School climate and physical activity in primary school students: influence of sociodemographic and school-related factors

Clima escolar y actividad física en estudiantes de educación primaria: influencia de factores sociodemográficos y escolares

Authors

Jacqueline Valdebenito Villalobos [1]
Igor Cigarroa [2]
Jorge Rojas-Bravo [1]
Carolina Muñoz Pérez [1]
María Aurora Gutiérrez Echavarria [1]
Andrea Tapia Figueroa [1]
Alejandra Robles-Campos [1]
Elizabeth Segura Inostroza [1]
Rubén Abello-Riquelme [1]
Ana María Arias Díaz [1]
Rafael Zapata Lamana [3, 1]

[1] Universidad de Concepción (Chile)
[2] Universidad Católica Silva Henríquez (Chile)
[3] Universidad Santo Tomás (Chile)

Corresponding author:
Rafael Zapata Lamana
rafaelzapata@udec.cl

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Abstract

Introduction: School climate was identified as a key factor in students' well-being and educational development, particularly during primary education, where relational processes and participation contexts play a central role.
Objective: this study aimed to characterize primary school students' perceptions of school climate and to examine their associations with socio-school characteristics and indicators of participation, particularly extracurricular sports practice.
Methodology: a quantitative, descriptive, and cross-sectional design was used. the sample consisted of 283 primary school students from urban schools in the Biobío region, Chile. data were collected using the school climate and coexistence scale and a questionnaire on sociodemographic and physical activity-related variables. descriptive statistics and one-way analysis of variance (anova) were performed.
Results: the findings showed generally positive perceptions of school climate, with higher scores in the teacher–student relationship dimension. extracurricular sports participation was significantly associated with more favorable perceptions of teacher relationships, while other physical activity indicators showed limited or non-significant associations.
Discussion: the results support a relational perspective of school climate, highlighting the relevance of structured participation contexts in strengthening teacher–student relationships. however, associations were more limited than expected.
Conclusions: school climate perceptions in primary education are primarily shaped by relational dimensions, particularly teacher–student interactions. extracurricular sports participation emerges as a relevant, though selective, factor.

Keywords

Physical activity; primary education; school climate; teacher–student relationships.

Resumen

Introducción: el clima escolar fue identificado como un factor clave en el bienestar y el desarrollo educativo de los estudiantes, particularmente durante la educación primaria, donde los procesos relacionales y los contextos de participación desempeñan un papel central.
Objetivo: este estudio tuvo como objetivo caracterizar las percepciones de los estudiantes de educación primaria sobre el clima escolar y examinar sus asociaciones con características socioescolares e indicadores de participación, particularmente la práctica deportiva extracurricular.
Metodología: se utilizó un diseño cuantitativo, descriptivo y transversal. la muestra estuvo compuesta por 283 estudiantes de educación primaria de escuelas urbanas de la región del Biobío, Chile. los datos fueron recolectados mediante la escala de clima y convivencia escolar y un cuestionario sobre variables sociodemográficas y relacionadas con la actividad física. se realizaron análisis estadísticos descriptivos y pruebas de análisis de varianza de una vía (anova).
Resultados: los hallazgos mostraron percepciones generalmente positivas del clima escolar, con puntuaciones más altas en la dimensión de relación profesor–estudiante. la participación en deportes extracurriculares se asoció significativamente con percepciones más favorables de la relación con los docentes, mientras que otros indicadores de actividad física mostraron asociaciones limitadas o no significativas.
Discusión: los resultados respaldan una perspectiva relacional del clima escolar, destacando la relevancia de los contextos de participación estructurados en el fortalecimiento de las relaciones profesor–estudiante. sin embargo, las asociaciones fueron más limitadas de lo esperado.
Conclusiones: las percepciones del clima escolar en educación primaria están determinadas principalmente por dimensiones relacionales, en particular las interacciones entre docentes y estudiantes. la participación en deportes extracurriculares emerge como un factor relevante, aunque selectivo.

Palabras clave

Actividad física; clima escolar; educación primaria; relaciones profesor-estudiante.

Introduction

The school climate has been widely studied due to its influence on students' emotional well-being, coexistence, and academic achievement. From a multidimensional perspective, it integrates structural, relational, and affective aspects that shape students' everyday experiences within school, including motivational and behavioral components associated with participation in educational contexts (Cohen et al., 2009; Thapa et al., 2013). This concept has evolved from a perspective focused on norms and institutional order to a more complex understanding that recognizes the role of students' perceptions, the quality of interpersonal relationships, and educational inclusion as key elements for learning and democratic participation within schools (Thapa et al., 2013; Wang & Degol, 2015).

Various studies have shown that a positive school climate acts as a protective factor against emotional, behavioral, and social challenges. Lester and Cross (2015) indicate that environments promoting safety, teacher support, and a sense of belonging reduce stress indicators and improve school adaptation. These effects are especially relevant in primary education, a stage in which students consolidate socio-emotional skills and interaction patterns that influence their future trajectories.

