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The influence of resilience and future orientation on academic achievement during the transition to high school: the mediating role of social support

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ABSTRACT

This study applies Bronfenbrenner's bioecological systems theory to analyse how social support impacts resilience, future outlook, and academic performance during high school transition. Self-report questionnaires were completed by 958 high school students (54.5% female) ages 13–1 ($M = 13.72$, $SD = 0.47$). After descriptive and correlational analyses, path analysis explored the mediating function of general social support and its specific manifestations (from family, friends, and significant others). The findings indicate a strong positive correlation among resilience, social support, and academic success, with resilience directly enhancing academic achievement. Both general social support and support from family, friends, and significant others are key in mediating the effects on achievement. This emphasizes the relevance of social networks in educational performance and the need for interventions to build social relationships to promote student resilience and future planning. Long-term consequences of these determinants on educational trajectories should be studied, taking cultural differences into account.

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School transitions; future orientation; resilience; social support; academic achievement

In the educational field, normative school transitions refer to a student's passage from elementary school to middle school, from middle school to high school, and from high school to college or university (Benner et al., 2017; Queen, 2012). Researchers recognize high school transition as being the most challenging and stressful type (Longobardi et al., 2016; Queen, 2012). For example, in Italy, at the transition from middle school to high school, students often experience a physical change of school environment to a bigger school building and a change of the class group. Moreover, the range of academic subjects increases and the workload becomes bigger. All these changes present the potential risk for a decline in learning motivation and academic achievement for adolescent students (Kiuru et al., 2020), which can lead to a decrease in engagement. They also pose a challenge to socioemotional skills, such as the ability to regulate emotions, impulses, and behaviours (Lin et al., 2022).

Academic achievement, meanwhile, refers to the level of knowledge, ability, and skill that students gain over the course of their educational life (Urruticoechea et al., 2021). The literature shows that several factors contribute to academic achievement, including resilience (Morales & Trotman, 2005), future orientation (Lisnyj et al., 2023; Seginer, 2009), and social support (Kiuru et al., 2020). However, the mechanisms underlying these relationships have received little empirical investigation. The purpose of this study is to examine how resilience, future orientation, and social support affect students' academic achievement in the first semester of high school.

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The current study is grounded in Bronfenbrenner's bioecological system theory, which views individuals and the environment exerting mutually influential relationships over time (Bronfenbrenner, 1986; Bronfenbrenner & Morris, 2007; Veiga et al., 2023). The theory focuses on the interactions between Process, Person, Context, and Time (PPCT) in influencing the development of individuals, their behaviours, and their academic outcomes (El Zaatari & Maalouf, 2022). The first component, the *process*, includes all interactions (from the proximal to the distal) that occur between developing individuals and their surroundings. The *person* is the developing individual considered as an active agent in their development, which is influenced by their environment – and, at the same time, the person influences the context in which they are living. The third component of the PPCT model is the *context*, which covers all the ecological systems (microsystem, mesosystem, exosystem, and macrosystem) theorized by Bronfenbrenner. Specifically, according to this theory, the proximal processes (i.e. interactions between adolescents and the microsystem, which encompasses family, peers, and school) are the main drivers of human development. The final component of the model is *time*, which can affect persons, relationships, settings, and all the aspects of the context. This component includes both chronological time and events, such as school transitions (Bronfenbrenner, 1993).

Resilience in school transition

It is well-documented in the literature that individuals transitioning from middle school to high school education experience stress as a consequence of their adaptation to a new environment (Longobardi et al., 2016; Queen, 2012). Resilience is traditionally described as the ability to resist or 'bounce back' from negative emotional experiences (Luthar et al., 2006) and adapt flexibly to stressful events (Lazarus, 1993; Puolakanaho et al., 2023). In the literature, resilience has been studied as both a stable trait (Hu et al., 2015) and as a dynamic process that allows the person to maintain competent functioning despite stress and psychological threats (Morales & Trotman, 2005). This construct has often been linked to change and has also been used to indicate one of the factors influencing young people's adjustment to school transitions (Bozzato & Longobardi, 2021; Langenkamp, 2010). Thus, in this study, resilience is examined in an educational setting and defined as the capacity for or the outcome of positive adaptation during stressful events (Lazarus, 1993), such as the high school transition may be for students (Bozzato & Longobardi, 2021).

Compared to highly resilient students, students with low resilience have significantly lower achievement in maths and reading (Sattler & Gershoff, 2019). Resilient students, on the other hand, are able to use their own resources, ask for help when needed, plan, make decisions, and follow through (Sattler & Gershoff, 2019). Resilience provides a protective factor for individuals despite environmental adversity, experiences, or conditions (e.g. low socioeconomic status or being a member of an ethnic minority), which in turn may predict lower academic achievement (Kiuru et al., 2020; Morales & Trotman, 2005; Vasilopoulos et al., 2023; W. Ye et al., 2021).

