Original Research

SAGE Open
July-September 2025: 1–14

DOI: 10.1177/21582440251342522
journals.sagepub.com/home/sgo
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The Mediating Role of Academic Goal Orientations in the Relationship Between Empathy and Subjective Happiness in Adolescent Students

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Abstract

The subjective wellbeing of students is a key aspect of their personal and academic development, especially during adolescence, a period in which numerous variables that shape personality and academic performance converge. This study aims to analyse the relationship between empathy and subjective happiness and the possible mediating role of goal orientations (achievement and ego) in secondary school students. The study comprised 1,664 participants from eight secondary schools. The instruments used were the *Basic Empathy Scale* (BES), the Perception of Success Questionnaire (POSQ), and the Subjective Happiness Scale (SHS), validated and adapted for the teenage population. The results revealed differences by gender in task orientation and a significant correlation between empathy, task orientation and subjective happiness, as well as the positive mediating role of task orientation between empathy and subjective happiness, in line with adaptive behaviours; ego orientation was, in contrast, negatively correlated with empathy and subjective happiness. Academic goal orientation (task and ego) in teenage students plays a central role in the promotion of adaptive behaviours, empathy and subjective wellbeing, which are key factors in their personal and academic development.

Keywords

adolescents, empathy, goal orientations, students, subjective happiness

Introduction

During the school years, contextual and personal variables play a role not only in the students' academic performance but also in their personal development (Morales & Chávez, 2021). The main function of school as a specialised institution is to transmit knowledge to the students as well as the personal and social situations that emerge in the classroom, stimulating the full interaction of the school community participants and caring for the personal wellbeing of students (Tarabini, 2020). Adolescence, during which the future adult personality and its features is forged, is a particularly important period in this (Lerner et al., 2023). In this way, the constant challenges and demands posed by their academic tasks demand the students to mobilise their personal resources to cope, over more or less long periods of time. Some of these situations are difficult to face in the absence of the appropriate tools and strategies, leading to physical and psychological problems that may lead, in the worst cases, to school dropout (Pengpid & Peltzer, 2019). Emotional skills are crucial coping mechanisms, facilitating adaptive processes that increase the student's wellbeing and foster their personal development, which, in turn, can result in better academic performance and commitment (Torres et al., 2022). As such, the fostering of emotional skills is a key step in the development of

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Data Availability Statement included at the end of the article

personal skills, allowing for their adequate personal, social, and academic development (Suárez Cretton & Castro Méndez, 2022).

One of the best known variables, and one in which the range of possible responses during adolescence is wider, is empathy, which is defined as the ability to put oneself in the place of others, understanding their point of view and feelings (González-González et al., 2015). Empathy plays a crucial role in adolescence, particularly in fostering peer understanding and cooperation, due to the numerous reciprocal situations that arise in academic environments. Three key points must be emphasised: (a) perceiving the situation of the other; (b) interiorising their experience; and (c) making this experience our own. Empathy requires of all three of these processes, and ultimately strives to comprehend the perspective of someone else (Micó-Cebrián et al., 2019). Research on empathy argue for its multidimensional and integrative nature, consisting mostly of an affective and a cognitive dimensions, to which we must add the situational and dispositional dimensions (Tur-Porcar et al., 2016). The emotional component is associated with emotions of worry and empathy for someone else, which can be characterised as an emotional reaction to the emotions of another. The cognitive aspect involves grasping another's perspective and empathising with their experience. The dimensions of emotion and thought are linked (Bautista et al., 2016). Finally, we have to consider the dispositional dimension, which is a relatively stable tendency of people to assume other people's affects vicariously, and situational empathy, understood as the degree of vicarious affective experience felt by people in a given setting (Rodrigues et al., 2019).

In academic environments, empathy has been correlated with resilience, self-esteem, positive social relationships, subjective happiness, intrinsic motivation, and goal orientation, according to various studies (Cañete Lairla & Díaz Sánchez, 2019; Coppari et al., 2018; Hernández Perdomo et al., 2019; Hess, 2018; Katsumi et al., 2021; Micó-Cebrián et al., 2019; Musitu-Ferrer et al., 2019; Pintado & Cruz, 2017; Siguenza Marin et al., 2019), indicating adaptive behaviours. On the other hand, there is a lack of clarity regarding its connection with academic performance (Zorza et al., 2019), academic engagement and commitment (Lee et al., 2018), as well as cyberbullying (Palacio Chavarriaga, 2020).

