of individuals, has three sub-dimensions in total. There are seven items in each sub-dimension (e.g., "In the last week, I have had the feeling that I had no expectations"). Items are rated on a four-point scale

from 0 (*did not apply to me at all*) to 3 (a*pplied to me very much or most of the time*). High scores on the scale mean more psychological distress. The DASS-21 has sufficient fit values and is valid. The Cronbach's alpha of the scale is .93 for the total score and .88, .82 and .90 for the sub-dimensions, respectively. In this study, the Cronbach's alpha reliability coefficients for depression, anxiety, and stress were found to be 0.85, 0.84, and 0.86, respectively.

Short Warwick-Edinburgh Mental Wellbeing Scale (SWEMWS; Tennant et al., 2007). The SWEMWS, which is used to determine the mental well-being of the participants, consists of seven items (e.g., "I feel comfortable"). A total score can be obtained in the scale with only one sub-dimension. Items are rated on a 5-point scale from 1 (*none of the time*) to 5 (*all of the time*). High scores from the scale indicate a high level of mental wellbeing. It was stated that the construct validity of the scale was at a good level. In addition, the Cronbach alpha reliability of the scale is .89. The Cronbach's alpha reliability coefficient for this study was found to be 0.71.

Academic Self-Efficacy Scale (ASES; Jerusalem & Schwarzer, 1992). The ASES, which measures the academic self-efficacy level of individuals, has seven items (e.g., "I know very well what I have to do to get good grades"). Only the seventh item in the scale with a single sub-dimension is the reverse item. After the reversed items are arranged, a total score can be obtained from the scale. Items are rated on a four-point scale from 1 (*not at all true to me*) to 4 (*completely true of me*). A high score on the scale indicates a high level of academic self-efficacy. Construct validity was ensured because the scale had sufficient fit indices. As a result of the reliability analysis of the scale, Cronbach's alpha was .87. The Cronbach's alpha reliability coefficient for this study was found to be 0.76.

Data Analysis

In the study, structure validity, reliability, and criterion-related validity of the SCQ-Azerbaijan were performed. A mediational model was also tested using the SCQ-Azerbaijan. Confirmatory factor analysis (CFA) with generalized least squares was used to test the structure of the SCQ-Azerbaijan. Chi-square (χ^2) to the degree of freedom (*df*) ratio is considered to be less than 5; the goodness-of-fit index (GFI) and adjusted goodness-of-fit index (AGFI), both with appropriate values $\geq$ .90; the standardized root mean square residuals (SRMR) and the root mean square error of approximation (RMSEA), with a confidence interval of 90% and where values < .08 are suitable (Hu & Bentler, 1999). In addition, the inspection of the means, standard deviations, skewness, and kurtosis of each item was accomplished through item analysis. Cronbach's α coefficient was used to determine internal consistency. In order to search for criterion-related validity, the SCQ—Azerbaijan's relationship with mental wellbeing, depression, anxiety, stress, and academic self-efficacy was considered. Lastly, to examine whether the association between school climate factors and mental wellbeing was mediated by psychological distress and academic self-efficacy, a mediation model was calculated using the PROCESS macro (model 4; Hayes, 2018).

Research Results

Descriptive statistics (mean, standard deviation, skewness, and kurtosis) of the SCQ's items are presented in Table 2. Skewness (-1.906 - 1.514) and kurtosis (-1.986 - 1.634) values indicated that all items met the normality assumption within the critical values of ±2.00 as proposed by Byrne (2010). The three-factor structure of the SCQ had a good fit: χ^2(206, N = 1204) = 527.33, χ^2/df = 2.56; GFI = 0.960; AGFI = 0.951; SRMR = 0.041; RMSEA = 0.036 C.I. (0.032, 0.040). All factor loadings of the items on the SCQ-Azerbaijan were significant (see Figure 1). The model included three factors that could be associated with each other. Latent correlations between factors were −0.82 between school well-being and deviant behavior; 0.91