In the Chilean context, the relevance of school climate has increased following the implementation of policies aimed at strengthening coexistence and well-being. The National Policy on Educational Coexistence 2024–2030 emphasizes that schools must provide safe, participatory, and inclusive environments that integrate socio-emotional learning as a cornerstone in building democratic educational communities (Ministerio de Educación [Chile], 2024). Additionally, socio-emotional learning guidelines (Ministerio de Educación [Chile], 2020) highlight the need to incorporate systematic strategies for emotional regulation, mutual respect, and peaceful conflict resolution, particularly during the early years of schooling.

Within the specific dimensions of school climate, teacher–student relationships have been identified as key components. Wang and Degol (2015) emphasize that teacher support, emotional closeness, and positive feedback foster academic motivation and school engagement. In addition, previous research in physical education contexts has highlighted the role of school climate in promoting coexistence and positive interactions among students (López-Sánchez et al., 2023). These relationships are also linked to lower levels of aggression and greater emotional adjustment, positioning them as central elements for holistic development (Lester & Cross, 2015; Wang & Degol, 2015). In turn, peer relationships influence perceptions of belonging, emotional safety, and social integration, and are crucial in shaping the daily school climate (Thapa et al., 2013).

Educational inclusion is another important factor in this discussion. The presence of students with special educational needs in regular classrooms presents challenges for building inclusive environments that ensure participation, pedagogical support, and recognition. Although the School Integration Program (Programa de Integración Escolar, PIE) seeks to address these needs, recent research suggests that its effectiveness depends on both the design of support and how students and their peers perceive treatment (Ministerio de Educación [Chile], 2020). Evidence indicates that perceptions of inclusion can vary significantly depending on students' direct experiences, underscoring the importance of studying these phenomena from their perspectives.

Conceptually, the present study is grounded in a multidimensional understanding of school climate, in which relational dimensions (teacher–student relationships and peer relationships) and perceptions of safety and the physical environment constitute core components that may be associated with participation behaviors (Thapa et al., 2013). Within this framework, extracurricular sports practice and school attendance are considered proxy indicators of student engagement and participation. Without assuming causal relationships, this study explores the extent to which these variables are associated with different dimensions of school climate in primary education.

In addition to its socio-emotional and relational components, school climate is increasingly understood as a construct influenced by students' opportunities for movement, physical activity, and participation in sports-based experiences. A growing body of research shows that physical activity, both within and outside the school day, contributes to essential psychosocial processes such as motivation, emotional regulation, cooperation, and the development of positive relationships with adults and

peers. These processes are particularly relevant in school settings, where structured and socially mediated activities can reinforce students' sense of belonging and engagement with teachers and classmates (Granero-Gallegos et al., 2014; Wilhelmsen et al., 2019; Long et al., 2020; Gómez-López et al., 2022). In this regard, recent studies have shown that sedentary behaviors are negatively associated with school climate, reinforcing the importance of active participation contexts (Yáñez-Sepúlveda et al., 2024).

These mechanisms can indirectly strengthen school climate by fostering students' sense of belonging, enhancing teacher–student communication, and reducing stress indicators. In this context, examining extracurricular sports participation becomes particularly relevant for understanding how participation contexts relate to students' perceptions of school climate. The present study uses baseline data from the "Active Classes Chile" project (Zapata-Lamana et al., 2024), which integrates video-guided movement experiences into classroom routines. Although the current analysis relies only on pre-intervention measurements, the broader context of the project underscores the importance of examining whether participation in physical activity—particularly extracurricular sports—is associated with students' perceptions of school climate.

Despite the existing evidence on school climate and physical activity, there is limited research simultaneously examining relational dimensions of school climate and their association with participation indicators among primary school students in the Chilean context. In this regard, the present study seeks to contribute to filling this gap by providing empirical evidence through a descriptive and correlational approach.

Understanding how participation contexts such as physical activity relate to students' perceptions of school climate may provide valuable insights for promoting well-being and inclusive school environments. This approach is relevant because it allows for an initial diagnosis of how participation and physical activity variables relate to school climate in primary education, an aspect still scarcely documented in the Latin American literature. Furthermore, examining these associations from a relational perspective contributes to a more nuanced understanding of how participation contexts shape students' perceptions of school climate in primary education.

Method

Design

This study employed a quantitative, descriptive, and cross-sectional design aimed at characterizing primary school students' perceptions of school climate and examining differences according to sociodemographic characteristics, participation in the School Integration Program (PIE), and physical activity indicators.

The analysis was based on baseline data from the Active Classes Chile project, collected between March and September 2024. Although the original project consisted of a 12-week randomized controlled trial in which video-guided active breaks with curricular content were implemented in classrooms, the present study relied exclusively on pre-intervention measurements. This approach ensured that students' perceptions of school climate and their physical activity–related indicators (e.g., extracurricular sports participation, transportation habits, and family physical activity patterns) were not influenced by the experimental component of the intervention.

