



Subjective socioeconomic status and life satisfaction among high school students: the role of teacher-student relationships

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Abstract

Comprehending the factors that contribute to the well-being of students holds great importance within educational settings. This study aims to investigate the interplay between subjective socioeconomic status (SES), teacher-student relationship (TSR), and life satisfaction among high school students, particularly focusing on the psychological impact of perceived socioeconomic status. A total of 806 high school students (468 females, $M_{\text{age}} = 16.82$, $SD = 1.54$) from Northern Italy took part in this study. The collection of data involved the use of questionnaires, following the acquisition of consent from both school principals and participants. Measures included the MacArthur Scale of Subjective Social Status-Youth Version for SES and the Student Perception of Affective Relationship with Teacher Scale for TSR. Path analysis results revealed that positive TSR enhances life satisfaction, while conflict and negative expectations undermine it. These factors mediate the relationship between subjective SES and life satisfaction. Based on these findings, it is proposed to improve TSR to reduce the impact of SES. It is important to advocate for methods that promote building close relationships between teachers and students to improve student well-being and ensure equal educational outcomes.

Keywords Adolescents · Socioeconomic status · Teacher-student relationship · Life satisfaction · High school students

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1 Introduction

The importance of socioeconomic status (SES) and the increasing influence of individual perspectives in educational research are gradually recognized in the altering educational environment for adolescents (Murtha et al., 2023). The amplified focus also requires detection of effects on student well-being beyond academic indicators (Lin et al., 2024a; Longobardi et al., 2022).

Subjective SES offers a more thorough and differentiated view compared to the conventional objective SES levels. Social status is determined by the assessment of an individual's position in the social ladder, which is characterised by personal variables such as wealth, education and professional prestige (Conger & Donnellan, 2007; Duncan & Magnuson, 2003; Madigan & Daly, 2023; Orthner et al., 2004; Reardon, 2011). This discrepancy underscores the complicated relationship between an individual's SES and the resulting psychological outcomes. Furthermore, it underlines the lack of significant psychological effects in conventional socioeconomic metrics (Dou et al., 2024; Luthar & Becker, 2002; Quon & McGrath, 2014).

There is a growing recognition that adolescents -and young people in general- have a decisive influence on their own social, emotional and cultural development. It is widely recognized that adolescents need favorable conditions to achieve optimal levels of learning, emotional well-being and social functioning (Marengo et al., 2024; Steinmayr et al., 2019). Furthermore, educational institutions face challenges arising from persistent socio-economic inequalities and economic uncertainties. To overcome these challenges, it is not enough to focus only on improving teaching methods, but the well-being of the diversified and heterogeneous student body must also be taken into account (Crosnoe, 2012; Dou et al., 2024; Gibson-Davis & Hill, 2021; Jensen, 2009; Sirin & Rogers-Sirin, 2004). To effectively address the impact of problems on outcomes, it is essential to create a comprehensive research plan and policy structure for education that meets the complex needs of today's students (Krahé et al., 2014; Wells, 2014).

The teacher-student relationship (TSR) plays a crucial role in emphasising the importance of constructive and encouraging interactions in the educational context. A beneficial therapeutic support resource that provides emotional help and recognition is particularly appropriate for students facing challenges related to lower subjective SES. Participation in this activity not only improves academic performance, but also overall life satisfaction (Hamre & Pianta, 2003; Spilt et al., 2011). In contrast, students who consider themselves economically disadvantaged may face additional barriers, such as increased stress and lower life satisfaction, due to negative relationships with teachers (Buyse et al., 2008; Hughes et al., 2008). The complex relationship between SES, TSR, and students' subjective well-being underscores the critical importance of a nurturing and encouraging educational environment that meets the changing demands of modern adolescents.

This study aims to analyze the mediating role of TSR in the relationship between subjective SES and life satisfaction among high school students.

