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School climate and school satisfaction among high school adolescents

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Abstract

This study investigates relationships between school climate and students' satisfaction with school. A total of 504 students enrolled in public high schools participated in the study and answered the Multidimensional Life Satisfaction Scale and the Delaware School Climate Survey. A multiple regression analyzes, using the forward method, identified a model with three domains of school climate that contributed to the explanation of 30% of the variation in the school satisfaction ($p < 0.001$): teacher-student relationships ($\beta = 0.28$), fairness of rules and clarity of expectations ($\beta = 0.21$) and student-student relationship ($\beta = 0.17$). The results suggest that the relationships, as well as the structure offered within the school environment, are essential to the explanation of school satisfaction. In addition, the results indicate that investments in improving students' school satisfaction can be promoted with improvement in the school climate, with emphasis on the teacher-student relationship.

Keywords: school satisfaction; school climate; positive development; adolescence; teacher-student relationship.

CLIMA ESCOLAR E SATISFAÇÃO COM A ESCOLA ENTRE ADOLESCENTES DE ENSINO MÉDIO

Resumo

Este estudo investigou relações entre clima escolar e satisfação de adolescentes com a escola, a partir de uma amostra de 504 estudantes matriculados no ensino médio de escolas públicas. Os estudantes responderam à Escala Multidimensional de Satisfação de Vida para Adolescentes e à Delaware School Climate Survey. Uma análise de regressão múltipla, utilizando-se o método *forward*, identificou um modelo com três domínios do clima escolar que contribuíram para a explicação de 30% da variação da satisfação com a escola ($p < 0,001$): relacionamento professor-estudante ($\beta = 0,28$), justeza das regras e clareza de expectativas ($\beta = 0,21$) e relacionamento estudante-estudante ($\beta = 0,17$). Os resultados sugerem que os relacionamentos, assim como a estrutura oferecida no ambiente escolar, são fundamentais para a explicação da satisfação com a escola. Além disso, os resultados indicam que a melhoria da satisfação dos estudantes com a escola pode ocorrer por meio de aspectos relacionados ao clima escolar, com destaque para a relação professor-estudante.

Palavras-chave: satisfação escolar; clima escolar; desenvolvimento positivo; adolescência; relação professor-estudante.

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CLIMA ESCOLAR Y SATISFACCIÓN CON LA ESCUELA ENTRE ADOLESCENTES DE ENSEÑANZA MEDIO

Resumen

Este estudio investigó relaciones entre clima escolar y satisfacción de estudiantes con la escuela, a partir de una muestra de 504 secundaristas matriculados en escuelas públicas. Respondieron a Escala Multidimensional de Satisfacción de Vida y Delaware School Climate Survey. Un análisis de regresión múltiple, utilizando el método forward, identificó un modelo con tres dominios del clima escolar que contribuyeron a la explicación del 30% de la variación de la satisfacción con la escuela ($p < 0,001$): Relación Profesor-Estudiante ($\beta = 0,28$), Justeza de las Reglas y Claridad de Expectativas ($\beta = 0,21$) y Relación Estudiante-Estudiante ($\beta = 0,17$). Los resultados sugieren que las relaciones, así como la estructura ofrecida en el ambiente escolar, son fundamentales para explicación de la satisfacción con la escuela. Además, los resultados indican que la mejora de la satisfacción de los estudiantes con la escuela puede ocurrir por medio de aspectos relacionados al clima escolar, con destaque para la relación Profesor-Estudiante.

Palabras clave: satisfacción escolar; clima escolar; desarrollo positivo; adolescencia; relación profesor-estudiante.

1. Introduction

The study of life satisfaction is included in a perspective that emphasizes healthy and positive aspects of development at different stages of the life cycle. Life satisfaction has been related to the individual's cognitive assessment of his/her life, in different domains (Segabinazi, Giacomoni, Dias, Teixeira, & Moraes, 2010). The specific life satisfaction domains in adolescents include satisfaction with the school, family, and leisure. In Brazil, in general, young people present good levels of life satisfaction (Segabinazi et al., 2010), which corroborates the findings of the international literature (Huebner & McCullough, 2000; Huebner, Gilman, Reschly, & Hall, 2009). However, among the specific domains of life satisfaction for adolescents, the school has presented the lowest means in national and international studies (Huebner & McCullough, 2000; Segabinazi et al., 2010). Low satisfaction with school experiences has generated questions related to the schools' role in the prevention and promotion of adolescent health. As young people spend most of their time at school, this context should be considered a key scenario for interventions designed to promote students' well-being.