Therefore, this design enabled the examination of associations between activity-related characteristics and students' perceptions across the three assessed dimensions of school climate.

The study followed the STROBE guidelines for observational research (Cuschieri, 2019), and the original project received approval from the Ethics, Bioethics, and Biosafety Committee of the University of Concepción (CEBB 1533-2023, September 2023).

Participants

This study included 283 primary school students enrolled in urban schools in the Biobío region (145 boys [51.2%] and 138 girls [48.8%]). All participants were enrolled in regular classes during the data

collection period of the 2024 academic year (March–September 2024) and provided verbal assent, while their parents or legal guardians signed an informed consent form.

Students were grouped according to age, grade level, and educational support needs. A total of 108 students (38.2%) were between 7 and 8 years old, and 175 students (61.8%) were between 9 and 10 years old. Regarding grade level, 111 students (39.2%) were in third grade and 172 (60.8%) were in fourth grade.

Regarding educational needs, 50 students (17.7%) were identified as having permanent or temporary special educational needs, while 233 students (82.3%) did not report such conditions. Additionally, 66 students (23.3%) participated in the School Integration Program (PIE), whereas 217 (76.7%) did not receive PIE support.

School attendance schedules varied: 18 students (6.4%) attended morning classes, 98 (34.6%) attended afternoon classes, and 167 (59.0%) attended full-day schedules.

All participants met the following inclusion criteria:

a) being enrolled at the corresponding school level,

b) providing informed consent/assent, and

c) demonstrating functional reading skills to complete the instrument.

Participants with incomplete data were excluded from the analysis.

Table 1 summarizes the socio-school characteristics of the sample, describing its heterogeneity in terms of grade level, educational support needs, and attendance patterns.

Table 1. Descriptive characteristics of the sample

	Total	
Variables	Frequency	Percentage
Age category		
7-8 years	108	38.2
9-10 years	175	61.8
Sex		
Boys	145	51.2
Girls	138	48.8
School grade		
Third grade	111	39.2
Fourth grade	172	60.8
Does your child/pupil present permanent or temporary special educational needs?		
Yes	50	17.7
No	233	82.3
Participation in the School Integration Program (PIE)		
Yes	66	23.3
No	217	76.7
School attendance schedule		
Morning	18	6.4
Afternoon	98	34.6
Full-time school day	167	59.0

Note. Qualitative data were presented as absolute and percentage frequencies and percentages.
Source: Author's own elaboration, 2025.

Variables

This study included one dependent variable, one main independent variable, and a set of control variables.

The dependent variable was school climate, assessed through three dimensions: teacher–student relationships, peer relationships, and perceptions of the school environment.

The main independent variable was extracurricular sports participation. This variable was operationally defined as the student's participation in organized sports activities outside regular school hours during the previous academic year. These activities included structured programs such as sports clubs,

school teams, or community sports workshops conducted at least once per week and supervised by a coach or instructor. Informal physical activities (e.g., free play or unstructured recreation) were not classified as extracurricular sports participation.

Control variables included two groups:

1. School-related variables: age, sex, grade level, presence of special educational needs (SEN), participation in the School Integration Program (PIE), type of attendance schedule (morning, afternoon, or full-day), and presence of medical conditions requiring clinical or pharmacological treatment.
2. Physical activity–related variables: participation in extracurricular sports during the previous year, distance between home and school, usual mode of transportation, type of clothing worn for school activities, parents' weekly physical activity levels, and availability and use of nearby recreational spaces (e.g., parks, courts, or gymnasiums).

Procedure

Data collection took place during regular school hours in coordination with school leadership teams and classroom teachers. Students completed the questionnaire collectively in their classrooms under the supervision of trained researchers and school staff. Standardized administration procedures were followed to ensure uniform conditions, minimize comprehension difficulties among younger students, and reduce administration bias.

Parents or legal guardians completed a brief sociodemographic questionnaire that included school-related variables (e.g., grade level, attendance patterns, participation in the School Integration Program [PIE]) and physical activity indicators (e.g., extracurricular sports participation, transportation habits, access to recreational spaces, and parents' own physical activity levels). The school climate instrument (ECLIS) was completed directly by the students during classroom administration.

Participation was voluntary, confidentiality was ensured, and no incentives were provided. Written informed consent was obtained from parents or legal guardians, and verbal assent was obtained from students after they received an age-appropriate explanation of the study's purpose and procedures.

The study adhered to national regulations for research involving minors and was approved by the Ethics, Bioethics, and Biosafety Committee of the University of Concepción (CEBB 1533-2023).

Instrument

School climate was assessed using the School Climate and Coexistence Scale (Escala de Clima y Convivencia Escolar, ECLIS) developed by Aron et al. (2012). The use of multidimensional instruments to assess school climate has been widely supported in the literature, highlighting the importance of reliable measures that capture relational and environmental aspects of the school context (Zullig et al., 2010).