1.1 Subjective socioeconomic status

Socioeconomic status (SES) can be assessed using subjective and objective measures, as shown in previous research (Chen et al., 2013; Singhoux et al., 2005; Tan et al., 2020). The subjective SES of high school students has a significant impact on their life satisfaction. This underlines the importance of the individual perspective, which carries more weight than objective measures alone. Specific socioeconomic status (SES) is defined by an individual assessment of social position that considers elements such as community and peer groups, as well as assessments of wealth, educational attainment, and employment status (Adler et al., 2000; Gao & Wang, 2023; Goodman et al., 2001). In their recent study, Graziano et al. (2024) concluded that teacher empathy, moderated by emotional self-efficacy, fosters inclusiveness and buffers the negative effects of low SES on student outcomes. The concept of subjective socioeconomic status (SES) focuses on the psychological effects of a person's perceived social position, rather than relying solely on objective measures such as family income and parental education levels (Mastrokourou et al., 2024). This approach takes into account the complex psychological effects that social position can have on individuals (Arslan & Coşkun, 2020; Destin et al., 2017; Eccles & Roeser, 2011; Rodríguez-Meirinhos et al., 2020). As research findings show, the assessment of adolescents' psychological outcomes is typically determined by their objectively observable SES (Arslan & Coşkun, 2020). The emotional well-being and general happiness of adolescents -and young people in general- are strongly induced by the perception of their social status. The perception that one has a lower social status can sometimes lead to feelings of social inadequacy and exclusion. This leads to a reduction in overall enjoyment of life (Martin-Storey et al., 2018). These convictions can lead to increased psychological distress and decreased life satisfaction, which ultimately affects life students' engagement in academic and non-academic activities.

1.2 Life satisfaction

Current scientific research is primarily concerned with subjective well-being, especially with the satisfaction levels of adolescents (Aymerich et al., 2021; Chen et al., 2020; Orben et al., 2022). The period of adolescence is characterised by significant physiological and psychological changes that strongly influence general well-being (Steinmayr et al., 2019; Lin et al., 2023; Yan et al., 2021). It is also a critical stage where well-being during adolescence has long-term effects on adult mental health (Otto et al., 2021). Assessing life satisfaction in adolescents is of utmost importance to first evaluate their overall well-being, which includes their sense of completeness, fulfilment and happiness in general (Li et al., 2023). Social capital most likely serves as an indirect mediator between adolescent' SES and well-being through these variables (Addae, 2020). It has been shown that adolescents have higher life satisfaction and a greater sense of happiness due to their social capital, regardless of lower SES. It is therefore important to use what is often referred to as social capital as a protective factor in the fight against child poverty and SES-related inequalities, especially in the early stages of life. The determination of perceived emotional intelligence (PEI) carried out by Azpiazu et al. (2023) shows that it has a significant influence on the

subjective well-being of adolescents. Emotional clarity and repair have a positive effect on life satisfaction and positive affect. The study also points to moderation by age and gender and shows that these two socio-personal variables shape the relationship between PEI and well-being. These results emphasise the importance of tailored interventions to improve emotional skills in adolescence. A study conducted by Proctor and colleagues (2009) found a significant correlation between life satisfaction and various aspects of adolescents' lives, including academic achievement, family dynamics, and community engagement. Moreover, Gilman and Huebner (2006) have shown that a higher levels of happiness and fulfillment in adolescents has a positive effect on their physical well-being and reduces stress. Furthermore, these factors also play an important role in their academic performance and reduce the likelihood of dropping out of school. It is therefore clear that the level of satisfaction that young people experience in their lives strongly influences their overall school experience (Diener et al., 2012; Lin et al., 2023; Longobardi et al., 2023). Participating in appropriate activities and fostering positive relationships with teachers that promote feelings of competence, expertise, and connectedness can lead to higher life satisfaction in adolescents (Suldo et al., 2006; Tian et al., 2015). Conversely, negative events such as social exclusion or inadequate education can significantly affect overall life satisfaction and contribute to the development of behavioral problems and mental illness (Heffner & Antaramian, 2016; Lyons et al., 2013).

1.3 Teacher-student relationships

Teacher-student relationships (TSRs) are preponderant to the educational experience and encompass emotional and pedagogical interactions between teachers and their students. Positive TSRs, which include support, understanding, and mutual respect, have a major impact on students' academic achievement and psychological well-being (Hamre et al., 2003; Spilt et al., 2011). Lin et al. (2024b) demonstrated that teacher-student relationships play an important role in mediating between adversities such as bullying and students' psychological adjustment, thus serving to buffer external stress. Furthermore, teachers may provide a safe haven, especially for students at risk, although the bonds between students and teachers do not usually meet the characteristics of attachment, as they are not characterised by lasting emotional and intense connections between time and space (McGrath & Van Bergen, 2015). These collaborations serve as an important safeguard against the detrimental consequences of inadequate SES by improving student engagement and their ability to bounce back from challenges (Pianta & Allen, 2008; Roorda et al., 2017). It is also worth mentioning that despite the challenges posed by the high school structure, such as multiple teachers and less time spent with each teacher, close relationships with teachers have a stronger correlation with student learning behavior and motivation than in elementary school (Jagenow et al., 2015).

