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Family social climate and social skills of fourth and fifth-year high school students in a public school in Callao, Peru

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Abstract

Context and relevance. The family's social climate is a crucial variable in the development of social skills. This research is based on Moos's family social climate theory, which posits that the characteristics and dynamics of the familial environment influence the mental health of its members. **Objective.** The general objective of this study was to determine the relationship between family social climate and the social skills of fourth and fifth-year high school students at a public school in Callao. **Methods and materials.** A retrospective, cross-sectional, correlational, non-experimental design was employed. Additionally, to determine if other variables act as moderators, a moderation analysis has been carried out. A sample of 137 students was selected using random probability sampling. The Family Climate Scale (FES) and the Social Skills Scale were administered. **Hypothesis.** there is a direct and significant relationship between family social climate and social skills of fourth and fifth-year high school students at a public school in Callao. **Results.** Is demonstrated a direct correlation ($\rho = 0,418$) with a medium effect size between the two variables. Additionally, direct and significant correlations were found between social skills and all three dimensions of the family social climate, with large effect sizes for each, with values that ranged between 0,69 and, 0,88. **Conclusions.** It is concluded that family social climate and social skills share a similar covariation in approximately 17% of cases. To confirm that this relationship is moderated by other factors, a moderation study was conducted with age, level of education, and sex. None of these variables were found to moderate the relationship between family social climate and social skills because the p values were greater than 0,05.

Keywords: family social climate, social skills, adolescence, family

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Семейный социальный климат и социальные навыки учеников 4 и 5 классов средней школы государственной школы в Кальяо, Перу

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Резюме

Контекст и актуальность. Социальный климат семьи является ключевой переменной в развитии социальных навыков. Это исследование основано на теории семейного социального климата Мооса, которая утверждает, что характеристики и динамика семейной среды влияют на психическое здоровье ее членов. **Цель.** Общая цель исследования заключалась в определении взаимосвязи между семейным социальным климатом и социальными навыками учеников четвертого и пятого курсов средней школы в государственной школе Кальяо. **Методы и материалы.** Был использован ретроспективный, поперечный, корреляционный, неэкспериментальный дизайн. Для выяснения, выступают ли другие переменные модераторами, был проведен анализ модерации. Случайным вероятностным методом была выбрана выборка из 137 учеников. Участникам были предложены Шкала семейной среды (FES) и Шкала социальных умений (ENS). **Гипотеза.** Предполагалось наличие прямой и значимой связи между семейным социальным климатом и социальными навыками учеников четвертого и пятого курсов средней школы в государственной школе Кальяо. **Результаты.** Была обнаружена прямая корреляция ($\rho = 0,418$) со средним размером эффекта между двумя переменными. Кроме того, были выявлены прямые и значимые корреляции между социальными навыками и всеми тремя измерениями семейного социального климата с большими размерами эффекта для каждого, значения которых колебались между 0,69 и 0,88. **Выводы.** Выявлена схожая ковариация между семейным социальным климатом и социальными навыками примерно в 17% случаев. Чтобы проверить влияние других факторов, был проведен анализ модерации, учитывающий возраст, уровень образования и пол. Ни одна из этих переменных не оказалась модератором связи между семейным социальным климатом и социальными навыками, так как значения r оказались больше 0,05.

Ключевые слова: семейный социальный климат, социальные навыки, подростки, семья

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Introduction

The long confinement of the pandemic generated a kind of embalming of emotions, bad tempers, and disappointments; In addition, pressures due to chaos, confinement, and the risks of prolonged social isolation (Hernández-Rodríguez, 2020; Ozamiz-Etxebarria, 2020; Barranco-Cuevas et al., 2021). This situation had a great impact on the family social climate, which could be strengthened or broken, depending on some factors that determined the quality of confinement, including the quality of life in isolation and the availability of resources for such a state, the cultural aspects specific to each family group, each social group, etc. (Galindo-Vázquez et al., 2020; Ozamiz-Etxebarria et al., 2020) It could be said that mental health and the family social climate were significantly affected by this pandemic phenomenon to a lesser or greater degree, favorably or unfavorably, depending on the other factors around each family nucleus in a state of social isolation, as well as the way and measures they adopted to cope with it (Beraún, 2022); Urquijo, 2020).