Resilient students, compared to non-resilient students, have the capacity to efficiently use the resources that the family (Clark, 2015) and the educational context (S. Mastrokouskou & Crawford-Lee, 2023; S. K. Mastrokouskou et al., 2022) provide them in terms of social norms, emotional support, and opportunities for community involvement (Masten et al., 1990). In addition, resilient students have been shown to be able to establish and maintain positive relationships with teachers and friends (Lessard et al., 2014). Academic resilience is associated with a sense of belonging and connectedness within the family, school, and social group according to many studies (W. Ye et al., 2021).

Future orientation in adolescence

While there is no agreement among scholars with regard to a unique definition of future orientation, the term typically refers to the ideas, thoughts, and feelings that individuals direct towards their own future, including the ability to imagine different possible scenarios

(Karali et al., 2023; Stoddard et al., 2011). It can also be defined as a person's attitude towards his or her future (Seginer, 2009). Some scholars have studied the images and representations that individuals have of themselves in the future, or 'possible selves' (Markus & Nurius, 1986), that is those elements of the self-concept representing what we could become, what we would like to become, and equally important, what we are afraid of becoming.

Developmental research has shown that future orientation is important at every stage of life, from childhood (Bozzato, 2020) to adult and old age (Smith & Freund, 2002); however, in adolescence, it is an area of study of great interest because it is considered an important developmental task for adolescents, providing them with a basis for setting goals and planning for the future (Li et al., 2023; Seginer, 2003). In fact, adolescents need to build their identity, and in this process the ability to create a self-image projected into the future is essential. Positive future expectations can facilitate a successful transition into adulthood (Schmid et al., 2011).

There is been some research to address the cognitive, motivational, and behavioural aspects of future orientations (Seginer, 2009). In response to prior studies that adopted a unidimensional approach with regard to future orientation, Seginer et al. (1991) proposed the three-component model for future orientation. This is a multiple-step model in which the motivational component of future orientation (future goals and interests associated with the planning of events) affects the other components: cognitive (future images in different contexts, including hopes and fears) and behavioural (the ability to explore future options and to engage in decision-making). In turn, the cognitive component affects the behavioural component. By taking into account the intrinsic and external motivation factors as described in Ryan and Deci's theory of self-determination (Ryan & Deci, 2017, 2020), this model can be enhanced. The main role of intrinsic motivation, driven by internal desires and curiosity, as well as external rewards and pressures, is to shape the motivational component of a future orientation.

Future orientation has been linked in the literature to both school transitions and academic achievement. For many adolescents, the transition to high school is a long-awaited and actively imagined change (Newman et al., 2007), and the passage to a new school encourages youth to think about, plan for, and work towards their goals, supporting future orientation (Shubert et al., 2020). According to several researchers, future orientation is particularly relevant to academic achievement (Hejazi et al., 2011; Seginer, 2000). An association between the motivational and behavioural components of future orientation and academic success has been documented by various scholars. For example, Hejazi et al. (2011) investigated future orientation regarding academic performance in 193 Iranian adolescents, finding that participants with high levels of future orientation showed more positive expectations regarding their future academic path and demonstrated behaviours that were functional in achieving their academic goals. It's important to note the different forms of motivation as per self-determination theory, where intrinsic motivation is rooted in internal satisfaction and personal interest, while extrinsic motivation arises from external factors like rewards or social expectations. These distinctions are essential for understanding the influence of transition orientation on student performance (Ryan & Deci, 2017).

Seginer (2000), investigating a population of 135 Israeli adolescents, highlighted that students with high scores on scales related to the motivational and behavioural dimensions of future orientation expressed higher positive expectations regarding their academic performance. They also demonstrated behaviours that were appropriate in achieving their set academic goals.

From the perspective of possible selves (Markus & Nurius, 1986), Zhu and Tse (2016) found that adolescents' projected images of themselves were mainly focused on the areas of education and career. Another study revealed that academic possible selves can support adolescents in terms of their motivation and behaviours in the academic domain, leading to better performance aspirations (Destin & Oyserman, 2009). Other research conducted among adolescents confirmed that positive future orientation is positively associated with high academic motivation, good academic performance, the ability to organize and plan actions in that direction, and a sense of integrated identity (Andretta et al.,

2014). For students with high or moderate self-efficacy, attitudes towards the future also play a mediating role between learning strategies and academic achievement (Mazzetti et al., 2020).