The cognitive-social goal orientation theory (Ames, 2002; Nicholls, 1989) is especially important to examine the students' academic goals and is a widely used explicative framework. Goal orientation theory focuses on the reasons, motivations, goals and intentions that guide the behaviour of students in academic settings. From a goal orientation perspective, students primary aim is to express their competence or ability. This can be affected by two underlying motivational states: one is more independent, flexible, and focused on achieving goals; the other is less independent and flexible, and focused on the ego. Goal-oriented students tend to believe that academic success is the result of effort, constancy and sacrifice, whereas ego-oriented students focus on achieving better results than their peers in order to earn external approval, without investing in the traits that characterise goal-orientation (Franco et al., 2019; Lazarides et al., 2018; Tuominen et al., 2020). Goal orientation theory, therefore, divides the goal orientation of students based on the way students interpret and respond to their academic tasks (Ames, 2002). Many researches have discovered a strong connection between focusing on tasks and perseverance, determination and dedication to academic success (Malik et al., 2019); academic motivation and effort (Locke & Latham, 2019); self-efficacy and commitment to the academic institution (T. J. Lin, 2021); academic performance (Alhadabi & Karpinski, 2020); effective coping strategies (Salavera & Usán, 2017), and, more generally, physical, psychological, and emotional wellbeing (X. Lin, 2019). On the other hand, ego orientation has been related to extrinsic motivations and non-adaptive behaviours in academic settings (Karlen et al., 2019); lack of academic commitment and school dropout (Aarkrog & Wahlgren, 2022); anxiety and stress (Al Majali, 2020); poor academic performance (Hayat et al., 2018); and more generally less psychological and emotional wellbeing (Janke, 2020).

Regarding the relationship between empathy and goal-orientation, Self-determination theory (Deci et al., 1991) suggests that empathetic environments foster greater autonomy and intrinsic motivation, leading to high persistence on tasks in school. Some studies show that teacher empathy promotes an inclusive and collaborative learning environment, leading to greater student self-regulation and engagement with tasks as they perceive them as less threatening and more achievable (Aldrup et al., 2022; Jennings & Greenberg, 2009; Q. Liu et al., 2023). Johnson and Johnson (2009) and Gini et al. (2011) argue that empathy among students enhances task orientation by improving students' ability to understand the needs of their peers, as well as by facilitating communication and collaboration in group work. While the benefits of task orientation are well known, less research has focused on the consequences of students' own empathic skills on their own task and ego orientation and further research is needed.

Subjective wellbeing refers to how a person perceives their own self and life. According to Longobardi et al. (2020), individuals strive for wellness and contentment, and those who are content tend to excel in various areas like relationships, career, health, and finances (Lyubomirsky, King et al., 2005). The construct of

happiness has been analysed from multiple perspectives in recent decades. As noted by Vera-Villarroel et al. (2011), it is often used interchangeably with other concepts, such as subjective wellbeing, quality of life, and positive affects. In this regard, the most widespread psychological theory to explain human happiness is based on the concept of subjective happiness, expressed in terms of positive affects, life satisfaction, and the absence of negative affects (Lyubomirsky et al., 2005). *Three factors are argued to have an impact on happiness*: (a) genetic predisposition; (b) deliberate actions carried out by the individual; and (c) contextual conditions (cultural, geographic, social, economic factors; Lyubomirsky, 2008). From an academic perspective, two aspects may be emphasised: (a) theoretical efforts tend to focus on the level of happiness during a specific time span (known as chronic happiness); and (b) chronic happiness may be increased over time, but not beyond the limit established by individual-specific genetic factors (Lyubomirsky et al., 2005). Following these principles, happiness is understood as a subjective phenomenon, so assessments are based on the individual's self-perception; therefore, the study of happiness must be based on self-reports (Barraza Macías, 2020; Lyubomirsky et al., 2005).

Concerning the relationship between goal orientation and subjective happiness, San (2015) discovered that task goals, rather than ego goals, were linked to fundamental psychological needs like relatedness, which plays a role in the feelings of growth and well-being. On one hand, research shows that task motivation is connected to happiness by influencing feelings of self-efficacy, confidence, self-control, and a sense of belonging to a community (Lameiras et al., 2014). However, studies suggest that self-centred drive can have detrimental effects on overall happiness and fulfillment in life because it causes feelings of isolation (Wayment & Walters, 2017). However, Wayment et al. (2015) coined the phrase tranquil ego to explain the equilibrium between self and other interests, viewing self and others as interconnected and emphasising empathy. The reason why the quiet ego is linked to well-being is because it relies more on compassionate goals rather than egoistic goals. According to what we know, current research primarily examines overall well-being, leading to limited literature addressing subjective happiness as a measure of general well-being.