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between deviant behavior and subjective unsafety; and -0.78 between school well-being and subjective unsafety. When the Cronbach alpha coefficient was calculated, it was seen that the SCQ had relatively low results due to its binary response type: 0.59 for deviant behavior; 0.57 for school well-being; and 0.69 for subjective unsafety. In addition, it can be stated that the scale had results close to the study conducted by Bochaver et al. (2022).
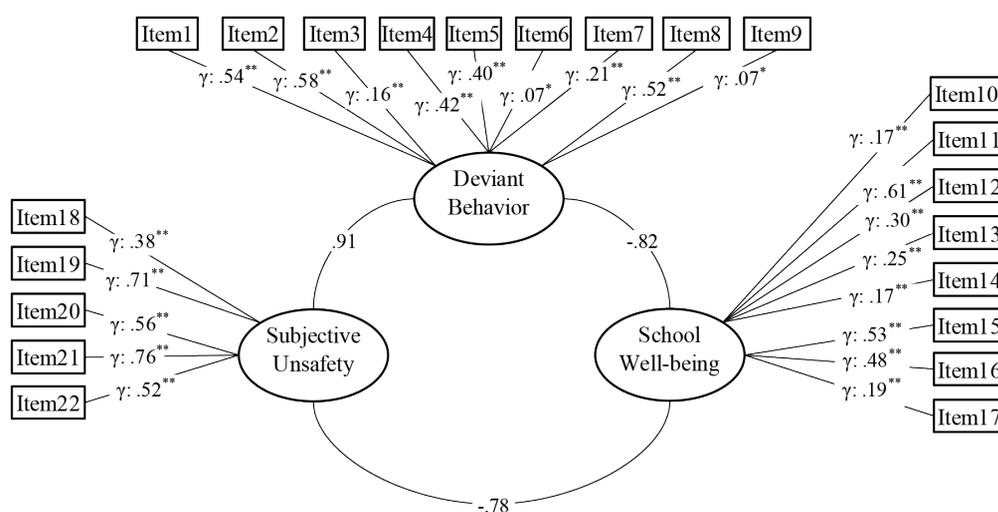
Table 2
Descriptive Statistics for the Azerbaijan Version of the School Climate Questionnaire

Factor	Item	$\bar{x}$	SD	Confidence interval	Skewness	Kurtosis
Deviant behavior	Item 1	0.452	0.498	0.424-0.480	0.194	-1.966
	Item 2	0.381	0.486	0.354-0.409	0.490	-1.763
	Item 3	0.352	0.478	0.325-0.379	0.620	-1.619
	Item 4	0.262	0.440	0.236-0.285	1.086	-0.822
	Item 5	0.581	0.494	0.552-0.608	-0.327	-1.896
	Item 6	0.437	0.496	0.408-0.464	0.255	-1.938
	Item 7	0.199	0.399	0.176-0.221	1.514	0.292
	Item 8	0.413	0.493	0.384-0.440	0.355	-1.877
	Item 9	0.668	0.471	0.641-0.693	-0.713	-1.494
School well-being	Item 10	0.468	0.499	0.439-0.495	0.130	-1.986
	Item 11	0.694	0.461	0.667-0.720	-0.845	-1.288
	Item 12	0.830	0.376	0.808-0.851	-1.757	1.088
	Item 13	0.670	0.470	0.643-0.696	-0.725	-1.476
	Item 14	0.527	0.499	0.499-0.556	-0.110	-1.991
	Item 15	0.752	0.432	0.726-0.776	-1.172	-0.628
	Item 16	0.845	0.362	0.823-0.865	-1.906	1.634
Subjective unsafety	Item 17	0.645	0.479	0.617-0.671	-0.605	-1.637
	Item 18	0.582	0.493	0.555-0.609	-0.334	-1.892
	Item 19	0.300	0.458	0.274-0.325	0.875	-1.237
	Item 20	0.456	0.498	0.428-0.485	0.177	-1.972
	Item 21	0.323	0.468	0.296-0.349	0.758	-1.429
	Item 22	0.393	0.489	0.365-0.420	0.439	-1.810