Adolescents' ability to successfully orient themselves towards the future is more developed when they feel well-connected and integrated into their belonging contexts such as the family environment, peer group, and school context (Wong et al., 2019). For example, some research has investigated the link between future orientation and perceived family support. Gerard and Booth (2015) observed that adolescents consider the family as the most important resource regarding future planning: Teenagers who were more optimistic and had more positive future orientation perceived their parents as supportive and encouraging; those less optimistic about the future reported higher parental control. Seginer et al. (2004) analysed future orientation in relation to parental support in a group of 458 Israeli Jewish adolescents, finding that participants with high scores on the motivational scale of future orientation reported a perception of greater support and acceptance from their families, and exhibited a more future-oriented temporal dimension. Similar results were also found by Seginer and Shoyer (2012) when investigating the same topic among 203 Israeli Jewish adolescents. Research focused on attachment theory identifies as well an association between future expectations and academic achievement on the one hand, and positive, supportive relationships with parents, peer friends, and teachers on the other (Wong et al., 2019).

Social support and school transitions

Social support is another variable that has captured the interest of several researchers who aimed to understand the factors influencing academic success in the teenage years (Kiuru et al., 2020) with respect to high school transition (Langenkamp, 2010). Social support is a broad concept that has been traditionally defined as the experience of being respected, valued, and loved by others especially when facing difficulties (Milienos et al., 2021).

This study is based on the Zimet et al. (1988) social support model, which posits the existence of three distinct sources of social support: family, friends, and significant others (which can include teachers and other adults). The use of the Zimet et al. (1988) model in the current study is supported by evidence of the influence that family support (Chen, 2005), peer support (Fuligni et al., 2001), and teacher support (Chen, 2005) have on academic success. Moreover, according to the bioecological systems theory (Bronfenbrenner & Morris, 2007), school transitions and academic success are not individual processes, but the result of multiple influences (e.g. peers, family, or school) on an adolescent's behaviour (Bronfenbrenner, 1993).

When the educational and social environment undergoes changes, social support from family and peers has a significant role in socioemotional and academic adjustment (Benner, 2011). In fact, social support, together with resilience, is a coping resource that can mitigate the negative effects of stress (Wilks & Spivey, 2010) and can play an important role in improving students' academic outcomes (Liew et al., 2018). Social support is also a protective factor against traumatic events or stressful situations, such as racial microaggressions (Salami et al., 2021) or exposure to pandemic risks (Z. Ye et al., 2020). In addition, school, peer, and family support during school transition increases resilience among academically at-risk youth (Kuperminc et al., 2020), also because the presence of high-quality interpersonal relationships promotes higher academic achievement through increased academic well-being (Kiuru et al., 2020).

In the family context, parental support predicts higher motivation and academic achievement in adolescent students and is associated with lower levels of school test anxiety (Song et al., 2015). Similarly, social support in the school context from teachers and peers is positively related to academic achievement (de la Iglesia et al., 2014). Social support from friends and peers provides a buffer against maladaptive motivation that predicts weaker performance-avoidance goals and lower test anxiety (Song et al., 2015) and has a protective role against low academic outcomes during high school transition (Langenkamp, 2010).

In addition, social support from friends has been found to promote student well-being and resilience, as well as reducing academic stress (Wilks & Spivey, 2010). A recent study examined the influence of social support on students' academic resilience (ages 13 to 15) found that family, peer, and teacher support were associated with resilience and higher academic achievement (Fang et al., 2020).

Parent – school and peer – teacher relationships are also important in engaging youth to develop a vision for a meaningful future that is forward-looking and planful, with the goal of academic engagement (Hill et al., 2018). Research has highlighted that experiences of marginalization can influence the development of self-inclusive, strong, and articulated goals in adolescents (Sumner et al., 2018) and that victims of cyberbullying and bullying in school are more likely to report a pessimistic future orientation (Longobardi et al., 2021). Perceptions of a positive future, on the other hand, are associated with strong social relationships (Schmidt et al., 2016), as the development of an individual's future expectations is dynamically linked to his or her relationships with significant others such as family members or friends (Iovu et al., 2018). The adolescents who develop positive future orientation are also those who possess positive social relationships and a sense of connectedness in the school context, as well as good student – teacher relationships (Crespo et al., 2013). Hope and future expectations are also linked to peer support (Iovu et al., 2018). Similarly, hopes for the future (Iovu et al., 2018) and a more positive sense of future orientation (Crespo et al., 2013) are associated with perceptions of warm, supportive, and reliable interactions between adolescents and their parents, who provide models for positive behaviours that adolescents later incorporate into their own self-concept.