The literature on adolescents emphasise the positive correlation between happiness and adaptive behaviours characterised by high levels of empathy and resilience (Garaigordobil et al., 2020); emotional intelligence and emotional regulation (Ye et al., 2019); coping strategies (Pigaiani et al., 2020); academic performance (Önder, 2022); and subjective wellbeing (Diener et al., 2018). Conversely, subjective happiness has been related to less adaptive behaviours such as anxiety and depression (Gonçalves & Figueiredo, 2018); poor attention and executive skills (Naumann et al., 2019); various emotional disorders (Frijters et al., 2020; and even more extreme mental conditions and suicidal tendencies (Wi & Lee, 2018). Due to the benefits that happiness can have on the health of people (Kushlev et al., 2020), satisfaction with life (Nemati & Maralani, 2016), better social interactions (Quoidbach et al., 2019), it is necessary to know the factors that promote it from an early age, such as adolescence. More specifically, empathy is connected to various aspects of subjective happiness, including personal development, self-approval, and finding meaning in life (Choi et al., 2016). Acts of kindness and selfless behaviours, which are components of empathy, contribute to increased levels of happiness as well (Aknin et al., 2013). Moreover, empathy can support individuals in developing a favourable self-perception and in nurturing social connections that contribute to their personal well-being (Chung, 2014). It is essential to examine these factors in relation to teenagers, as they all play a role in their health and growth (Inam et al., 2021). While past studies have noted a connection between empathy and subjective happiness, the specific factors that explain how these two constructs are related are still not fully known, making it difficult to determine their exact impact on each other.

Finally, the possible individual differences in being empathic or happy found in the literature deserve to take gender into consideration. Research shows that women exhibit higher levels of empathy and focus on interpersonal relationships more than men (Christov-Moore et al., 2014), possibly due to their other-focused nature or societal norms surrounding gender roles (Löffler & Greitemeyer, 2021). Likewise, studies indicate that males tend to experience greater happiness (Kamthan et al., 2019) and overall life satisfaction (Moksnes & Espnes, 2013) when compared to females. Sharma et al. (2016) discovered that women exhibited greater levels of happiness compared to men, indicating a need for additional research to elucidate these results. According to Wayment and Walters (2017), female athletes exhibited greater levels of task motivation than male athletes, with males showing higher levels of selfish motivation. Given these results, it is crucial to investigate gender variances in the variables mentioned. At this point, it is known that empathy is positively associated with task orientation (Aldrup et al., 2022), on the one hand, and that task orientation is positively related to subjective happiness (Briki, 2020), on the other hand. With this context in mind, the purpose of this research is to examine how empathy, task and ego academic orientation, and subjective happiness are related in a group of adolescent secondary school students. The following four hypotheses are set forth:

(a) Empathy, task and ego orientation, and subjective happiness are affected by gender.
(b) Task orientation is positively correlated with empathy and subjective happiness, and ego orientation is negatively correlated with these same constructs.
(c) Task and ego orientation play a mediating role in the relationship between empathy and subjective happiness in adolescents.
(d) There is an adaptive behavioural pattern that combines high empathy, task orientation and subjective happiness, and a non-adaptive behavioural pattern that combines high ego orientation with low empathy and subjective happiness.

Method

Sample

The study comprised 1,664 adolescent students from eight secondary schools, including males ($n = 880$; 52.88%) and female ($n = 784$; 47.11%) with ages ranging from 12 to 18 years ($M = 14.47$; $SD = 1.63$). The sample was selected by simple random sampling. The sole requirement for participation was the capability to comprehend and interpret the Spanish surveys. Incomplete and haphazardly completed surveys were not considered; 98% of the surveys received were used in the research (Table 1).

Table 1. Sample's Socio-Demographic Characteristics.