It is important to study the family social climate in both pandemic and post-pandemic environments, along with other potentially affected parameters of adolescent psychology, such as social skills. The family climate, understood as the perceived atmosphere of interactions among its members, significantly impacts children's and adolescents' cognitive, emotional, behavioral, social, and physical development. Moreover, it can be influenced by parents' health status (Iacopetti et al., 2021).

On the other hand, social skills encompass a wide range of competencies related to building and maintaining relationships, understanding and managing emotions, achieving goals, and learning from experience (Napolitano et al., 2021). During adolescence, social skills play a crucial role in managing the stressors and challenges associated with developmental transitions, thereby protecting individuals from adverse outcomes. Supporting this, cross-sectional and longitudinal studies have reported a correlation between strong social skills and fewer depressive symptoms in adolescents. Therefore, it is essential that social skills training programs can be adapted to meet the needs of those who require improvement in this area. Despite advancements in technology, it is crucial to investigate how various factors influence the effectiveness of mobile health interventions (Nilsen et al., 2017).

Adolescence is a crucial period of social expansion, during which the development of social cognitive skills is essential for healthy integration into society (Martinsone et al., 2022). The family, a complex emotional system, is considered the cornerstone and foundational structure of any society, serving as the crucible for human emotions and intimate relationships. It is evident that the functioning of the family significantly impacts the functioning of society (Kharazmi et al., 2011). Consequently, the family plays a pivotal role in adolescents' social development. However, there is a dearth of information regarding the impact of the family climate on adolescents' social adaptation and, subsequently, its relationship with social skills.

En 1990, Margalit and Eysenck's study, one of the oldest but most cited in Scopus, investigated how gender, social skills, personality, and family climate predict an adolescent's sense of coherence. The authors examined a sample of 732 adolescents, evenly divided by gender. While gender did not affect the sense of coherence, significant differences were found in the perception of family climate, social skills, and personality (Margalit, Eysenck, 1990).

Another highly cited research investigated the relationship between the family social climate and social skill performance. However, unlike the present study, their participants were children aged two to three (Izasa, Henao, 2011).

Among the studies reviewed, the relationship between family social climate and social skills in fourth-grade secondary students at a public school in Cajamarca stands out. The sample consisted of 132 students aged 15 to 16. Results indicate a significant correlation between the variables ($r = 0,730$). Furthermore, direct and significant correlations were observed between social skills and the dimensions of relationships (0,606), development (0,622), and stability (0,445) (Ozamiz-Etxebarria et al., 2020). The first two correlations exhibited a large effect size [TE], while the third demonstrated a medium effect size (Cohen, 1988).

A study of 366 adolescents aged 10 to 19 at Túpac Amaru Educational Institution in Tarapoto, conducted in 2018, found no significant correlation between family social climate and social skills, nor between the climate and its dimensions (Benavides, Calle, 2021).

Another study examining the relationship between social skills and family social climate was conducted in 2019 at a school in the Tambo, Huancayo district. Involving 275 students, the research found a significant correlation of 0,151, with a small effect size (TE), between family social climate and social skills. A significant correlation was also found between social skills and the relationships dimension of family social climate. Conversely, no significant correlations were observed between social skills and the stability or development dimensions of family social climate (Quispe, 2020).

Ultimately, a study of 159 students from first to fifth grade in a secondary school in Jaén, Cajamarca, Peru, investigated the relationship between social skills and family social climate. A significant correlation of 0,177, indicating a small effect size (TE), was found between the two variables. However, no relationship was observed between basic social skills, advanced social skills, those related to emotions, or aggression management skills and any dimension of family social climate. Finally, only the family social climate dimension of development correlated significantly ($Rho: 0,16$) with the social skills of coping with stress and planning, both with small effect sizes (Bances, 2020).

The reviewed studies present inconsistent findings and have primarily focused on inland Peruvian provinces. Consequently, it is essential to investigate the relationship between family social climate and social skills among fourth and fifth-year students in Callao secondary schools? Based on this question, the general objective is to determine the relationship between family social climate and social skills of fourth and fifth-year high school students at a public school in Callao, likewise, the following specific objectives are proposed:

1. Determine the relationship between the relationship dimension of the family social climate and social skills.
2. Determine the relationship between the development dimension of the family social climate and social skills.
3. Determine the relationship between the stability dimension of the family social climate and social skills.
4. Investigate whether age, educational level, and gender moderate the relationship between family social climate and social skills.