The current study

Resilient individuals tend to possess robust social networks, which serve as great sources of support during times of stress and difficulty (Lessard et al., 2014). Moreover, in facing school transitions, the link between resilience, as an internal factor (Langenkamp, 2010), and social support, as an external factor (Newman et al., 2007) has been well-documented. This suggests that resilient individuals would report higher levels of perceived social support, compared to non-resilient individuals who have similar actual social support. Based on these observations, we hypothesized that perceived social support could be a potential pathway through which resilience influences academic achievement.

Furthermore, in the literature, future orientation is a concomitant of perceived social support because educational goals are usually set based on the adolescent's expectations influenced by their social context (Wong et al., 2019). The teenagers with greater academic aspirations are those who perceive a supportive family and school environment (Crespo et al., 2013). As such, it is reasonable to expect that more future-oriented adolescents are more likely to report higher levels of perceived social support than less future-oriented individuals who have the same actual social support.

Given these theoretical premises, the first objective of the current study was to examine whether general social support mediated the predictive influence of resilience and future orientation on high school grade point average (GPA). It was hypothesized that social support would mediate the relationship between resilience and future orientation on academic achievement, controlling for age, gender, and school type. This was posited because adolescents with low levels of resilience, future orientation, and social support typically obtain lower grades than peers with higher levels of resilience (Sattler & Gershoff, 2019), future orientation (Hejazi et al., 2011; Seginer, 2000), and social support (Kiuru et al., 2020).

The second objective was to explore the mediating role of specific aspects of social support (i.e. from family, friends, and significant others) in the predictive influence of resilience and future orientation on academic achievement once the variance explained by age, gender, and school type had been controlled for.

The two purposes of the study were drawn based on the bioecological systems theory (Bronfenbrenner, 1986), which strongly implies the interplay of personality traits, context, and

life circumstances in the development of various aspects of behaviour, including academic outcomes.

Method

Participants

A convenience sample was used in the current study. All schools contacted by the researchers agreed to participate in the study. The inclusion criteria in the sample were: (a) residing in Italy, (b) being a first-year high school student, (c) having a sufficient knowledge of Italian, and (d) being surveyed voluntarily. The exclusion criteria were: (a) being an exchange student (not residing in Italy), (b) being a retained student who is repeating their first year of high school, and (c) not being completing the online survey in its entirety.

Of 1,148 individuals who were initially recruited and agreed to participate, 958 (90.4%) completed the survey and were included in this study. Participants (54.5% female, $n = 522$), aged 13 to 15 years ($M = 13.72$, $SD = 0.47$), were recruited in three different types of high schools in a medium-sized city in northern Italy: university preparatory high school ($n = 332$, 34.7%), technical school ($n = 387$, 40.4%), and vocational school ($n = 239$, 24.9%). Only 5% of the students had a foreign nationality.

Procedure and ethical approval

An online structured questionnaire was used in this study. Participants completed the survey in their schools using computers in the presence of a teacher and research assistants. Before completing the questionnaire, participants and their parents consented to the research and agreed to participate voluntarily in the study, to have their data aggregated and anonymized, and to allow their data published in scientific publications. No compensation was paid, and the study was conducted in accordance with the ethical guidelines of the Italian Psychological Association and the guidelines of the university involved in the study. Data were collected at the end of the first semester of the school year.

Measurement

Demographic information

Participants provided information on their demographic data (age, gender, nationality, and social status, which was measured with the MacArthur Subjective Social Status Scale – Youth Version (Goodman et al., 2001), using a numbered scale with 10 levels), type of school (high school, technical school, or vocational school), and family structure (mother and father, mother only, father only, or no parents but other relatives, no relatives live in the participant's household).

Future orientation and resilience

Design My Future (DMF) (DiMaggio et al., 2016) is an Italian questionnaire that was used in this study to assess resilience and future orientation. It consists of 19 items with a response scale ranging from 1 (*It describes me not at all*) to 5 (*It describes me very well*). An 8-item subscale measures the participant's resilience (e.g. 'Dealing with stressful situations has made me stronger'), while an 11-item subscale measures the participant's future orientation (e.g. 'I often think about building a positive future for myself'). In the current sample, the reliability of DMF was good ($\alpha_{\text{resilience}} = .71$, $\alpha_{\text{future orientation}} = .79$). The sums of the items in each subscale were calculated as final scores separately, with higher values indicating higher level of resilience or future orientation.

Social support

The Multidimensional Scale of Perceived Social Support (MSPSS) (Zimet et al., 1988) consists of 12 items grouped into 3 factors: Family (e.g. 'My family really tries to help me'), Friends (e.g. 'I can talk about my problems with my friends'), and Significant Others (e.g. 'There is a special person with whom I can share joys and sorrows'). Participants were asked to indicate their level of agreement with each item on a 7-point Likert scale ranging from 1 (*Strongly disagree*) to 7 (*Strongly agree*). The reliability, validity, and utility of this scale in the Italian adolescent population has been demonstrated in many previous studies (e.g. Fabio & Kenny, 2012). In the current sample, the Cronbach's α coefficient of MSPSS was .78. The sums of the individual subscales and the overall scale were calculated, with higher values indicating higher perceived general/specific social support.