School satisfaction is related to the students' assessment of how they feel about that environment, considering the importance of the school, the school

community and the interpersonal relationships experienced in this context (Huebner & McCullough, 2000). This measure, however, is complex and non-linear, since the student's perception of the school experience does not only derive from events and feelings related to the school itself. Other life experiences related to family, friends, leisure, and physical and mental health may affect this judgment. Studies have demonstrated the importance of contextual and individual variables (self-perceptions, individual resources) for a better comprehension of the satisfaction of students with their school experience. Among the existing empirical evidence, some of the key factors that correlate with school satisfaction are age and academic performance (Alves, Zappe, Patias, & Dell'Aglio, 2015), feelings of self-esteem (Karatzias, Power, Flemming, Lennan, & Swanson, 2002), support of teachers and peers, general and academic self-efficacy (Suldo, Bateman, & Gelley, 2014), expectations for the future (Alves et al., 2015) and school climate (Suldo, Thalji-Raitano, Gelley, & Hoy, 2013). In addition to these factors, in a longitudinal study, students who reported more positive experiences at school also reported higher levels of mental and physical health and were less likely to engage in risk behaviors, such as alcohol abuse (Huebner et al., 2009).

From this positive perspective, the evaluation of the schooling process (school results) should not only focus on variables related to academic success. It is important to consider more comprehensive outcomes, including non-academic results, such as students' perceptions regarding the quality of their school settings, as well as their psychological well-being (Huebner et al., 2009). Studies have shown that school experience and levels of satisfaction with the school influence overall satisfaction with life and well-being (Suldo et al., 2014). Therefore, it is important to seek to comprehend which factors promote school satisfaction for students.

The school climate has been associated with important school results. Growing evidence suggests that the school climate can affect students' learning levels and academic performance. According to a study by the Organization of Economic Cooperation and Development (OECD, 2017), school climate was the element that most explained the variation in performance results among the schools analyzed. Also, the environment or the school climate that students' experience can predict and promote their satisfaction with life and the school (Suldo et al., 2013). Almost all definitions of school climate include references to the importance of positive interpersonal relationships. For example, Aldridge et al. (2016) defined school climate as the quality of the interactions with the school community, which influences the

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students' cognitive, social, and psychological development. Other definitions include the importance of students and staff feeling psychologically and physically safe in this environment (Cohen, Mccabe, & Michelli, 2009).

Although not a new concept, interest in studying the school climate has increased not only among researchers in the area but also among educators who aim to construct public policies based on the aspects of prevention of unwanted behaviors and the promotion of a healthy school environment (Bear et al., 2015), however, most studies and interventions based on the school climate construct, as well as on school satisfaction, have been conducted in the United States and Canada and little is known about these concepts in other contexts, including the Brazilian reality (Holst, Weber, Bear, & Lisboa, 2016). In a literature review conducted by Holst et al. (2016), only one study was found in the Brazilian context, which used a school climate measure, however, presented no evidence of the adaptation of the instrument used (originally constructed for the Canadian context) or of the validity and reliability of its results.

In the present study, the measure of school climate is based on the perspective of Stockard and Mayberry (1992) and on theories that address the form of authoritative discipline (Baumrind & Larzelere, 2010). Both theories share the view that the quality of the school climate and the discipline among students are composed of two dimensions: support and structure. Support refers to the degree to which adults and peers are responsive, that is, they demonstrate acceptance, care, and attention regarding the adolescent's emotional needs; structure, in turn, indicates the level at which the school has clarity of expectations, clarity of rules, monitoring, and supervision of the behavior, for example.