Socio-Demographic characteristics	*N*	%
Gender		
Male	880	52.88
Female	784	47.11
Age		
12	216	12.98
13	304	18.26
14	350	21.03
15	406	24.39
16	302	18.14
17	59	3.54
18	27	1.62
Year		
1 Grade	311	18.68
2 Grade	427	25.66
3 Grade	523	31.43
4 Grade	403	24.21
Repeat a year		
Yes	508	30.52
No	1,156	69.47
Type of school		
Public	1,228	73.79
Private	436	26.20

Measurement Scales

Data was gathered using three standard surveys, one for each of the three constructs being examined:

Empathy was measured using the Basic Empathy Scale (BES; Jolliffe & Farrington, 2006), translated and adapted to Spanish adolescents by Merino-Soto and Grimaldo-Muchotrigo (2015). The scale includes nine items that reflect the degree of empathy of adolescents, considering the cognitive dimension (e.g., 'I can usually realise quickly when a friend is angry') and the emotional dimension (e.g., 'I get caught up in other people's feelings easily'), expressed in a five-point Likert scale ranging from 'strongly disagree' (1) to 'strongly agree' (5). The instrument that was translated and validated produced a Cronbach alpha score of .70, and .77 in our research.

Second, goal orientation was measured using the Perception of Success Questionnaire (POSQ; Roberts et al., 1998), adapted to adolescents and translated into Spanish by Martínez et al. (2006). The questionnaire comprises 12 items divided into two dimensions: task orientation (e.g., 'In class, I feel successful when I work hard') and ego orientation (e.g., 'In class, I feel successful when I prove to the teacher and my classmates that I am the best'). Responses are provided on a Likert scale with five points, ranging from 'strongly disagree' (1) to 'strongly agree' (5). Multiple studies have confirmed the questionnaire's dependability in academic environments, resulting in a Cronbach alpha score of. .85 and .83, respectively, in our study.

Finally, subjective happiness was measured with the Subjective Happiness Scale (SHS; Lyubomirsky & Lepper, 1999), translated into Spanish and validated by Extremera and Fernández-Berrocal (2014). The scale comprises four items that determine the degree of subjective happiness (e.g., 'Compared with the people around me, I consider myself…'). Answers are expressed on a four-point Likert scale ranging from 'Less happy' (1) to 'Happier' (5). Multiple studies have confirmed the reliability of the questionnaire in academic environments, showing a Cronbach alpha score of .78 in various studies and .82 in our own study.

Procedure

The research was conducted with the collaboration of the high schools and the students' parents/guardians, who provided their consent by signing a form with detailed information. The surveys were completed in the classrooms with oversight from the academic mentors and the research group. All caregivers were notified about the study's purpose, and all participants volunteered in accordance with the ethical principles of the Declaration of Helsinki (Asociacin Mdica Mundial

Table 2. Results by Descriptive Variable: Empathy, Goal Orientation and Subjective Happiness.

	Total		Male		Female				
Descriptive variables	*X*	*SD*	*X*	*SD*	*X*	*SD*	*t*	*Sig.*	*Cohen's d*
Empathy	2.75	1.02	2.74	0.98	2.76	1.05	−0.319	.750	−0.019
Goal (Task)	3.80	0.80	3.71	0.82	3.91	0.76	−3.791	.000	−0.252
Goal (Ego)	2.71	0.86	2.73	0.87	2.71	0.84	0.010	.992	0.023
Subjective happiness	2.89	1.03	2.95	0.98	2.82	1.08	1.873	.061	0.126

[AMM], 2000). The procedure adheres to the ethical standards set by the Research Ethics Committee of the Autonomous Community of Aragon (CEICA) (C.I. PI23/424). Surveys were confidential, and all individuals had the option to withdraw from the research at any point.

Data Analysis

Cronbach's alphas were computed for each scale in order to verify its reliability. Next, factor analysis was carried out on each measure to investigate factor structure and gather internal structure evidence. Descriptive statistics were used to determine the sociodemographic characteristics of the participants and identify any differences in scores between genders. Bivariate correlations were computed using IBM SPSS v29.0 to examine the relationship between empathy, goal orientation and subjective happiness. The analysis utilised structural equation modelling to examine how empathy influences subjective happiness through goal orientation, both directly and indirectly. A fully saturated model was tested, which does not have degrees of freedom and thus model fitting indexes cannot be evaluated. Mediation analysis was undertaken using the SPSS v29.0's MACRO tool by bootstrapping (10,000 runs). Finally, K-means cluster analysis was undertaken, using the standardised average scores yielded by the variables to divide the sample into three significant groups. For all the operations, a $p \leqslant .05$ level of significance was adopted, with a 95% confidence level.