The scale, validated for the Chilean school context, consists of 55 items distributed across multiple dimensions and uses a Likert-type response format, allowing classification into low, medium, and high perception levels for each dimension. Three specific dimensions were analyzed in this study.

1. "Mis profesores" (My teachers)

This dimension (MPR) includes 30 items that evaluate students' perceptions of teacher support, respect, and emotional closeness. An example item is: "Se dan cuenta cuando tengo un problema" ("They notice when I have a problem"). Internal consistency was α = .84. Score ranges were 30–59 (low), 60–89 (medium), and 90–120 (high).

2. "Mis compañeros" (My classmates)

The MCO dimension includes 15 items assessing the quality of peer relationships. An example item is: "Mis compañeros saben cómo compartir" ("My classmates know how to share"). Internal consistency was α = .81. Score ranges were 15–29 (low), 30–44 (medium), and 45–60 (high).

3. "Los lugares de mi colegio" (Places in my school)

The LMC dimension consists of 10 items that evaluate students' perceptions of the physical school environment. An example item is: "Mi escuela es limpia y bien organizada" ("My school is clean and well organized"). Internal consistency was α = .68. Score ranges were 10–19 (low), 20–29 (medium), and 30–40 (high).

Previous validation studies of the ECLIS instrument have reported higher reliability coefficients for the full scale and its subdimensions, with values around α ≈ .91 for "My teachers", α ≈ .87 for "My classmates", and α ≈ .88 for "Places in my school". For each dimension, item scores were summed to obtain a total score, with higher values indicating more positive perceptions of school climate. Missing responses were minimal (<2%) and were handled through listwise deletion during statistical analyses.

Data Analysis with Smart PLS-SEM

Descriptive statistics were first computed to characterize students' perceptions of school climate across the three ECLIS dimensions—teacher–student relationships, peer interactions, and perceptions of the school environment. Frequency distributions and percentages were calculated for each dimension using established cut-off scores for low, medium, and high perception levels. These analyses aimed to explore group differences in school climate perceptions across socio-school and physical activity–related variables.

The assumptions of normality and homogeneity of variance were examined using the Kolmogorov–Smirnov and Levene's tests, respectively. As these assumptions were satisfactorily met, parametric analyses were conducted.

To examine differences in school climate perceptions, one-way ANOVA tests were performed across subgroups defined by school-related and physical activity–related variables. School-related variables included age, sex, grade level, school attendance frequency, participation in the School Integration Program (PIE), and the presence of special educational needs. Physical activity indicators included extracurricular sports participation, mode of transportation, distance from home to school, parental physical activity, and the availability and use of recreational spaces.

When statistically significant effects were identified, Bonferroni post hoc comparisons were performed to determine specific group differences. Given the number of statistical comparisons conducted, the Bonferroni adjustment was applied to reduce the probability of Type I error. Statistical significance was set at $p < .05$. Effect sizes (η^2) were calculated and interpreted using established thresholds: < .01 = negligible, .01–.06 = small, .06–.14 = medium, and > .14 = large.

All analyses were conducted using IBM SPSS Statistics version 25 (IBM Corp., Chicago, IL, USA).

Results

In addition to the socio-school characteristics described above, several indicators of health and physical activity were collected to contextualize students' daily habits and movement-related behaviors. Overall, 19.1% of students had medical conditions requiring clinical or pharmacological treatment.

Regarding physical activity habits, 35.9% reported participating in extracurricular sports activities, while the majority (85.2%) used passive modes of transportation to travel from school to home. Parents also showed low engagement in physical activity, with 58.8% of mothers and 52.7% of fathers reporting no regular participation.

Although 89.2% of students had access to nearby recreational spaces such as parks, courts, or gymnasiums, their use was limited: only 11.8% reported using these spaces five or more times per week, indicating that availability did not necessarily translate into frequent physical activity.

Table 2 provides a detailed overview of the physical activity–related indicators included in the study. Variables such as extracurricular sports participation, mode of transportation, parental physical activity, and access to recreational spaces were analyzed to examine whether students' movement behaviors and their surrounding activity environments were associated with differences in school climate

perceptions. This information complements the socio-school characteristics presented earlier and supports the exploration of potential links between physical activity patterns and the three ECLIS dimensions.