Traditionally, several studies on the school context have emphasized the identification of the psychological deficits or behavioral problems of adolescents, rather than their strengths and abilities (Clonan, Chafouleas, Mcdougal, & Riley-Tillman, 2003). This emphasis may lead researchers, professionals, and policymakers to focus on the "limitations" of young people rather than seeking to promote their potential in the different contexts in which they are inserted. From a perspective that considers markers favorable to positive development (Clonan et al., 2003; Dawood, 2013), it was sought to highlight aspects that promote health and well-being in student life rather than considering only problems and deficits. In the school environment, this implies attention to models of prevention and health promotion that provide students with socially and psychologically healthy environments.

In this sense, considering the school as a privileged space for the healthy development of adolescents, determinants and correlates of adolescent satisfaction in this important environment were sought. Thus, the present study aimed to investigate school satisfaction in high school students, considering socio-demographic variables (sex, school year, type of school, repetition, work situation), and to identify which dimensions of the school climate best explain the satisfaction with the school.

2. Method

2.1 Participants

A total of 504 adolescents participated in this study, 58.3% female and 41.7% male, aged between 14 and 19 years (M = 15.88; SD = 0.88). The participants were enrolled in public schools in the city of Sobral, Ceará state, from the 1st to the 3rd year of high school, with 58.5% of the sample from professional schools and 41.5% from regular schools.

Of the total sample that completed the study, ten participants were excluded because they answered "I disagree" or "I strongly disagree" with the validity item in the study: "I'm telling the truth in this questionnaire." No other exclusion criteria were used. Thus, the final sample consisted of 494 students enrolled in the High School grades, 1st year (n = 238; mean age = 15.27; SD = 0.62), 2nd year (n = 184; mean age = 16.15; SD = 0.56), and 3rd year (n = 72; mean age = 17.15; SD = 0.46). Of the participants, 10.4% worked, and 8.2% had already had to repeat a grade of schooling. The sample was selected by convenience, and six schools from different regions of the city of Sobral were included.

2.2 Instruments

Sociodemographic Questionnaire: investigates the biosociodemographic characteristics of each participant (sex, grade, type of school, repetition, work situation).

Multidimensional Life Satisfaction Scale for Adolescents (*Escala Multidimensional de Satisfação de Vida para Adolescentes – EMSV*) (Segabinazi et al., 2010): the scale is composed of 52 items divided into seven components – family, friendship, self, school, compared self, non-violence, and self-efficacy. For the present study, only the school subscale was used, which includes items that describe the importance of the school, school environment, interpersonal relationships in that space, and the level of satisfaction with the environment, such as "I feel good in my school," "my teachers are nice to me," among others. The items are answered on a Likert-type

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scale with five response options, ranging from 1 (not at all) to 5 (very much). In the study by Segabinazi et al. (2010) adequate internal consistency was found for the scale (α = 0.93), as well as for the school subscale (α = 0.85).

Delaware School Climate Survey – Student Version (Holst et al., 2016): the instrument is composed of 35 items (excluding two validity items) distributed in six subscales: teacher-student relationship; student-student relationship, the fairness of rules and clarity of expectations, safety at school, bullying, and student engagement. Each subscale is composed of 4 to 6 items, answered on a Likert-type scale with four response options, ranging from 1 (strongly disagree) to 4 (strongly agree). The study of the adaptation of the instrument to the Brazilian reality showed good internal consistency, with Cronbach's alpha of 0.86 (Bear et al., 2015).

2.3 Procedures

The study was approved by the Research Ethics Committee of the Institute of Psychology of Federal University of Rio Grande do Sul (UFRGS), under authorization n. 1.588.302. Contact was made with the State Department of Education of Ceará, which authorized the data collection in the schools. After this, the research project was presented in the participating schools, and the consent form was signed by each school. Six public schools, in different regions of the city of Sobral, were selected by convenience. The consent form was delivered to the parents or caregivers and the terms of the agreement to the adolescents who agreed to participate. The instruments were applied collectively, in the auditoriums of the schools or the classroom of the participants, at the convenience of the school.