Results

Factorial Analysis

Four Confirmatory Factor Analyses [Jamovi version 2.6 (The Jamovi Project, 2024)] were performed to determine the structure of the various scales used. It was used the weighted least squares means and variance (WLSMV) adjusted estimation method (Kline, 2015). Error variances between items were allowed to covary if it implied an increase in model fit (e.g., item 2 with item 4 of subjective happiness).

Model fit for each variable was assessed using the Tucker-Lewis Index (TLI), the Comparative Fit Index (CFI), the Root Mean Square Error of Approximation (RMSEA), and the Standardised Root Mean Square Residual (SRMR) with a 95% confidence interval (CI). TLI and CFI values have to be above .90, while RMSEA and SRMR values below .08 to consider a good model fit (Kaplan, 2000; MacCallum & Austin, 2000; Muthén, 2004). Goal orientation showed an adequate fit (TLI = 1, CFI = 1, RMSEA = 0.05 and SRMR = 0.04, 95% CI [0.06, 0.45]) with its two dimensions, as did subjective happiness (TLI = . 99, CFI = 1, RMSEA = 0.05 and SRMR = 0.02, 95% CI [0.12, 0.34]), and empathy (TLI = 0.99, CFI = 1, RMSEA = 0.05 and SRMR = 0.03, 95% CI [0.06, 0.61]) with its two dimensions.

The standardised factor loadings of the goal orientation variable ranged from .59 to .76 for the task orientation factor, while they ranged from .64 to 1.11 for the ego orientation factor. Regarding empathy, factor loadings ranged between .61 and .89 for the affective empathy factor, while between .49 and .61 for the cognitive empathy factor. Finally, factor loadings for subjective happiness were found to be between .29 and .84.

Descriptive Variables

Concerning descriptive variables (Table 2), on average females yielded higher scores in terms of empathy and task orientation. Significant gender differences were found in the task orientation variable ($t = -3.791$, $Sig. = 0.000$). Cohen's d yielded a small effect size in this variable (Cohen's $d = -0.252$) showing that there is a statistically significant difference between men and women in terms of their task orientation, being significantly higher in the female gender. No significant differences by gender were found in empathy, subjective happiness nor ego orientation.

Correlational Analysis Between Empathy, Goal Orientation and Subjective Happiness

Pearson's bivariant correlations are presented in Table 3. Empathy was found to be positively correlated with task

Table 3. Results of Empathy, Goal Orientation and Subjective Happiness Correlations.

Variable	1	2	3	4
Empathy	1			
Goal (Task)	.389**	1		
Goal (Ego)	−.209**	−.193**	1	
Subjective happiness	.181**	.289**	−.054	1
Mean	2.75	3.80	2.71	2.89
SD	1.02	.80	.86	1.03
Alpha de Cronbach	.82	.85	.83	.82

**Correlation significant at .01 level (two-tailed).
*Correlation significant at .05 level (two-tailed).

orientation ($r = .389$; $p \leqslant .01$) and subjective happiness ($r = .181$; $p \leqslant .01$), and to be negatively correlated with ego orientation (ego) ($r = -.209$; $p \leqslant .01$). Subjective happiness was found to be positively correlated with task orientation ($r = .289$; $p \leqslant .01$). No significant correlation with ego orientation was found ($r = -.054$; $p > .05$).

Mediation Effects of Goal Orientations in the Relationship Between Empathy and Subjective Happiness

To determine if goal orientations serve as a mediator in the connection between empathy and subjective happiness, mediation analysis was conducted using Hayes's (2018) MACRO tool in Process 3.0 of SPSS (v. 27), based on the model by Tal-Or et al. (2010; Figure 1).