This research is grounded in Moos's family social climate theory, which posits that the characteristics and dynamics of the family environment affect the mental health of its members. The theory's structural components, cohesion and adaptability, vary significantly across family environments, influencing individual behaviors, including social skills. Cohesion refers to the extent to which family unity is emphasized,

while adaptability denotes the degree to which appropriate interpersonal behavior is encouraged (Moos, R., Moos, B.S., 1981; Moos, R., Moos, B.S., 1994).

Hypothetically, it is assumed that there is a direct and significant relationship between family social climate and social skills of fourth and fifth-year high school students at a public school in Callao. Specifically, it is hypothesized that there are direct and significant relationships between the dimensions of family social climate and social skills. Lastly, it is hypothesized that age, educational level, and gender do not moderate the relationship between family social climate and social skills.

Material and methods

This is a quantitative, correlational, cross-sectional study that focuses on the numerical measurement of statistically related variables through the application of instruments at a single point in time (Nilsen et al., 2017). The study employs an explanatory comparative associative strategy and an explanatory design with an observable variable (Ato, López, Benavente, 2013). This approach examines the moderating effects of age, grade, and sex on the relationship between family social climate and social skills. The population consisted of 210 fourth and fifth-grade secondary school students from a public school in Callao, Peru (Ministry of Education of Peru, 2023). A sample size of 137 students was determined using the formula for finite populations proposed by Abad and Servin in 1981 (Grajeda-Montalvo, 2018) with a 95% confidence level and selected through random sampling. All students have access to the internet, sufficient computing experience, and familiarity with online technologies since their primary education. Therefore, we assume there will be no sampling bias. Participants ranged in age from 14 to 18 years, with a mean age of 15,26 and a standard deviation of 1,15. The study found that 77% of single individuals from low socioeconomic backgrounds were women, and the remaining 33% were men, 62% are fourth graders and 38% are fifth graders. The findings of this study can only be applied to the population

of fourth and fifth-year high school students at the Heroines Toledo state school in Callao. The school is at Cercado del Callao, a city on the Peruvian coast with an average altitude of thirteen meters above sea level and a temperate, oceanic climate (Geophysical Institute of Peru, 2024). The students come from families with low socioeconomic status, belonging to levels D and E, with monthly incomes of up to \$535 and \$340, respectively. These families comprise 33,6% of the population of Callao (Peruvian Association of Market Intelligence Companies, 2024).

The Family Climate Scale (FES), published for the third time by Moos & Moos (Moos, R., Moos, B.S., 1981), was utilized as an instrument. This scale has been validated and applied to populations in Latin America, Peru, and Lima on multiple occasions, consistently demonstrating a coefficient of internal consistency exceeding 0,85. This indicates high levels of coherence and internal consistency. The scale's validity and relevance have been accredited by successive expert panels. The FES offers segmented measurement for each of the three dimensions and their corresponding indicators. For the "relationships" dimension, it measures cohesion, expressiveness, and conflict. For the "personal development" dimension, it measures autonomy, performance, cultural intellectuality, social recreation, morality, and religiosity. For the "stability" dimension, it measures organization and control. A psychometric study of 1,384 students from state secondary schools in Lima demonstrates that the test maintains high content validity based on the Aiken V coefficient, which was greater than 0,80. Reliability was obtained with Cronbach's alpha, which was equal to 0,85 (Mallma, 2020). These data demonstrate that the instrument adapts to the context of the Peruvian adolescent and specifically the Lima region, both in its reliability and validity indices (Ozamiz-Etxebarria, 2020).

The other instrument used was the Social Skills Scale (EHS), (Gismero, 2020). Its latest version comprises 33 items divided into six dimensions. Notably, 28 items focus on a lack of assertiveness or social skills deficits, while five items are positively worded. The scale is

primarily intended for clinical and educational settings. Construct validity was established through Exploratory Factor Analysis (EFA), identifying six factors in the Spanish population. Reliability, assessed using Cronbach's Alpha, yielded a coefficient of 0,88. In Peru, a recent study determined validity through expert judgment, finding all 33 items highly significant ($p: 0,0001$). The same author reported a Cronbach's Alpha of 0,85, demonstrating the scale's reliability among adolescents in southern Lima (Moos, R., Moos, B.S., 1994). A pilot study of 150 students from state secondary schools in Lima demonstrates that the test maintains high construct validity obtained with the correlation dimension test in which the coefficients were 0,29 with expression of anger and 0,74 with expression in social situations. Reliability was 0,89 using Cronbach's alpha and 0,90 using Omega (Guzman, Villalta, 2021). Those coefficients demonstrate that the instrument adapts to the context of the Peruvian adolescent and specifically the Lima region, both in its reliability and validity indices (Ñaupas, 2018).