In contrast, a detrimental social evaluation system characterised by disagreement, lack of support, or misinterpretation has been shown to have negative effects on students' emotional well-being and academic performance. These associations can lead to increased school avoidance, poorer academic performance and poorer mental health outcomes (Hughes et al., 2008; Longobardi et al., 2016). A critical aspect of

students' learning experiences and results is the quality of the TSR. To ensure that all students are effectively supported irrespective of their social status, it stresses the importance of encouraging positive classroom interactions (Cornelius-White, 2007; Gehlbach et al., 2011).

1.4 Study aim

The aim of this study is to investigate the effects of subjective socioeconomic status (SES) and teacher-student relationship (TSR) on the life satisfaction of high school students. In particular, we examined how students' perceptions of SES and interactions with teachers affect life satisfaction. We hypothesise that subjective SES and TSR quality are significant indicators or mediators of life satisfaction. This study aims at determining the direction of these variables in terms of student well-being, with a specific focus on how they differ between different demography groups within school environments. In addition, the research is aimed at providing accurate information that could be useful in developing curriculum strategies and interventions designed to increase students' outcomes and promote equality of learning environments.

2 Method

2.1 Procedure and participants

Trained research assistants (master's students of psychology) went to high schools in Northern Italy to collect data. Prior to data collection, these schools were contacted through the research assistants' personal network and public contact information. After the research assistants obtained the consent of the school principal, they visited the school. Before completing the questionnaire, the consent form was signed by the participants. They were informed that their answers would only be used for research purposes without revealing their identity. Participation in this study was voluntary and could be withdrawn at any time. The procedure was approved by the ethic committee at the authors affiliated university. The final sample comprise of 806 high school students (468 girls, 58.1%). The mean age of them was 16.82 years ($SD=1.54$), ranging from 14 to 19 years. The dataset also included information on whether participants lived with their biological parents. The inclusion of non-biological parental relationships was noted to see the potential attitudes of familial support and stability that may arise in relation to adolescents' teacher-student relationships and life satisfaction. The inclusion of this variable allows for further exploration of family dynamics in terms of socioeconomic and relationship factors. The majority of participants ($n=734$, 91.1%) came from families with two biological parents. Moreover, parental education level was included as a covariate to control for potential confounding effects on the relationships examined in this study. Parental education is widely documented as a correlate of adolescent' subjective socioeconomic perceptions, which may serve as mediating or moderating variables for teacher-student relationships and life satisfaction (Zhang et al., 2021). 31.9% of the mothers and 27.7% of the fathers had a bachelor's degree or higher. Parental education level was

included as a covariate to control for potential confounding effects on the relationships examined in this study. Parental education is widely documented as a correlate of adolescent' subjective socioeconomic perceptions, which may serve as mediating or moderating variables for teacher-student relationships and life satisfaction. By controlling for this factor, the relationship between teacher-student dynamics and life satisfaction may reflect true relationships and not be distorted by underlying socioeconomic influences. The average age of the mothers was 47.25 years ($SD=5.73$) and of the fathers was 50.77 years ($SD=6.09$).

2.2 Measures

2.2.1 Subjective socioeconomic status

The MacArthur Scale of Subjective Social Status-Youth Version (Goodman et al., 2001) was used to measure the subjective socioeconomic status of adolescents. Participants were asked to indicate on a drawing of a ladder with 10 rungs the ranking of their family in Italy in society and their own ranking at school in the community. "Imagine that this ladder represents the structure of Italian society. At the top of the ladder are the people who are best off. They have the most money, the best education and the most prestigious jobs. At the bottom are people who are the worst off... (society ladder)" and "Imagine that the ladder is a way of picturing your school. At the top of the ladder are the people in your school with the most respect, the highest grades, and the highest standing. At the bottom are the people who no one respects... (community ladder)". Higher rung represents higher subjective social status.