Using the SPSS software (version 21), Student's t-tests and analysis of variance (Anova) were used to compare the means of school satisfaction among the different subgroups of the sample (sex, school year, type of school, work activity, and repetition). After this analysis, the effect size of the differences between groups was calculated. The correlations between the variables (Pearson's) were also analyzed. Subsequently, stepwise (forward) regression models were tested, having school climate as the explanatory variables and school satisfaction as the outcome variable.

3. Results

The means and standard deviations for the variables of interest are presented in Table 3.1.

Table 3.1. Descriptive statistics of the school satisfaction scores and school climate dimensions.

Variables	*n*	*M*	*SD*
School satisfaction	493	23.21	4.15
Teacher-student relationship	494	15.71	2.34
Student-student relationship	494	11.24	2.34
Fairness of rules and clarity	494	18.64	3.12
School safety	494	12.47	2.49
Bullying	484	11.90	2.95
Cognitive engagement	494	11.01	2.55

Next, t-tests were performed for the independent samples or Anovas to compare the means in the school satisfaction scores among the subgroups of the sample. There was no statistically significant difference in school satisfaction scores between males (M = 23.17, SD = 4.52) and females (M = 23.16, SD = 3.87), $t(386.94) = 0.25$, $p = 0.80$; nor between those that worked (M = 24.18, SD = 4.16) and those that did not work (M = 23.03, SD = 4.14), $t(488.00) = 1.49$, $p = 0.13$. However, there was a statistically significant difference in the mean school satisfaction scores between those who had repeated a year (M = 21.92, SD = 4.34) and those who had not repeated one (M = 23.32, SD = 4.13), $t(490.00) = 2.05$, $p = 0.04$, $d = 0.33$; and among those who studied in a regular school (M = 22.46, SD = 4.39) and those who studied in a professional school (M = 23.65, SD = 3.92), $t(387.38) = 3.19$, $p = 0.002$, $d = 0.28$. Students who had not repeated a year and who studied in professional schools obtained higher means of school satisfaction. The effect size (d) for the difference between the means of school satisfaction was small for the repetition and type of school groups. Also, one Anova indicated differences in school satisfaction among the students in the different high school grades, $F(2, 490) = 5.35$, $p = 0.005$. A Bonferroni post-hoc test showed that this difference occurred between the 1st year students (M = 23.33, SD = 3.82) and those of the 3rd year (M = 21.79, SD = 5.36), $p = 0.017$, $d = 0.33$ and between the students of the 2nd year (M = 23.66, SD = 3.91) and those of the 3rd year (M = 21.79, SD = 5.36) $p = 0.004$, $d = 0.40$. The students who attended the first year and the second year had higher means of satisfaction with the school than those who attended the third year. The effect size (d) for the differences between the means of

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school satisfaction was small between the 1st and 3rd-year students and medium between the 2nd and 3rd-year students.

From the Pearson's correlation analysis (shown in Table 3.2), it was observed that all dimensions of the school climate presented a statistically significant correlation with the school satisfaction variable, which allowed them to be included in the subsequent regression analysis.

Table 3.2. Correlations between the dimensions of school climate and school satisfaction.

Variables	1	2	3	4	5	6
1. School satisfaction	-					
2. Teacher-student relationship	0.49*	-				
3. Student-student relationship	0.43*	0.56*	-			
4. Fairness of Rules and Clarity	0.45*	0.59*	0.53*	-		
5. School safety	0.39*	0.52*	0.49*	0.60*	-	
6. Bullying	0.27*	0.32*	0.51*	0.37*	0.45*	-
7. Engagement	0.35*	0.50*	0.63*	0.57*	0.56*	0.50*

* $p \leq 0.01$

In order to investigate which of the dimensions of school climate best explained the variance in school satisfaction scores, a multiple linear regression was performed using the forward method for the entry of variables into the model. This method of the variable input is used for situations in which it is sought to analyze the data in an exploratory way (Field, 2009). According to this method, the variable that enters the first step of the regression is the one that best predicts the outcome variable, since it presents a greater simple correlation with it. In the successive stages, each predictor is incorporated, starting from the one that has the highest coefficient of semi-partial correlation with the outcome variable and that increases in a statistically significant way the ability of the model to predict the output variable. Variables that do not meet this requirement are discarded from the model.