Initially, coordination with the educational institution director was sought to obtain authorization for the research. Subsequently, personal data, email addresses, and contact numbers of 210 fourth and fifth-grade secondary students from Heroínas Toledo School in Callao were collected for the 2023 academic year. A random sample of 137 students was selected and administered questionnaires via Google Forms. Informed consent to participate in the study was obtained from all participants. Data was collected and tabulated as it was received from each student and subsequently processed.

To assess data normality, the Kolmogorov-Smirnov test was conducted. Findings indicated normal distribution for the variables and one dimension, allowing the use of Pearson's r correlation. However, two dimensions exhibited non-normal distribution, necessitating the application of Spearman's correlation. Effect sizes (ET) were calculated using Cohen's r^2 , because this is the appropriate estimator for correlations, as suggested by David Cohen. The magnitude of the effect, as measured by r^2 , enables us to estimate the percentage of variation in the second variable that can be attributed to the variation in the first (Cohen, 1988). It is crucial to examine whether other variables moderate the correlation. To this end, a moderation analysis was conducted to determine if the relationship is independent or influenced by additional factors (Igartua, Hayes, 2021).

Additional materials block

The complete dataset underlying this research is available in RusPsyData (Grajeda-Montalvo, 2024).

Results

Table 1 shows a strong positive correlation between the relationships dimension of the family social climate and social skills. Showing that the covariation of both occurs in 56% of cases. This indicates that in 56 percent of cases, when the relationship dimension changes, social skills also change in the same direction.

Table 2 demonstrates a strong positive correlation with a large effect size (TE) between the development dimension of the family social climate and social skills. This relationship accounts for 77% of the covariation of both.

Table 1

The relationship between the Relationships Dimension of the Family Social Climate and Social Skills of fourth and fifth-year high school students at a public school in Callao (N = 137)

Rho of Spearman	Relationships	Social skills	
		Correlation coefficient	0,75**
		r^2	0,56
		Sig. (bilateral)	0,000

Note. ** Indicates a significant correlation at the 0,01 level (two-tailed).

Table 2

The Relationship Between the Development Dimension of the Family Social Climate and Social Skills of fourth and fifth-year high school students at a public school in Callao (N = 137)

			Social skills
Pearson	Development	r	0,88**
		r^2	0,77
		Sig. (bilateral)	0,000

Note. ** Indicates a correlation significant at the 0,01 level (two-tailed).

Table 3 shows a strong positive correlation with a large effect size between the stability dimension of the family social climate and social skills. 48% of the time, the two variables move in the same direction.

Table 4 indicates a direct, significant correlation with a medium effect size between family social climate and social skills. In 17% of the time, the two variables move in the same direction.

Table 3

The Relationship Between the Stability Dimension of the Family Social Climate and Social Skills of fourth and fifth-year high school students at a public school in Callao (N = 137)

			Social skills
Rho of Spearman	Stability	Correlation coefficient	0,69**
		r^2	0,48
		Sig. (bilateral)	0,000

Note. ** Indicates a significant correlation at the 0,01 level (two-tailed).

Table 4

Family Social Climate and Social of fourth and fifth-year high school students at a public school in Callao (N = 137)

			Social skills
Pearson	Family social climate	<i>r</i>	0,42**
		<i>r</i> ²	0,17
		Sig. (bilateral)	0,000

Note. ** Indicates a significant correlation at the 0,01 level (two-tailed).

Table 5

A moderation analysis of age, grade and sex in the relationship between family social climate and social skills (N = 137)

	Estimate	SE	Z	p
Family social climate	0,48850	0,0906	5,391	<0,001
Age	-2,35044	0,6301	-3,730	<0,001
Family social climate * age	0,00921	0,0836	0,110	0,912
Family social climate	0,5120	0,0935	5,476	<0,001
Grade	-3,3321	1,5374	-2,167	0,030

	Estimate	SE	Z	p
Family social climate * grade	–0,0422	0,1908	–0,221	0,825
Family social climate	0,522	0,0948	5,499	<0,001
Sex	–1,128	1,7820	–0,633	0,527
Family social climate * sex	0,248	0,2112	1,176	0,240

Since the p-values for the interactions of social climate with age, grade, or sex are all greater than 0,05, there is insufficient evidence to conclude that these variables moderate the relationship between family social climate and social skills.