Academic achievement

Self-reported GPA was used as a measure of participants' academic achievement. Participants were asked to report their GPA from the preceding term. In the Italian school system, grades range from 0 to 10, with 6 being the minimum grade needed to pass an exam.

Data analysis

The data were analysed in Statistical Package for Social Sciences (SPSS) software and Mplus 7.0. First, to primarily explore the relationship between variables, descriptive and correlational analyses of the demographic and main studied variables were performed using the SPSS, version 26.0. Second, to examine the mediating role of general social support, path analysis was conducted in Mplus 7.0. Then, to further explore the potential parallel mediating role of specific social support (i.e. family, friends, and significant others), path analysis with multiple mediators was also conducted in Mplus. Finally, the bootstrap method was used to confirm all mediation effects. The bootstrap sample size was 5,000, and if the value of zero is not within the 95% confidence interval, the mediating effect is significant.

Results

Descriptive and correlational analyses

Most participants (54.9%) believed their family had an average social status, 25% had a high social status, and 19.9% had a low social status. Participants were also asked to indicate their family structures, which were assessed with four dummy-coded items, with each item answered yes/no: (1) mother and father live in the participant's household; (2) mother but not father lives in the participant's household; (3) father but not mother lives in the participant's household; (4) no parents but other relatives live in the participant's household; (5) no relatives live with the participant. The results show that most of the participants (82.2%) live with both biological parents, 12% live only with the mother, and 4.3% live only with the father. Only 0.9% reported living without parents and 0.6% do not live with relatives at all.

The results of the descriptive and correlational analyses are shown in [Table 1](#). Female students ($r = 0.09, p < .01$) and older students ($r = 0.08, p < .05$) tended to have higher GPAs, and older students tended to have higher levels of perceived general social support ($r = 0.08, p < .01$), social support from friends ($r = 0.12, p < .001$), and social support from significant others ($r = 0.07, p < .05$). Therefore, student gender and age were included as control variables in the following analyses. In addition, the one-way analysis of variance (ANOVA) revealed that the main variables examined (except for future orientation) differed significantly among students from different types of schools (i.e. high school, technical school, and vocational school), with F values ranging from 3.36 to 21.12. Therefore, school type was also included as a controlled variable in the mediating analysis. In addition, the main variables studied were all significantly and positively correlated with each other.

Table 1. Descriptive analysis and correlations of the variables.

Variables	1	2	3	4	5	6	7	8	9
1. Gender	—								
2. Age	.01	—							
3. Future orientation	-.05	.06	—						
4. Resilience	.03	.05	.32***	—					
5. SS_Family	-.05	.01	.49***	.53***	—				
6. SS_Friends	-.04	.12***	.31***	.52***	.32***	—			
7. SS_Others	.03	.07*	.36***	.51***	.39***	.67***	—		
8. SS_General	-.02	.08*	.49***	.65***	.71***	.83***	.86***	—	
9. GPA	.09**	.08*	.32***	.52***	.39***	.65***	.61***	.69***	—
<i>M</i>	1.54	13.72	23.70	33.41	15.89	16.61	16.06	48.56	6.05
<i>SD</i>	0.50	.047	4.59	5.33	4.16	4.11	4.20	9.95	1.12

Gender was coded as 1 = male, 2 = female, SS = Social support. * $p < .05$, ** $p < .01$, *** $p < .001$.

Specifically, students' future orientation and resilience were both positively associated with general/specific social support and students GPA. GPA was positively related to both general social support ($r = .69$, $p < .001$) and specific social support (r ranging from .39 to .65, $p < .001$).

Mediating analysis

First, the mediating role of general social support in the relationship between future resilience/future orientation and GPA was examined. As shown in Figure 1, both resilience and future orientation were positively correlated with general social support, which in turn was positively related to students' GPA. The direct residual effect between resilience and GPA was significant, while it was not significant between future orientation and GPA. Next, the mediating role of specific social support was also examined. As shown in Figure 2, future resilience and future orientation were positively correlated with all three subdimensions of social support, which in turn were positively related to GPA. The remaining direct effects remained unchanged with the overall social support model. Finally, all 95% confidence intervals (CIs) of the placement paths in Figures 1 and 2 were examined. As shown in Table 2, all 95% CIs did not include zero. Therefore, general social support, as well as its three specific forms, was the significant mediator in the relationships between future orientation/resilience and students' GPA.