To perform this regression analysis, the six variables that compose the school climate were selected as possible predictors of school satisfaction. The data of this analysis are presented in Table 3.3.

Table 3.3. Multiple regression – school satisfaction.

School satisfaction	B	SE B	B Standardized	R^2 Adjusted	ΔR^2
Step 1				0.25*	
Teacher-student relationship	0.88	0.07	0.50*		
Step 2				0.29*	0.04*
Teacher-student relationship	0.61	0.08	0.34*		
Fairness of rules and clarity	0.35	0.06	0.26*		
Step 3				0.30*	0.02*
Teacher-student relationship	0.49	0.09	0.28*		
Fairness of rules and clarity	0.28	0.07	0.21*		
Student-student relationship	0.30	0.08	0.17*		

* $p \leq 0.01$

In Step 1, the teacher-student relationship variable remained in the model, with $F(1, 481) = 168.22$, $p < 0.001$, explaining 25% of the school climate variation. In Step 2, the teacher-student relationship remained, and the fairness of rules and clarity of expectations variables remained, with $F(2, 480) = 98.53$, $p < 0.001$, explaining 29% of the variation. Finally, in Step 3, the model included the teacher-student relationship, the fairness of rules and clarity of expectations, and student-student relationship variables, with $F(3, 479) = 71.37$, $p < 0.001$. Although all the models were statistically significant, the model presented in Step 3 explained a higher percentage of satisfaction with the school (30% of the variation). It can, however, be observed that the teacher-student relationship was the most important variable to explain the school climate since the other variables that were significant in Step 3 did not add much to the explanatory power of the model. The other school climate variables did not enter the final model because they did not contribute in a statistically significant way to the ability of the model to predict school satisfaction, after inclusion of the aforementioned variables.

4. Discussion

The present study aimed to investigate school satisfaction in high school students and to identify which dimensions of the school climate best explained the students' satisfaction with the school. Regarding the sociodemographic char-

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acteristics investigated in the study, no significant difference was observed in the levels of school satisfaction between males and females. Other studies (Huebner et al., 2009, Zullig, Huebner, & Patton, 2011) also found no variation according to sex for levels of satisfaction with the school. There was also no significant difference between the levels of school satisfaction and the students' work activity. One hypothesis is that the relationships that occur within the school environment may be more determinant for the evaluation of experiences in this context (Suldo et al., 2014). The students of the professional schools presented better levels of satisfaction with the school. Concerning the regular schools, the professional schools generally have lower rates of repetition, drop-out and age/grade distortion and higher marks in elementary education (Inep, 2015). These factors are related to better levels of satisfaction with the school. However, a more in-depth assessment of the pedagogical practices and interpersonal relationships that are established in the different schools studied are necessary to understand these differences.

Lower levels of satisfaction with the school were observed among those students who had repeated at least one year during their schooling. This finding suggests that repetition, when used as a strategy to favor appropriate learning related to a stage of schooling, should be used with adequate support from the school, since it may have social and psychological consequences that affect the positive relationship of the student with that environment. There was a significant difference in the levels of school satisfaction among the school grades, with the 1st and 2nd-year students presenting higher satisfaction with the school compared to the 3rd-year students. This result is consistent with previous findings indicating decreased satisfaction along the school route (Karatzias et al., 2002). Possible explanations for this decline in school satisfaction may stem from increased academic demands or even reduced individual attention by teachers, as well as concerns for the future (Madjar & Cohen-Malayev, 2016).

The joint assessment of the school climate and school satisfaction allowed the determination of which school climate variables (and to what extent) are significantly related to the satisfaction of the students with the school. This study confirmed previous studies that suggested that there are differences in perceptions of the school climate (e.g., teacher-student relationships, peer relationships) between students that like and dislike their school experience (DeSantis, Huebner, & Suldo, 2006; Huebner et al., 2009).