2.2.2 Teacher-student relationship

Teacher-student relationship was measured by the Student Perception of Affective Relationship with Teacher Scale (SPARTS, Koomen & Jellesma, 2015; Longobardi et al., 2016). Students were asked to rate each statement on a 5-point scale (1 = *No, that is not true*, 5 = *Yes, that is true*) based on how true the statement was in their own situation. The SPARTS measuring three subdimensions in teacher-student relationship, including closeness with eight items (e.g., "I think I have a good relationship with my teacher.", Cronbach's $\alpha=0.86$), conflict with 10 items (e.g., "I feel my teacher doesn't trust me.", Cronbach's $\alpha=0.80$), and negative expectations with seven items (e.g., "I feel sad if my teacher tells me that I do something wrong.", Cronbach's $\alpha=0.60$). The final scores for each dimension were the sum of all the item ratings in each subscale, with higher values representing a relationship with higher level of closeness/conflict/negative expectations between teachers and students.

2.2.3 Life satisfaction

The Satisfaction With Life Scale (SWLS) developed by Diener et al. (1985) was used to measure the life satisfaction of students. The SWLS is a scale with five items (e.g. "In most respects, my life comes close to my ideal" and "If I could live my life over again, I would change almost nothing"). Students had to rate each item on a

seven-point scale (1 = *strongly disagree*, 7 = *strongly agree*). The final score was calculated as the sum of all ratings, with a higher score indicating a higher level of life satisfaction. In the present study, the reliability of the SWLS was good (Cronbach's $\alpha=0.83$).

2.3 Data analysis

Data were analysed in SPSS 29.0 and Mplus 8.3 (Muthén & Muthén, 1998–2017). First, descriptive and correlative analyses were conducted to preliminarily explore the relationships between the variables studied. Then path analysis was adopted to explore the mediating roles of three dimensions in teacher-student relationship (i.e., closeness, conflict, and negative expectations) in the relation between subjective social status (both social ladder in Italy and community ladder at school) and student life satisfaction. Bootstrap procedure, which is one of the most accurate techniques (MacKinnon et al., 2004), was further used to examine the indirect effect. The 95% confidence interval (CI) of each potential indirect effects was generated with the bootstrap sample of 5000. The indirect effect was regarded as significant when zero was not included in its 95% CI (Shrout & Bolger, 2002). The following model fit indexes were adopted: (1) chi-square statistics and degrees of freedom; (2) Root Mean Square Error of Approximation (RMSEA); (3) Comparative Fit Index (CFI); (4) Tucker-Lewis index (TLI); and (5) Standardized Root Mean Square Residual (SRMR).

3 Results

3.1 Descriptive statistics and correlations

The descriptive and correlative results are shown in Table 1. Different family structures, depending on whether students live with their biological parents, do not appear to have a direct impact on life satisfaction, teacher-student relationships or subjective socioeconomic status. However, as a contextual variable, the inclusion of such information provides a basis for understanding how other environmental risk factors may indirectly influence adolescents' well-being. The mean of the society ladder rank ($M=6.79$, $SD=1.66$) was significantly higher than the mean of the community ladder

Table 1 Descriptive statistics and correlations of the variables

Variables	1	2	3	4	5	6
1. SSS_Italy (Society ladder)	—					
2. SSS_School (Community ladder)	0.32***	—				
3. TSR_Closeness	-0.01	0.15***	—			
4. TSR_Conflict	-0.02	-0.21***	-0.29***	—		
5. TSR_Negative expectations	0.03	-0.11***	-0.30***	0.39***	—	
6. Life satisfaction	0.24***	0.27***	0.32***	-0.26***	-0.24***	—
<i>M</i>	6.79	7.12	20.22	19.62	17.36	21.45
<i>SD</i>	1.66	1.55	6.70	6.89	4.64	6.65

Note. SSS=Subjective Social Status, TSR=Teacher-Student Relationship; *** $p < .001$

rank at school ($M=7.12, SD=1.55$), $t(805)=-5.13, p<.001, d=0.21$. This indicates a small effect size, suggesting that the difference between the two means is statistically significant but not practically substantial. The subjective social status on both society ladder ($r=.24, p<.001$) and community ladder ($r=.27, p<.001$) were positively associated with life satisfaction. Student perception on society ladder was not significantly related to their relationships with teacher, while their perceptions on community ladder at school was positively associated with closeness in TSR ($r=.15, p<.001$) and negatively correlated with conflict ($r=-.21, p<.001$) and negative expectations ($r=-.11, p<.001$) in TSR. In addition, closeness in TSR was positively related to life satisfaction ($r=.32, p<.001$), while conflict ($r=-.26, p<.001$) and negative expectations ($r=-.24, p<.001$) were negatively associated with life satisfaction.