Three measures (Mental Wellbeing Scale, Depression, Anxiety, and Stress Scale and Academic Self-efficacy Scale) were used to determine the criterion-related validity of the three factors of the SCQ-Azerbaijani (see Table 3). All correlations were statistically significant ($p < .001$). As expected, deviant behavior was negatively associated with mental well-being (r

= -.257, $p < .001$) and academic self-efficacy ($r = -.183$, $p < .001$) and positively associated with depression ($r = .290$, $p < .001$), anxiety ($r = .330$, $p < .001$), and stress ($r = .349$, $p < .001$). Conversely, school well-being was positively associated with mental well-being ($r = .300$, $p < .001$) and academic self-efficacy ($r = .189$, $p < .001$) and negatively associated with depression ($r = -.284$, $p < .001$), anxiety ($r = -.247$, $p < .001$), and stress ($r = -.276$, $p < .001$). Lastly, subjective unsafety was negatively related to mental well-being ($r = -.303$, $p < .001$) and academic self-efficacy ($r = -.211$, $p < .001$) and positively related to depression ($r = .319$, $p < .001$), anxiety ($r = .342$, $p < .001$), and stress ($r = .394$, $p < .001$).

Figure 1
Standardized factor loading of the School Climate Questionnaire – Azerbaijan

Table 3
*Criterion-related Validity Three Factors of SCQ-Azerbaijanis (N = 1204)*

Variables	Deviant behavior	School well-being	Subjective unsafety
Mental well-being	-.257**	.300**	-.303**
Depression	.290**	-.284**	.319**
Anxiety	.330**	-.247**	.342**
Stress	.349**	-.276**	.394**
Academic self-efficacy	-.183**	.189**	-.211**

Note. ** $p < .001$

Lastly, it was examined whether psychological distress and academic self-efficacy mediated the relationship between the three factors of school climate and mental wellbeing (see Table 4; Figure 2). Bootstrap analyses of the mediating effect revealed that the relationship between the deviant behavior and mental well-being was mediated by psychological distress ($B = -.364$, $SE = .04$, 95%CI = -.447 – -.290) and academic self-efficacy ($B = -.191$, $SE = .03$,

95%CI = -.261 − -.128). Bootstrapping analyses also indicated significant indirect effects of school wellbeing on mental wellbeing via psychological distress (B = .315, SE = .04, 95%CI = .238 − .396) and academic self-efficacy (B = .208, SE = .03, 95%CI = .139 − .279). Lastly, indirect effects of subjective unsafety on mental wellbeing through psychological distress (B = -.426, SE = .04, 95%CI = -.522 − -.339) and academic self-efficacy (B = -.243, SE = .04, 95%CI = -.319 − -.172) were also significant.