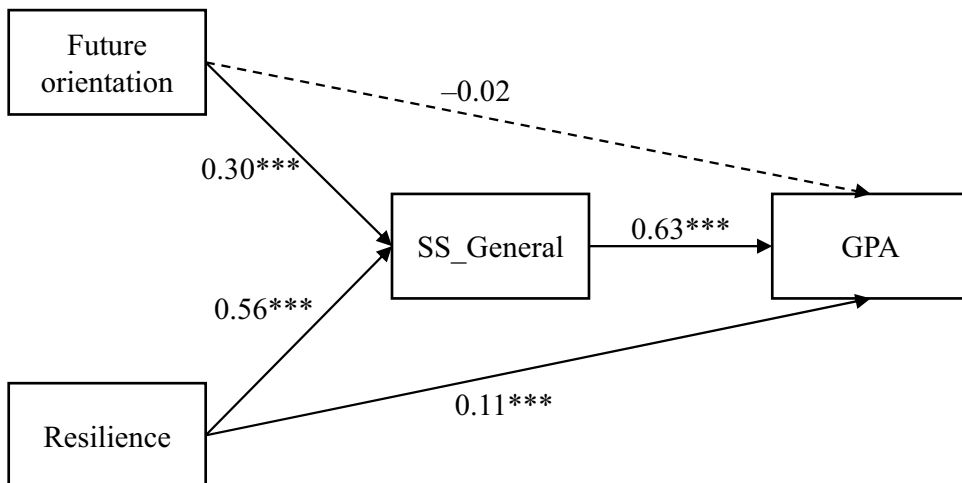


Figure 1. The mediation model of general social support. SS = Social support. Student's gender and age, as well as their school type, were included as controlled variables, but they are not illustrated in the figure to make the picture concise. All the regression coefficients are standardized. * $p < .05$, ** $p < .01$, *** $p < .001$.

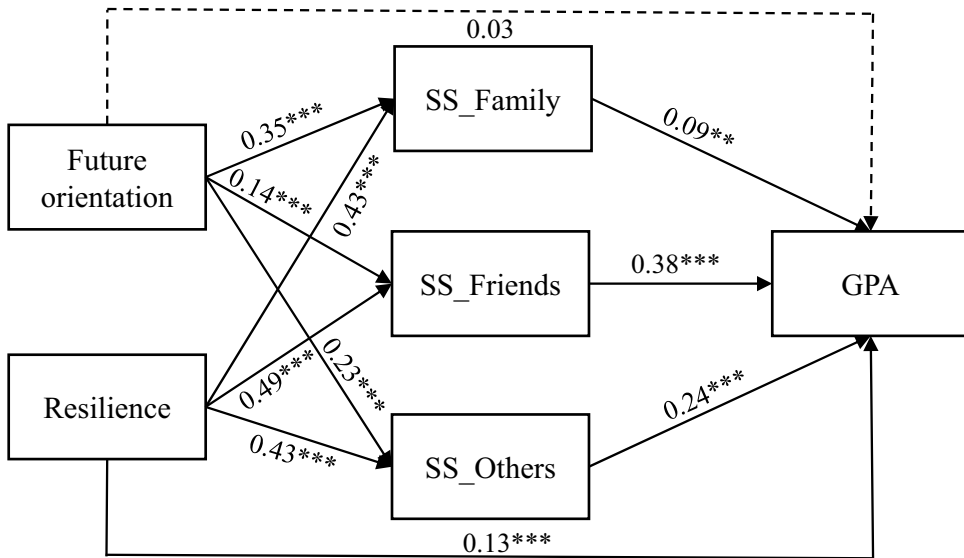


Figure 2. The mediation model of specific social supports. SS = Social support. Student's gender and age, as well as their school type, were included as controlled variables. The correlations among three specific social supports were added. The controlled variables and the correlations are not illustrated in the figure to make it concise. All the regression coefficients are standardized. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 2. Standardized indirect effects and 95% confidence intervals.

Model path	Estimated effect	95% CI	
		Lower	Upper
General social support			
FO → SS_General → GPA	0.190	0.158	0.225
Re → SS_General → GPA	0.353	0.314	0.393
Specific social support			
FO → SS_Family → GPA	0.032	0.011	0.057
FO → SS_Friends → GPA	0.056	0.041	0.074
FO → SS_Others → GPA	0.055	0.040	0.074
Re → SS_Family → GPA	0.039	0.015	0.067
Re → SS_Friends → GPA	0.187	0.160	0.218
Re → SS_Others → GPA	0.105	0.074	0.137

FO = Future orientation; SS = Social support; Re = Resilience; CI = confidence intervals.