Table 2. Physical activity characteristics of the sample (N = 283)

	Total	
Variables	Frequency	Percentage
How often does the student miss school?		
Frequently (4–5 times per month)	13	4.6
Sometimes (2–3 times per month)	68	24.0
Rarely (once per month)	162	57.2
Never	40	14.1
Does the student currently have a medical condition requiring clinical and/or pharmacological treatment?		
Yes	54	19.1
No	229	80.9
Did the student attend an extracurricular sports activity last year?		
Yes	101	35.9
No	180	64.1
Distance between home and school		
1–5 blocks	39	14.0
6–10 blocks	48	17.3
11–15 blocks	39	14.0
More than 15 blocks	152	54.7
Usual mode of travel from school to home		
Active travel	42	14.8
Passive travel	241	85.2
Typical clothing worn to attend school		
School tracksuit	129	45.6
School uniform	133	47.0
Any kind of clothing	21	7.4
Does the father regularly engage in physical activity or sports?		
Yes, once a week	76	29.2
Yes, three times a week	47	18.1
Does not engage in physical activity	137	52.7
Does the mother regularly engage in physical activity or sports?		
Yes, once a week	61	22.0
Yes, three times a week	53	19.1
Does not engage in physical activity	163	58.8
Is there a park/court/gymnasium near the home where the students can play?		
Yes	249	89.2
No	30	10.8
If such a place exists, how often is it used?		
Never	45	16.5
Very rarely (once per week)	122	44.7
Sometimes (three times per week)	74	27.1
Frequently (five times per week)	22	8.1
Always (seven times per week)	10	3.7

Note. Qualitative data were presented as absolute and percentage frequencies. Source: Author's own elaboration, 2025.

To describe students' perceptions of school climate, the results for the three ECLIS dimensions are presented in Table 3. These indicators provide an overall view of how students evaluate their relationships with teachers, their interactions with peers, and the physical school environment. Overall, the results show predominantly high perception levels across dimensions, establishing a baseline for subsequent subgroup comparisons.

Specifically, the "Mis Profesores" (My teachers) dimension obtained a mean score of 95.1 (SD = 13.4), with 71% of students reporting a high perception level, suggesting positive and supportive teacher–student relationships. In the "Mis Compañeros" (My classmates) dimension, the mean score was 44.5 (SD = 8.0), with 56.2% of students classified at the high perception level, reflecting generally favorable peer interactions. Regarding the "Los Lugares de mi Colegio" (Places in my school) dimension, the

mean score was 29.8 (SD = 4.7), with 53.7% of students reporting high perception levels, indicating a positive appraisal of the physical school environment.

Across all three dimensions, low perception levels were minimal (<5%), highlighting a generally favorable school climate within the sample.

Table 3. Descriptive statistics and perception levels for the ECLIS dimensions (N = 283)

	Total	
ECLIS	Mean	SD
"Mis profesores" (My teachers) (30–120 points)	95.1	13.4
Low perception (30–59 points)	4	1.4%
Medium perception (60–89 points)	78	27.6%
High perception (90–120 points)	201	71%
	Mean	SD
"Mis compañeros" (My classmates) (15–60 points)	44.5	8.0
Low perception (15–29 points)		
Medium perception (30–44 points)	12	4.2%
High perception (45–60 points)	112	39.6%
	159	56.2%
	Mean	SD
"Los lugares de mi colegio" (Places in my school) (10–40 points)	29.8	4.7
Low perception (10 - 19 points)	5	1.8%
Medium perception (20 - 29 points)	126	44.5%
High perception (30 - 40 points)	152	53.7%

Note. Qualitative data were presented as absolute and percentage frequencies.

To examine whether school climate perceptions varied across socio-school characteristics, one-way ANOVA tests were conducted for each ECLIS dimension. Table 4 summarizes the differences according to age, sex, grade level, school attendance frequency, participation in the School Integration Program (PIE), type of school schedule, and the presence of special educational needs or medical conditions.

In the teacher–student relationship dimension, significant differences were found for age and grade level. Older students (9–10 years) reported higher scores than younger students (7–8 years) ($p = .021$, $\eta^2 = .019$), and fourth-grade students scored higher than third-grade students ($p = .004$, $\eta^2 = .029$). A marginally significant effect was observed for participation in PIE ($p = .050$, $\eta^2 = .011$), with students not enrolled in the program reporting more favorable perceptions of their teachers.

In the peer relationships dimension, school attendance frequency was the only variable showing significant differences ($p = .050$, $\eta^2 = .026$). Students who never missed school and those who were frequently absent reported higher scores than those who were absent occasionally or rarely.

No significant differences were observed for sex, type of school schedule, special educational needs, or medical conditions across any of the three ECLIS dimensions. Overall, effect sizes were small, indicating that the observed differences explained only a limited proportion of the variance in students' perceptions of school climate

Table 4. Differences in ECLIS dimensions according to socio-school characteristics (one-way ANOVA)

Variables	Categories	N	Mean	95% CI		ANOVA	TE
				Lower	Upper	P value	Eta²
Age							
My teachers (30-120 points)	7-8 years	108	92.8	90.3	95.3	.021*	.019
	9-10 years	175	96.5	94.6	98.5		
My classmates (15-60 points)	7-8 years	108	44.5	43.1	46.0	.941	.000
	9-10 years	175	44.5	43.3	45.7		
The place in my school (10-40 points)	7-8 years	108	30.2	29.3	31.1	.311	.004
	9-10 years	175	29.6	28.9	30.3		
Sex							
My teachers (30-120 points)	Men	145	94.0	91.9	96.2	.171	.007
	Women	138	96.2	93.9	98.5		
My classmates (15-60 points)	Men	145	44.8	43.4	46.1	.528	.000
	Women	138	44.2	42.9	45.5		