Figure 2
Mediational Model Results
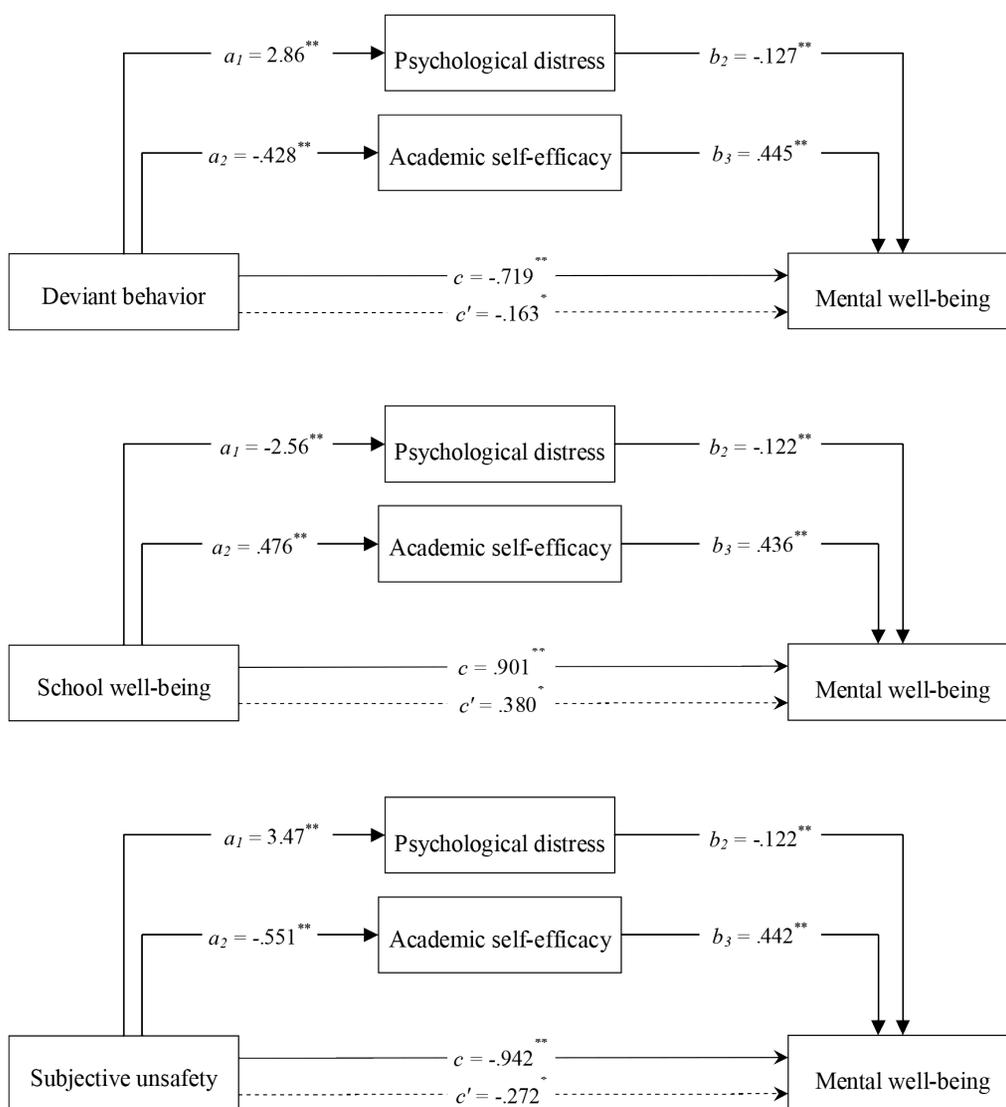
Table 4

SCQ-Azerbaijani, Psychological Distress, Academic Self-Efficacy, and Mental Wellbeing

Path	Estimate	SE	Lower 95% CI	Upper 95% CI
DB → Psychological distress → MW	-.364	.04	-.447	-.290
DB → Academic self-efficacy → MW	-.191	.03	-.261	-.128
SW → Psychological distress → MW	.315	.04	.238	.396
SW → Academic self-efficacy → MW	.208	.03	.139	.279
SU → Psychological distress → MW	-.426	.04	-.522	-.339
SU → Academic self-efficacy → MW	-.243	.03	-.319	-.172

Discussion

School climate has an important place because of teaching social rules and how to live in society together with academic education at school. A positive school climate reflects positively on adolescents in many different ways. Therefore, the aim of this research was to evaluate the psychometric properties of the SCQ in the sample of Azerbaijan and to examine the relationships between school climate and psychological distress, academic self-efficacy, and mental wellbeing. By adapting this scale to Azerbaijani culture, a measurement tool for assessing school climate in research has been introduced to the literature.