Discussion

The main purpose of the present study was to examine whether general social support (from family, friends, and significant others) mediated the predictive influence of resilience and future orientation on academic achievement during high school transition, as resilient students are more likely to establish and maintain positive relationships (Lessard et al., 2014), and the development of their future expectations is dynamically linked to relationships with key caregivers (Iovu et al., 2018). This, in turn is associated with better student academic outcomes (Kiuru et al., 2020; Liew et al., 2018). To measure this, preliminary descriptive and correlational analyses were conducted, and the results showed that the main variables studied (resilience, future orientation, social support, and GPA) were all significantly and positively correlated with each other. This finding was expected based on the bioecological system theory (Bronfenbrenner & Morris, 2007) that posits a bidirectional interchange between the characteristics of the person (such as resilience and future orientation) and the context (social support), which affects different aspects of behaviour (including academic outcomes) in specific life circumstances such as school transition.

For the controlled variable of gender, it was found that female students tended to have higher academic achievement. This confirms several previous studies that have found that female students tend to perform more strongly academically in late childhood and adolescence than their male peers (Sun et al., 2022). Previous research has also shown that boys are less engaged, enjoy school less, and require more academic effort than girls, which could affect their academic performance (Virtanen et al., 2019).

In terms of age, older students tended to have higher academic achievement. This is supported by many studies that have demonstrated the influence of age on academic performance (Urruticoechea et al., 2021). We found that older students in our sample reported higher levels of perceived general social support and social support from friends and significant others (e.g. teachers). While it is not surprising that family is a source of constant support that can occur over extended periods (Bronfenbrenner & Morris, 2007), we can hypothesize that other forms of social support may change with age. In fact, there is some evidence that social skills gradually evolve during growth (Sørli et al., 2021), and this cultivated social competence may explain the higher levels of perceived social support reported by the older students of our sample compared to their younger counterparts. Given these premises, it is also reasonable to suppose that, at least in the sociocultural context of the study, older students reported better academic performance and higher levels of perceived social support because they had adapted better to the new school environment.

Moreover, the main variables studied (with the exception of future orientation) differed significantly among students in the three different types of schools. This result is consistent with past research showing that the likelihood of being resilient and attaining high academic achievement (Suna et al., 2020) differ among students according to school type. Therefore, school type was also included as a controlled variable in the placement analysis.

In the present study, resilience (but not future orientation) was directly related to academic achievement. This means that resilience alone, but not future orientation alone, had a predictive power with regard to academic achievement in our research. This finding is consistent with previous studies that found a direct influence of resilience on academic achievement (e.g. Deb & Arora, 2012; Sattler & Gershoff, 2019), but not with the studies showing a direct influence of future orientation on academic success (e.g. Destin & Oyserman, 2009; Hejazi et al., 2011). Our result may be explained by the fact that in the specific context of the high school transition, characterized by uncertainties and doubts for the future, future orientation alone may not directly lead to academic achievement. Instead, both resilience and future orientation were positively correlated with general social support, which in turn was positively associated with students' academic performance. This finding is in line with past research confirming the importance of resilience and future orientation on students' academic achievement, and highlights the mediating role that general social support can play in such relationships during the transition to high school. Specifically, several previous studies have found resilience to be an important factor in adolescent academic success (Deb & Arora, 2012), and have shown that highly resilient students have significantly higher maths and reading achievement compared to their classmates with lower levels of resilience (Sattler & Gershoff, 2019). Similarly, students' future orientation was shown to be particularly relevant during developmental and transitional periods (Schmid et al., 2011), as it provides individuals with a foundation for setting goals and planning for what lies ahead (Seginer, 2003). In addition, several studies have found that social support positively affects students' academic achievement (Liew et al., 2018), including during school transition, by improving students' overall well-being (Kiuru et al., 2020).

The second purpose of the present study was to examine the mediating role of the specific component of social support (i.e. from family, friends, and significant others). Both resilience and future orientation were positively correlated with all three subdimensions of social support, which in turn were positively related to academic achievement. The remaining direct effects were unchanged in the general social support model. These outcomes are consistent with earlier research and add to the literature the contribution of specific social support from family, friends, and significant others in mediating the relationship between resilience/future orientation and students' academic performance

during high school transition. Specifically, previous studies have found that parental support predicts higher motivation and academic achievement in adolescents (Song et al., 2015) and promotes academic well-being during school change (Kiuru et al., 2020), and that social support in the school context is positively related to academic achievement (de la Iglesia et al., 2014; Ghaith, 2002). In addition, friend support provides a buffer against maladaptive motivation, predicting weaker performance-avoidance goals and lower test anxiety (Song et al., 2015) and playing a protective role against poor academic outcomes during school change (Kiuru et al., 2020; Langenkamp, 2010).