Discussion

When examining the relationship between family social climate and social skills of fourth and fifth-year high school students at a public school in Callao, a Spearman's Rho coefficient of 0,42 was found, with a bilateral significance of $p = 0,000$ ($p < 0,0001$). This indicates a positive correlation with a medium effect size (TE) between the two variables. These findings align with previous research demonstrating direct and significant correlations between family social climate and social skills (Peralta, Quispe, 2019; Quispe, 2020; Bances, 2020). Conversely, one study reported no significant relationship between these variables (Benavides, Calle, 2021). This discrepancy with the previous study could be attributed to the differing samples. The earlier research included adolescents aged 10 to 19, attending grades 1 to 5 of secondary school, and residing in a Peruvian jungle province. In contrast, the present study focused on students aged 14 to 18, enrolled in grades 4 and 5 of secondary school, and living in a district of the Peruvian capital. These sociodemographic disparities might have influenced the responses, potentially introducing a bias that prevented the validation of the hypotheses proposed by Benavides and Calle (Benavides, Calle, 2021). However, such a bias was not observed in the current research, which found a direct and significant correlation, aligning most of the findings from previous studies (Bances, 2020; Peralta, Quispe, 2019; Quispe, 2020). Given that most studies have found a direct and significant cor-

relation, it can be inferred that the mathematical behavior of both variables is highly similar. Consequently, variations in family social climate correspond to variations in social skills for 17% of participants in this study.

To confirm that this relationship is not moderated by other factors, a moderation study (Igartua, Hayes, 2021) was conducted with age, level of education, and sex. None of these variables were found to moderate the relationship between family social climate and social skills. It can be assumed that the family social climate significantly influences social skills in a significant portion of the sample. The possible moderations of other variables have not been analyzed, which constitutes a limitation of this study. Future studies are expected to address this limitation. No studies have been found that have examined the moderation of age, grade, or sex or other variables in the relationship between family social climate and social skills. This study represents a first step toward a better understanding of this association.

Regarding the relationships between the dimensions of the family social climate and social skills among fourth and fifth-year high school students, positive and significant correlations were found across all dimensions. The strongest correlation was with development, followed by relationships, and finally stability, with large effect sizes (TE) for all. Previous research partially supports these findings, showing direct and significant correlations, albeit with varying effect sizes (Peralta, Quispe, 2019; Quispe, 2020). Conversely, one study reported no significant correlations between social skills and family social climate dimensions (Benavides, Calle, 2021). Most research agrees that social skills are linked to development and relationships within the family social climate. The stronger relationship with development is expected, as this dimension involves actions fa-

cilitating interaction with individuals outside the family, such as individual autonomy, security, knowledge acquisition, sports, and value cultivation Moos (Moos, R., Moos, B.S., 1981; Moos, R., Moos, B.S., 1994). The second strongest correlation, with relationships, is characterized by family cohesion, expressiveness, and conflict, which allow for the open expression of both positive and negative emotions (Moos, Trickett, 1974).

Conclusions

It is concluded that there is a significant, positive correlation with a medium effect size between family social climate and social skills, accounting for approximately 17% of participants. This suggests that a higher family social climate is associated with higher levels of social skills.

Likewise, student social skills are significant-ly and directly related to all dimensions of the

family social climate with large effect sizes (TE). These relationships account for 56%, 77%, and 48% of participants for the relationships, development, and stability dimensions, respectively.

Age, educational level and sex do not act as moderating variables of the relationship between family social climate and social skills; therefore, the family social climate predicts social skills in at least 17% of cases.

Recommendations and limitations

Further research should consider additional variables that might moderate the relationship between family social climate and social skills.

Widen the age range to encompass all adolescents.

The generalizability of the results is restricted to fourth and fifth-year students enrolled at the Heroínas Toledo State School in Callao.

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Ynés Solano Guillen — data collection, writing of the manuscript.

Shirley Ore Sandoval — data collection and analysis, visualization of research results.

All authors participated in the discussion of the results and approved the final text of the manuscript.

Conflict of interest

The authors declare no conflict of interest.

Ethics statement

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