First, the total effect path (c) from empathy to happiness was significant ($\beta = .18$; $p < .001$). Second, there was a significant direct effect (c') of empathy on happiness ($\beta = .08$; $p < .05$), which means that empathy had a positive influence on subjective happiness. Third, there was a significant indirect effect of empathy on happiness through task orientation ($\beta = .10$; $SE = .01$, 95% CI [0.06, 0.14]), supporting our hypothesis that task orientation would mediate the relationship between empathy and happiness. Nevertheless, the indirect effect of empathy on subjective happiness through ego orientation was not statistically significant ($\beta = .00$, $SE = 0.00$, 95% CI [−0.01, 0.01]. The r^2 coefficient indicated that the model accounted for 17% of the variance in happiness, corresponding to an intermediate effect size (Cohen, 1988). To evaluate the importance of the indirect impact of empathy on subjective happiness via task orientation, a Sobel test was carried out as described by Sobel (1982). The regression coefficient indicating the impact of empathy on task orientation was 0.30, with a standard error of 0.02. The regression coefficient measuring how task orientation affects happiness, controlling for empathy, was $b = 0.33$, with a standard error of 0.05. The Sobel test was significant ($z = 6.28$, $p < .001$), suggesting that the indirect effect of empathy on happiness through task orientation is significant, but not for selfish orientation ($z = -0.00$, $p = .77$).

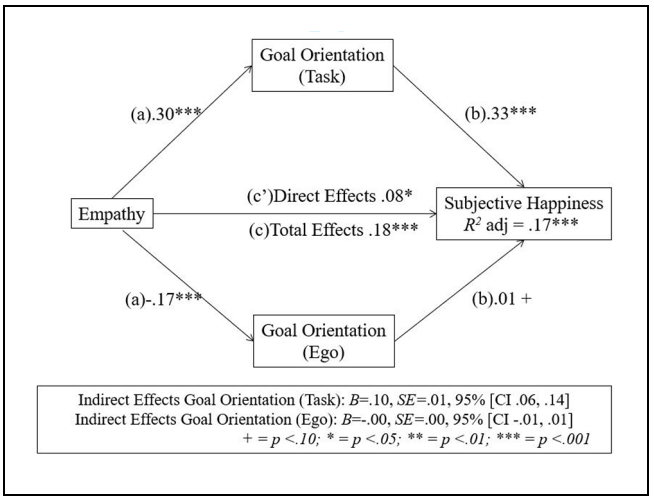

Figure 1. Mediation model of empathy-goal orientations-subjective happiness.

Grouping Variables of Empathy, Goal Orientations and Subjective Happiness in Cluster Analysis

Afterwards, the K-means clustering method was used taking the standardised average values of empathy, goal orientation, and subjective happiness to divide the sample into three inter-significant groups (Table 4). In this way, Group 1 ($n = 420$, 25.24%) is characterised by high scores in task orientation and subjective happiness and medium scores in empathy and ego orientation. Group 2, the biggest one ($n = 632$, 37.98%) is characterised by high scores in task orientation and empathy and below average scores in ego orientation and subjective happiness. Finally, Group 3 ($n = 612$, 36.77%) is characterised by high scores in ego orientation and well below average scores in empathy, task orientation, and subjective happiness.

Scientific Discussion. The objective of this research was to determine how empathy, goal orientation (task and ego), and subjective happiness are connected in adolescent high school students.

The first hypothesis argued that the variables under study are affected by gender differences. The hypothesis was partially confirmed, as only goal orientations were found to be affected by gender differences, with women scoring significantly higher than men. The scientific literature largely agrees with these results, with women scoring higher than men in terms of task orientation, along with other variables, such as academic performance

Table 4. Cluster Analysis of Empathy, Goal Orientation and Subjective Happiness.

	Group 1 ($N = 420$, 25.24%)		Group 2 ($N = 632$, 37.98%)		Group 3 ($N = 612$, 36.77%)		Total sample			
Variable	*X*	*SD*	*X*	*SD*	*X*	*SD*	*X*	*SD*	*F*	*Sig.*
Empathy	2.60	0.86	3.60	0.63	1.99	0.73	2.75	1.02	397.254	.000
Goal orientation (Task)	4.11	0.64	4.13	0.62	3.26	0.77	3.80	0.80	156.795	.000
Goal orientation (Ego)	2.90	0.76	2.23	0.70	3.09	0.83	2.71	0.86	110.375	.000
Subjective happiness	4.08	0.60	2.80	0.77	2.17	0.72	2.89	1.03	466.985	.000

(Valdés-Cuervo et al., 2015); self-concept (Castejón et al., 2016); anxiety, stress and depression (Gao et al., 2020); and even the practice of sports (Guan et al., 2022). Similarly, the scientific literature generally argues in favour of higher empathy scores among women, especially older ones (Cáceres & López, 2018; Gómez Tabares & Durán Palacio, 2020; Smith et al., 2019). Concerning ego orientation and subjective happiness, however, the differences are less clear. While some studies argue that males tend to yield higher scores (Freire & Ferreira, 2020; Kuśnierz et al., 2020; Portela-Pino et al., 2020) others argue that it is men who yield higher scores in these variables (Korpershoek et al., 2021; Meisenberg & Woodley, 2015) or that no significant differences exist (Chen et al., 2020; Deb et al., 2020).