All our findings are consistent with bioecological systems theory (Bronfenbrenner, 1986; Bronfenbrenner & Morris, 2007), which purports that the interactions between the different systems that constitute a person's context influence his or her development and academic performance over time. Specifically, the interactions between developing individuals in the microsystem (such as family, peers, and school) are crucial in the explanation of behaviour and human development.

Limitations and future research

Some limitations of the present work should be discussed. The data are cross-sectional, so it is not possible to draw longitudinal correlations and examine the extent to which variables predict other variables over time, as well as directionality in terms of associations between variables. In addition, several studies have pointed to some biases that may result from using mediation in a cross-sectional framework (Maxwell et al., 2011). Therefore, future researchers could use a longitudinal design to test these longitudinal relationships and their directionality, which could help us understand how the relationships between them evolve over time. In addition, social desirability could have biased the results as well as our findings. Measuring this variable using an appropriate questionnaire would allow us to include it as a control variable in the analyzes – for example, as a covariate.

Furthermore, the sample employed in the study, even if large and diverse, was a convenience sample, and therefore a great deal of caution is needed in generalizing the results to the Italian adolescent population or adolescent populations with a different cultural background. Thus, it would be recommended to use more representative samples in future studies with the same purposes. In this way, the generalizability of our results could be verified in the future.

In addition, the timing of data collection may coincide with seasonal academic fluctuations, which could introduce a temporal bias, inadvertently shaping participant responses and the overall results. Future research should incorporate a multi-method approach to data collection and strategically plan data collection to mitigate these effects.

Moreover, this study did not address the nuanced effects of different types of social support – emotional, informational, appraisal, and instrumental – on the key relationships examined. Disentangling these factors could provide deeper insights into the specific ways in which social support influences academic achievement. Individual differences such as personality traits and cognitive styles may also alleviate the effects of social support and should be explored further. These factors could add complexity and richness to our understanding of educational success (Ahmadi et al., 2023).

Practical implications

The findings of this study may be of importance to both researchers and professionals. For researchers in the field of developmental and educational psychology, the study sheds light on the mechanisms underlying the relationship between resilience/future orientation and academic achievement. Even if the present study's results should be confirmed in the future, these initial findings suggest that theoretical models on high school transitions might need to consider the mediating role of social support in the relationship between resilience/future orientation and academic achievement.

For teachers and educators, a better understanding of the mechanisms underlying academic achievement can help create better conditions to facilitate their students' school transitions. First, the study results suggest that one possible way to enhance academic achievement during high school transition is to strengthen both students' resilience and their future orientation. However, interventions based on resilience and future orientation may not be enough, given the mediating role of perceived social support seen in the results of the current study. Thus, in addition to resilience and future orientation, the followings should be considered in order to improve students' academic achievement during high school transition, as recent literature has suggested (Fang et al., 2020): (a) involving families in school transition programmes, as parents offers great support and help children keep high their motivation to learn; and (b) giving students suggestions on how to make friends and maintain healthy friendships, recognizing that peers are crucial to improving academic achievement. For example, to implement friend support as a protective factor in academic success, Wilks and Spivey (2010) suggest a number of strategies for undergraduate students that can also be used in the high school context. These include promoting student organizations, planning interactive social events for students, and creating stress-free peer zones where students share academic experiences and help each other find solutions to challenges they face during the course of their school transition. In this way, the use of peer friends or peer support can help reduce stress and promote resilience during transition to high school. Among the pedagogical methods teachers can use in high school, cooperative learning is particularly noteworthy because it correlates positively with students' perceived levels of academic and personal support from teachers and peers (Ghaith, 2002).

The findings of the present study show that high levels of future orientation may not directly lead to academic success. The mediating role of social support should be taken into consideration. To illustrate, two different students may each think, 'I consider myself a strong person and I often think about building a positive future for myself', but if the first student does not have supportive relationships, he or she is likely to have lower academic achievement compared to the second student who feels loved and cared for by his or her family, peers, and other significant adults. Thus, if the three variables examined in this study (resilience, future orientation, and social support) are taken together, they are likely to have a great impact on academic success.

Conclusions

The findings of this study illuminate the intricate correlation between future orientation and resilience, as well as the crucial significance of social support in attaining academic objectives. This highlights the fact that students, regardless of their self-perception and objectives, may be unable to achieve their academic potential without a supportive network of peers. In order to ensure that students possess both personal resilience and goals, as well as the required academic assistance to succeed, it is essential to create an environment where social support mechanisms are actively integrated into educational procedures. This will guarantee that students can meet their academic aspirations. This highlights the need of creating an environment that actively integrates social support mechanisms.

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Availability of data

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

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

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