3.2 Test for the mediating effects

Path analysis was conducted to explore the mediating effects of teacher-student relationship in the association between subjective social status and life satisfaction among high school students. The goodness of fit for the final model was satisfactory: $\chi^2/df=2.41$, $RMSEA=0.04$ (90% CI = [0.020, 0.063]), $CFI=0.97$, $TLI=0.91$, and $SRMR=0.02$. The goodness-of-fit indices suggest that the model fits the data well. As illustrated in Fig. 1, community ladder at school positively predicted closeness and negatively predicted conflict and negative expectations in teacher-student relationship, while society ladder did not predicted any dimensions of teacher-student relationship. Students with higher level of closeness with their teacher tend to have higher level of life satisfaction, whereas students with higher level of conflict and negative expectations in the teacher-student relationship tended to have low life satisfaction. In addition, the residential direct relationship between subjective social status (both society ladder and community ladder) and life satisfaction remained significant. All the 95% CIs for the indirect effects in the association between community ladder at school and life satisfaction did not include zero, indicating the significant indirect effects of teacher-student relationship in this association (See Table 2).

Fig. 1 The mediating effect of teacher-student relationship between subjective social status (society ladder and community ladder) and life satisfaction. Note. $N=806$; SSS=Subjective Social Status; the path coefficients were standardized; the dotted lines are nonsignificant paths; demographic variables (i.e., age, gender, family types) and objective SES indicator (i.e., parental education level) were controlled

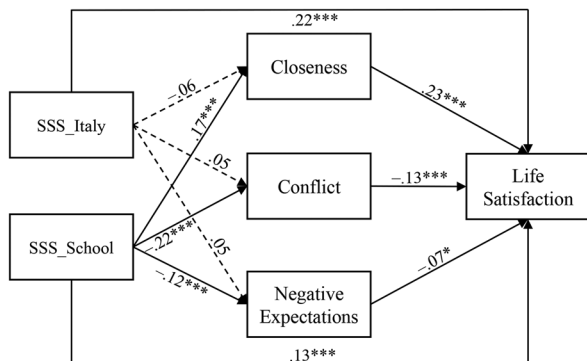


Table 2 Standardized indirect effects and their 95% confidence intervals

Indirect Path	Estimated indirect effect	95% CI	
		Lower	Upper
SSS_Italy→Closeness→LS	-0.013	-0.034	0.005
SSS_Italy→Conflict→LS	-0.007	-0.020	0.002
SSS_Italy→NE→LS	-0.004	-0.016	0.001
SSS_School→Closeness→LS	0.040	0.022	0.066
SSS_School→Conflict→LS	0.028	0.013	0.048
SSS_School→NE→LS	0.009	0.001	0.022

Note: SSS=Subjective Social Status, LS=Life Satisfaction, NE=Negative Expectations, CI=Confidence Intervals

4 Discussion

This study explores the connections, between how high school students perceive their SES, their relationships with teachers and their overall life satisfaction.

The educational level of the parents was included in the analysis as a covariate in this analysis to control for possible disruptive effects on the relationships examined in this study. Parental education, as a proxy for socioeconomic resources, shapes adolescents' subjective socioeconomic perceptions, which are then indirectly manifested in the dynamics of teacher-student relationships and life satisfaction (Timar-Anton et al., 2023). The study controls for such variables, which serves to separate the effects of teacher-student dynamics on life satisfaction from broader socioeconomic differences and thus achieve greater analytic clarity. Differences in family structure, based on whether students lived with their biological parents, did not appear to exert a direct influence on life satisfaction, teacher-student relationships, or subjective socioeconomic status. However, as a contextual variable, knowledge of such parental or family descriptions provides insight into how other environmental risk factors may interact to ultimately affect adolescents' well-being (Graziano et al., 2024; Pössel et al., 2018).