The place in my school (10-40 points)	Men	145	29.6	28.8	30.3	.368	.003
	Women	138	30.1	29.2	30.9		
Grade							
My teachers (30-120 points)	Third Grade	111	92.3	89.8	94.8	.004**	.029
	Fourth Grade	172	96.9	95.0	98.9		
My classmates (15-60 points)	Third Grade	111	43.9	42.4	45.4	.301	.004
	Fourth Grade	172	44.9	43.7	46.1		
The place in my school (10-40 points)	Third Grade	111	29.9	29.1	30.8	.743	.000
	Fourth Grade	172	29.7	29.0	30.5		
Does your child or pupil have temporary or permanent special educational needs?							
My teachers (30-120 points)	Yes	50	92.5	88.8	96.1	.122	.008
	No	233	95.7	93.9	97.4		
My classmates (15-60 points)	Yes	50	43.1	41.0	45.3	.182	.006
	No	233	44.8	43.8	45.8		
The place in my school (10-40 points)	Yes	50	29.3	27.9	30.8	.437	.002
	No	233	29.9	29.3	30.5		
Participation in School Integration Program (PIE)							
My teachers (30-120 points)	Yes	66	92.6	89.4	95.8	.05*	.011
	No	217	95.9	94.1	97.7		
My classmates (15-60 points)	Yes	66	43.4	41.6	45.2	.197	.006
	No	217	44.8	43.8	45.9		
The place in my school (10-40 points)	Yes	66	29.3	27.9	30.7	.318	.004
	No	217	30.0	29.4	30.6		
What is the student's schedule?							
My teachers (30-120 points)	Morning	18	95.3	89.1	101.4	.339	.008
	Afternoon	98	93.5	90.5	96.6		
	Full day schedule	167	96.0	94.1	97.9		
My classmates (15-60 points)	Morning	18	46.4	43.6	49.2	.365	.007
	Afternoon	98	43.8	42.0	45.5		
	Full day schedule	167	44.7	43.6	45.9		
The place in my school (10-40 points)	Morning	18	29.3	27.2	31.5	.739	.002
	Afternoon	98	29.6	28.6	30.6		
	Full day schedule	167	30.0	29.3	30.7		
How often does the student miss classes?							
My teachers (30-120 points)	Frequently	13	96.0	87.4	104.6	.939	.001
	Sometimes	68	95.9	92.7	99.0		
	Rarely	162	94.8	92.8	96.9		
	Never	40	94.6	90.0	99.2		
My classmates (15-60 points)	Frequently	13	47.1a	42.4	51.8	.05*	.026
	Sometimes	68	44.9b	43.0	46.9		
	Rarely	162	43.5b	42.3	44.8		
	Never	40	46.8a	44.7	49.0		
The place in my school (10-40 points)	Frequently	13	30.9	27.9	34.0	.863	.003
	Sometimes	68	29.8	28.6	31.0		
	Rarely	162	29.8	29.1	30.5		
	Never	40	29.8	28.2	31.3		
Currently, does the student have a condition that requires medical and/or pharmacological treatment?							
My teachers (30-120 points)	Yes	54	97.3	94.0	100.6	.185	.006
	No	229	94.6	92.8	96.4		
My classmates (15-60 points)	Yes	54	44.7	42.3	47.0	.866	.000
	No	229	44.5	43.4	45.5		
The place in my school (10-40 points)	Yes	54	30.2	28.8	31.5	.542	.001
	No	229	29.7	29.1	30.3		

Note: * $p < 0.05$. A Bonferroni post hoc analysis was performed to identify differences between groups. a, b Different letters in the same column indicate significant differences between groups. Source: Own elaboration, 2025.

As shown in Table 5, school climate was examined according to physical activity– and sport-related variables. A significant effect was found only in the "My Teachers" dimension for extracurricular sports participation ($p = .018$, $\eta^2 = .020$), with students who had participated in extracurricular sports activities during the previous year reporting more favorable perceptions of their teachers ($M = 97.6$) than those who had not ($M = 93.7$).

No significant differences were observed in the "My Classmates" or "Places in My School" dimensions for this variable, nor for the remaining physical activity–related indicators, including parental physical activity, type of school clothing, mode of transportation, or access to recreational spaces.