The results of this study indicate which dimensions of the school climate have potentially greater chances of increasing students' school satisfaction and improving the school experience. The results of the multiple regression analyses indicate that the school climate dimensions that best explained the variance in school satisfaction scores were the teacher-student relationship, the fairness of rules and clarity of expectations, and student-student relationship. In contrast, the school safety, bullying, and engagement dimensions were not significant in explaining the variation in school satisfaction among the study participants. Although these dimensions of school climate are also relevant because they correlate positively with school satisfaction, they did not add explanatory power to the model found after the previous variables were incorporated.

The results highlight the importance of interpersonal relationships (teachers and peers) in the school for the satisfaction of students with this context. Furthermore, the definitions of school climate presented in the literature emphasize the importance of good interpersonal relationships as a central aspect for the perception of a good school climate by students (Bear et al., 2015; Cohen et al., 2009). These results are in line with previous studies conducted with North American and Japanese students. Ito and Smith (2006) demonstrated that a positive school climate, in which students feel respected, encouraged, and supported in the school environment by their teachers and peers, was the best predictor of school satisfaction. In the present study, the quality of the teacher-student relationship was highlighted in explaining the variation in the students' school satisfaction scores. That is, the students that felt more satisfied in their schools perceived their teachers as caring, respectful, and able to provide support when needed. In the school context, students who perceive their teachers and peers as sources of support are more likely to present better academic performance and greater engagement in school activities (OECD, 2017).

About the fairness of rules and the clarity of expectations, Cohen et al. (2009) highlighted the importance of students feeling emotionally and physically secure as a central aspect of the school climate. In this study, the fairness of rules and clarity of expectations, which, according to the authors, are aspects that give students emotional security, added more explanation to the students' school satisfaction than physical security, represented by the school safety subscale. Previous studies have also found that the perception of school as an orderly environment, in which the students follow the rules and know what is expected of them in that context, is related to better levels of students' school satisfaction (Suldo et al., 2013).

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Although the bullying, school safety, and school engagement variables are generally considered relevant in the school context, they did not add explanatory power to the model found. In this study, the subscale used to measure school engagement includes items that refer only to behavioral and cognitive engagement (e.g., paying attention in class, handing in homework). Emotional engagement (e.g., liking the school environment, belonging, and identification with it) is likely to be more related to school satisfaction, however, was not included in the instrument used.

5. Conclusions

In this study, both the support dimension (teacher-student relationship and student-student relationship) and the structure dimension (fairness and clarity of expectations) were relevant for the explanation of student satisfaction with the school. This result is in agreement with studies that form the theoretical base of the school climate instrument (Baumrind & Larzelere, 2010; Stockard & Mayberry, 1992). However, considering that the model found in this study explained only 30% of the school satisfaction variance, it is important that future studies investigate which additional variables could more fully explain the school satisfaction of students in the Brazilian context, including aspects related to emotional engagement.

Concerning the limitations of the present study, it should be noted that the sampling method used does not allow the generalization of the results, as the schools and students were chosen by convenience, in a city in the state of Ceará. Also, the study focused entirely on students' perceptions, not considering other sources of information such as teachers, governing staff, and the family of the participants. Further research needs to be conducted with other populations in different regions of the country so that the results can be representative or generalizable. Future studies should incorporate different evidence sources, which would also allow the triangulation of data. Also, longitudinal studies are also recommended to examine these variables over time and establish causal relationships.

Despite these limitations, this study has implications for school professionals. The investigation of the students' satisfaction with school and the school climate allows the analysis of patterns of social interaction present in the school context that impact on the daily life of those involved in the pedagogical process, fundamental aspects in the educational dynamics. In addition, the present study highlights the centrality of the teacher-student relationship, the fairness of rules

and clarity of expectations, and the student-student relationship as key dimensions that can guide intervention proposals with the purpose of promoting better student satisfaction with the school and increased motivation, academic results, general well-being, and self-esteem of the students, as emphasized in the literature (OECD, 2017). Finally, this study indicates the benefits of including, in more comprehensive assessments of the students' school experiences, measures related to the subjects' perceptions of the school environment (school climate), and measures of individual differences (school satisfaction), as well as highlighting the importance of interpersonal relationships in this context.

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