It shows that students personal views of their SES play a role in shaping their life satisfaction echoing recent research suggesting that how individuals see themselves economically can have a stronger impact on their mental and educational well-being, than objective measurements (Guo et al., 2020; Quon & McGrath, 2014). Students who view themselves as lower on the scale may struggle with feelings of not measuring up potentially leading to reduced levels of contentment (Cavioni et al., 2021; Martin-Storey & Crosnoe, 2014; Martin-Storey et al., 2018).

Positive TSR is an important counterbalance to the negative effects of low subjective SES on life satisfaction. The nurturing nature of these relationships plays a crucial role in improving students' well-being, as evidenced by recent studies (Marquez & Long, 2021; Yan et al., 2021). These studies show how, for students facing challenges related to perceptions of social disadvantage, supportive interactions between teachers and students can contribute to a sense of safety and belonging.

More specifically, the results of our study on the mediating role of TSR emphasise how positive interactions between teachers can mitigate the negative effects on life satisfaction caused by subjective SES. The results of this mediation show that students who perceive themselves as having positive relationships with teachers experience higher levels of life satisfaction regardless of their economic background. This

finding underscores the need for professional development programmes that provide teachers with the necessary skills to build effective and empathetic relationships with students, as this is critical in classroom practise (Cavioni et al., 2021; Lee & Lee, 2023).

Furthermore, our analysis shows that the quality of TSR is not directly influenced by broader societal perceptions of SES. This suggests that educational institutions are able to act as a buffer against broader societal social inequalities and enable students to escape them (Bergold & Steinmayr, 2023). These findings have significant implications for educational policies aimed at creating an inclusive and supportive school climate in which all students are encouraged to develop equity and respect for one another, Povedano-Diaz et al. 2020, 2020 Much of the literature agrees with our analysis that a positive school environment provides many benefits for students, including better academic performance, improved social skills and an increase in self-esteem (Bergold & Steinmayr, 2023; Povedano-Diaz et al., 2020; Wang & Degol, 2016).

The study's comprehensive examination of the complex interaction between subjective SES, TSR and life satisfaction provides valuable insights into how educational institutions can be optimised to promote the well-being. Although our findings are consistent with and extend previous research, we specifically highlighted the role of TSR as a facilitator for improving student life satisfaction through targeted relationship-building efforts, while providing new perspectives on how teachers can actively contribute to this improvement. This is in line with existing literature that highlights the importance of positive relationships between teachers and students in promoting student engagement, motivation and overall health (Hamre & Pianta, 2003; Hughes et al., 2008).

5 Limitations and future directions

The interaction between subjective SES, TSR and life satisfaction of high school students is illustrated by the results of our study. However, these results should be interpreted with caution given methodological limitations. First, the study's sample focuses on high school students from northern Italy, representing a deliberate delimitation aligned with the study's objectives. However, this choice had the advantage that the analysis was culturally and regionally congruent, which increased the internal validity of the results. Such a delimitation also makes it more difficult to generalise to other cultural and geographical areas. For future research, the use of statistical sampling methods to increase representativeness and examine generalizability across a variety of cultures would be useful.

In addition, the study was limited to high school students. In order to gain a deeper understanding of developmental influences and their complexity, future research should also cover other developmental phases such as late adolescence and young adulthood.

Possible biases such as misinterpretation of questions, recall errors and social desirability effects arise from the fact that the study is based on self-report. To mitigate these problems, the inclusion of third-party comments or other assessment tools in further studies could be helpful.

Furthermore, the cross-sectional design of this analysis limits our ability to observe changes over time or to establish causal relationships between SES relationships, TSR and life satisfaction. Longitudinal studies would provide a deeper insight into the development and interactions of these relationships.

The study did not examine possible mediating or moderating variables, although it focused on the direct relationships between SES, TSR and life satisfaction. A more detailed analysis of factors influencing students' well-being and educational outcomes could be done through further studies including these variables.

This study has significant implications for educational policy and practice as it suggests that targeted interventions to improve student' life satisfaction can have a significant impact on increasing TSR and reducing perceived inequalities. In order to identify effective strategies to promote a supportive educational environment, future research should explore these dynamics in more depth and be able to extend the applicability and impact of the findings.

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Data availability The data that support the findings of this study are available from the corresponding author upon reasonable request.

Code availability For this research we used SPSS 29 software available from our University.

Declarations

Ethical approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

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

Competing interests The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this study.

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