Table 5. Differences in school climate (ECLIS dimensions) according to physical activity and sport-related variables (one-way ANOVA)

Variables	Categories	N	Mean	95% CI		ANOVA	TE
				Lower	Upper	P value	Eta²
Did the student attend an extracurricular sports activity last year?							
My teachers (30-120 points)	Yes	101	97.6	95.0	100.2		
	No	180	93.7	91.7	95.7	.018*	.020
My classmates (15-60 points)	Yes	101	45.3	43.7	46.8	.230	.005
	No	180	44.1	42.9	45.3		
The place in my school (10-40 points)	Yes	101	30.3	29.4	31.3	.191	.006
	No	180	29.6	28.9	30.3		
How far is the school from your home?							
My teachers (30-120 points)	1–5 blocks away	39	94.0	90.1	97.9	.535	.008
	6-10 blocks away	48	96.1	92.4	99.7		
	11-15 blocks away	39	97.4	93.6	101.2		
	More than 15 blocks away	152	94.3	92.0	96.6		
My classmates (15-60 points)	1–5 blocks away	39	42.9	40.1	45.7	.539	.008
	6-10 blocks away	48	44.6	42.0	47.1		
	11-15 blocks away	39	45.5	43.4	47.7		
	More than 15 blocks away	152	44.5	43.3	45.8		
The place in my school (10-40 points)	1–5 blocks away	39	28.5	27.0	30.0	.174	.018
	6-10 blocks away	48	30.7	29.2	32.2		
	11-15 blocks away	39	30.1	28.5	31.6		
	More than 15 blocks away	152	29.8	29.1	30.6		
Usual mode of transportation from school to home							
My teachers (30-120 points)	Active transportation	42	92.9	88.8	97.0	.242	.005
	Passive transportation	241	95.5	93.8	97.2		
My classmates (15-60 points)	Active transportation	42	42.8	40.4	45.2	.135	.008
	Passive transportation	241	44.8	43.8	45.8		
The place in my school (10-40 points)	Active transportation	42	28.9	27.5	30.4	.190	.006
	Passive transportation	241	30.0	29.4	30.6		
Usual clothing worn to attend school							
My teachers (30-120 points)	School tracksuit	129	94.9	92.8	97.1	.636	.003
	School uniform	133	95.6	93.3	98.0		
	Any type of clothing	21	92.7	84.6	100.8		
My classmates (15-60 points)	School tracksuit	129	44.2	43.0	45.5	.471	.005
	School uniform	133	44.4	43.0	45.9		
	Any type of clothing	21	46.5	42.5	50.6		
The place in my school (10-40 points)	School tracksuit	129	30.0	29.2	30.9	.229	.010
	School uniform	133	29.4	28.6	30.2		
	Any type of clothing	21	31.1	29.1	33.1		
Does the father usually engage in physical activity or sports?							
My teachers (30-120 points)	Yes, once a week	76	96.3	93.0	99.7	.578	.004
	Yes, three times a week	47	94.7	90.7	98.6		
	Does not engage in physical activity	137	94.3	92.2	96.5		
My classmates (15-60 points)	Yes, once a week	76	45.5	43.8	47.2	.317	.009
	Yes, three times a week	47	43.5	41.2	45.8		
	Does not engage in physical activity	137	44.1	42.6	45.5		
The place in my school (10-40 points)	Yes, once a week	76	30.5	29.4	31.5	.270	.010
	Yes, three times a week	47	30.0	28.7	31.2		
	Does not engage in physical activity	137	29.4	28.5	30.2		
Does the mother usually engage in physical activity or sports?							
My teachers (30-120 points)	Yes, once a week	61	95.9	91.9	99.9	.882	.001
	Yes, three times a week	53	95.3	91.6	99.1		
	Does not engage in physical activity	163	94.9	93.0	96.8		
My classmates (15-60 points)	Yes, once a week	61	45.0	42.7	47.3	.858	.001
	Yes, three times a week	53	44.3	42.2	46.4		
	Does not engage in physical activity	163	44.4	43.2	45.6		
The place in my school (10-40 points)	Yes, once a week	61	30.0	28.8	31.2	.936	.000
	Yes, three times a week	53	29.9	28.7	31.2		
	Does not engage in physical activity	163	29.8	29.0	30.5		
Is there a park/court/gym near your home where your son/daughter or pupil can go out to play?							
My teachers (30-120 points)	Yes	249	95.1	93.4	96.8	0.600	0.001
	No	30	96.4	91.9	101.0		
My classmates (15-60 points)	Yes	249	44.8	43.8	45.7	.169	.007
	No	30	42.6	39.7	45.6		
The place in my school (10-40 points)	Yes	249	30.0	29.4	30.6	.443	.002
	No	30	29.3	27.9	30.7		
If there is a park/court/gym near your home, how often is it used?							
My teachers (30-120 points)	Never	45	94.4	90.6	98.2	.978	.002
	Very rarely	122	95.2	92.8	97.5		
	Sometimes	74	95.4	92.0	98.8		
	Frequently	22	95.4	90.2	100.6		
	Always	10	97.5	84.9	110.1		
My classmates (15-60 points)	Never	45	43.7	41.4	46.1	.345	.017

	Very rarely	122	45.4	44.0	46.8		
	Sometimes	74	43.7	41.7	45.6		
	Frequently	22	45.8	42.3	49.2		
	Always	10	41.8	33.9	49.7		
The place in my school (10-40 points)	Never	45	29.2	27.6	30.7		
	Very rarely	122	29.7	28.9	30.5		
	Sometimes	74	30.1	29.2	31.0		.013
	Frequently	22	31.3	28.8	33.9	.489	
	Always	10	30.3	26.0	34.6		

Note: * p < .05. A Bonferroni post hoc test was conducted to identify differences between groups. a, b Different letters in the same column indicate statistically significant differences between groups. Source: Own elaboration, 2025.