In this study, the structure validity of the SCQ was tested by making a confirmatory factor analysis. The analysis results confirmed the 22-item and three-dimensional structure of the scale, as indicated by the fit index values. This finding demonstrated that the scale adapted to Azerbaijani culture and the original scale are consistent (Bochaver et al., 2022). On the other hand, the reliability coefficients were found to be slightly low. One of the reasons for this is that the scale's answer is "yes" and "no". Furthermore, Bochaver et al. (2022) stated in their study that the reliability coefficient of the scale was low.

Another finding of this study is the significant relationship between school climate and psychological distress, academic self-efficacy, and mental wellbeing. The findings revealed that school climate was negatively related to psychological distress and positively related to academic self-efficacy and mental wellbeing. Studies in the literature also support the finding obtained in this study. For instance, in the study conducted by Grayson and Alvarez (2008), it was reported that there is a significant correlation between school climate and psychological distress. Similarly, in the study of Saeki et al. (2018), it was revealed that school climate is a variable that predicts psychological distress. When the relationship between school climate and mental wellbeing is examined, it can be said that the findings of this research are in parallel with the studies in the literature (e.g., Borkar, 2016; Lester & Cross, 2015). These studies have shown that school climate is a variable that predicts the mental wellbeing of individuals. Furthermore, research results have indicated a correlation between school climate and academic self-efficacy (e.g., Gündoğan & Koçak, 2017; Zhang et al., 2022). In addition, in the study conducted by Zysberg and Schwabsky (2021), it was reported that school climate was a determinant of academic self-efficacy.

As a result, the SCQ can be used as a valid and reliable measurement tool in the Azerbaijani population. The adaptation of a scale to Azerbaijani culture for assessing school climate, an important factor in the development, success, and well-being of adolescents, enhances the significance of this study. Furthermore, given that future research will explore

the relationship between school climate and various other variables, this measurement tool is expected to contribute to the field of psychology and psychological counseling, while also expanding research opportunities.

Conclusions and Implications

The results indicate that the School Climate Questionnaire, consisting of 22 items and three sub-dimensions, is a valid and reliable measurement tool for assessing school climate in Azerbaijan. In addition, significant correlations were observed between school climate and psychological distress, academic self-efficacy, and mental well-being. Furthermore, mediation models were tested, revealing that psychological distress mediated the relationship between the sub-dimensions of school climate and mental well-being among adolescents. Moreover, academic self-efficacy was also found to mediate this relationship. These results highlight the importance of school climate in shaping psychological outcomes among Azerbaijani adolescents.

Based on the aforementioned results, several implications can be drawn. Firstly, the availability of a valid and reliable measurement tool, such as the School Climate Questionnaire, allows researchers and practitioners to assess and monitor the school climate effectively in Azerbaijan. This can aid in identifying areas of improvement and implementing targeted interventions to enhance the overall school environment. Secondly, the significant relationships between school climate and psychological distress, academic self-efficacy, and mental well-being underscore the importance of fostering a positive and supportive school climate. Schools should prioritize creating an environment that promotes psychological well-being and academic success among students. This may involve implementing strategies such as promoting positive peer relationships, providing adequate support systems, and addressing any factors that contribute to distress or hinder academic self-efficacy. Furthermore, the findings on mediation suggest that addressing psychological distress and enhancing academic self-efficacy can serve as pathways to improving mental well-being within the context of school climate. Interventions targeting these factors may have positive cascading effects on students' overall well-being and academic outcomes.

Funding

Conflict of Interest

No conflict of interest exists for this manuscript for any of the authors.

Data Availability Statement

The datasets generated during and analyzed during the current study are available from the corresponding author on reasonable request.

Ethical Approval

The study was performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki and its following updates. The Ethics Council of the Psychology Scientific Research Institute granted ethical permission (ID = T-234).

Consent to Participate

Informed consent was obtained from all the individual participants that were included in the study.

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