Discussion

This study characterized school climate in third- and fourth-grade students across three dimensions—teacher–student relationships, peer interactions, and perceptions of the school environment—and examined whether these perceptions varied according to socio-school characteristics and physical activity–related indicators. Overall, students reported predominantly positive perceptions across all ECLIS dimensions, while the analyses revealed specific differences related to age, grade level, participation in the School Integration Program (PIE), school attendance frequency, and extracurricular sports participation. These findings suggest that school climate in primary education is generally perceived positively, particularly in relational dimensions, reinforcing the importance of interpersonal interactions during early educational stages.

The teacher–student relationship emerged as the most positively valued dimension, with high mean scores and a large proportion of students in the high perception range. This finding is consistent with previous research highlighting the teacher–student bond as a key protective factor for socioemotional well-being and academic engagement. In this sense, teachers appear to function not only as instructional figures but also as central sources of emotional support and security in primary education.

Differences by age and grade level suggest that older and fourth-grade students perceive their teachers more positively than younger and third-grade students. This may reflect developmental changes in how children interpret academic and emotional support, as well as the cumulative effects of sustained relationships with teachers over time. At the same time, the slightly lower scores among students enrolled in PIE point to persistent challenges in translating inclusion policies into fully equitable relational experiences.

Peer relationships were also evaluated positively, although with slightly lower scores than the teacher–student dimension. The association between attendance frequency and the “My Classmates” dimension should be interpreted with caution, as the subgroup of students with frequent absences was small, which may reduce the stability of the estimated mean and increase sensitivity to sampling variability or outliers.

This study also extends previous research by examining the associations between physical activity indicators and students’ perceptions of school climate. The results showed a selective association: extracurricular sports participation was significantly related only to the teacher–student relationship dimension, with students who participated in sports reporting more favorable perceptions of their teachers than those who did not.

Although some differences reached statistical significance, the associated effect sizes were small. Therefore, the findings should be interpreted as modest contextual tendencies rather than strong influences on school climate. No significant differences were observed for peer relationships or perceptions of the school environment, nor for other physical activity–related indicators such as mode of transportation, parental physical activity, or access to recreational spaces.

In this study, physical activity appears as a context-dependent resource. Its influence seems to be more evident in specific relational dimensions, particularly in how students perceive their teachers, rather than acting as a universal determinant of school climate.

Despite these contributions, several limitations should be acknowledged. First, physical activity–related variables were obtained through questionnaires completed by parents or legal guardians rather

than through objective measures. Second, the analyses relied exclusively on univariate statistical approaches, which limits the ability to control for potential confounding factors. Third, some subgroup sample sizes were imbalanced, particularly in the analysis of school attendance frequency. Finally, the cross-sectional and correlational nature of the study prevents causal interpretations, and the findings may not be directly generalizable beyond the urban schools included in the sample.

The results should therefore be interpreted as associations between variables rather than as evidence that participation in sports or other factors directly improves perceptions of school climate.

Conclusions

This study highlighted the central role of teacher–student relationships in shaping school climate perceptions in primary education. It also underscored the importance of strengthening inclusive practices, particularly for students participating in School Integration Programs (PIE), to ensure equitable and meaningful participation in school life.

Additionally, the findings suggested that structured and inclusive physical activity experiences may contribute to more positive relational environments in schools. Although the cross-sectional design limited causal interpretations, these results provided relevant guidance for promoting socioemotional well-being, inclusion, and positive coexistence within school communities.

Future research should examine these associations using longitudinal and multivariate approaches to better understand causal pathways and control for potential confounding variables. In addition, intervention-based studies are needed to evaluate the impact of structured physical activity programs on different dimensions of school climate in diverse educational contexts.

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Authors' and translators' details:

Jacqueline Valdebenito Villalobos	javaldebenito@udec.cl	Author
Igor Cigarroa	icigarroac@ucsh.cl	Author
Jorge Rojas-Bravo	jorgemanrojas@udec.cl	Author
Carolina Muñoz Pérez	caromunozp@udec.cl	Author/Translator
María Aurora Gutiérrez Echavarria	mgutierreze@udec.cl	Author
Andrea Tapía Figueroa	andrtapia@udec.cl	Author
Alejandra Robles-Campos	alejandrarobles@udec.cl	Author
Elizabeth Segura Inostroza	esegura@udec.cl	Author
Ruben Abello-Riquelme	ruebnabello@udec.cl	Author
Ana María Arias Díaz	anamarias@udec.cl	Author
Rafael Zapta Lamana	rafaelzapata@udec.cl	Author