The second hypothesis argued for a positive correlation between task orientation, empathy and subjective happiness and a negative correlation between ego orientation and these same variables. The hypothesis was partially confirmed: task orientation was found to be positively correlated with empathy and subjective happiness, the study discovered a negative correlation between ego orientation and empathy. On the one hand, there is a clear relation between academic task orientation and empathy and subjective happiness. This is in line with the arguments presented in the literature. Hwang and Kim (2018) argue for a relationship between goal orientation and empathy in adolescents, which in turn leads to greater subjective happiness; Jahedizadeh et al. (2016) argue that academic skills can be used to predict empathy, motivation and the prevention of burnout; Walther et al. (2020) find a significant correlation of empathy with self-determined variables, such as goal orientation and motivation, in university students.

On the other hand, ego orientation was found to be negatively correlated with empathy, but not with subjective happiness. The former result finds support in the academic literature. Jeong (2017) argues that ego orientation is positively correlated with empathy and negatively correlated with resilience and stress-coping strategies in secondary school students; Kavussanu and Stanger (2017) link these two constructs with other pro-social variables, while Oh and Hwang (2018) relate them to more or less positive social relations. However, the second conclusion is more problematic; our results agree with other studies which reject any significant negative correlation between ego orientation and subjective happiness (G. Liu et al., 2022; Wayment & Bauer, 2018), although other studies argue in favour of this correlation (Ng et al., 2019). As noted by Wang et al. (2022), task orientation in academic contexts in combination with the students' self-regulation generally tends to improve wellbeing and personal and academic development.

The third hypothesis argued that goal orientation (task and ego) played a mediating role between empathy and subjective happiness in adolescents. The hypothesis was partially confirmed; while task orientation plays a mediating role between the other two constructs, increasing the total effect of the model, ego orientation was not found to play a mediating role. Not many scientific studies have explored the possible mediating role of goal orientation in academic settings. Some studies, however, present interesting results in this regard. Won et al. (2018) analyse goal orientation (task and ego) and argue that the former plays a mediating role in self-regulated learning, on which such variables as empathy, self-efficacy and feeling of belonging to the school institution converge; Arslan and Asıcı (2022) argue that task orientation plays a mediating role on other self-determined variables in school settings, leading to greater wellbeing; Sideridis (2020) argue that ego orientation plays a mediating role in the relationship between stress and anxiety, leading to less psychological wellbeing; Datu and Park (2019) argue that task orientation has an influence on academic engagement and subjective happiness in adolescents; and Jowkar et al. (2014) argue that task orientation plays a mediating role on self-determined variables, such as resilience, empathy, and academic performance, while ego orientation can be used to predict poorer academic results. This indicates that goal orientation plays a mediating role not only with the variables targeted in this study but also with other psychological constructs that are important in school settings, in line with adaptive behaviours that can contribute to the personal and academic development of adolescents.

Finally, the fourth hypothesis argued for an adaptive behavioural pattern that combines high empathy, task orientation, and subjective happiness, and a non-adaptive behavioural pattern that combines high ego orientation with low empathy and subjective happiness. The hypothesis was partially confirmed; the former pattern characterised one of the groups, admittedly the smallest, identified by cluster analysis, and the latter characterised another of the groups, although this pattern is less sharply outlined. Thus, the adaptive behaviour pattern was composed of the majority of adolescent students followed closely by the other group of students characterised by a less adaptive behaviour pattern, which we thought would be composed of a smaller population of students.

Few previous studies address this issue of behavioural patterns, much less in adolescents and concerning such specific variables. Some studies, however, examine the relationship between our variables and self-determined behaviours. Katsumi et al. (2021) link empathy and subjective wellbeing with intrinsic motivations in secondary school and university students; Parhiala et al. (2018) examine motivational profiles in adolescents and identify adaptive behavioural patterns which combine task orientation, wellbeing, empathy, resilience and subjective happiness; and Hwang and Kim (2018) relate task orientation to empathy and happiness in line with the self-determined behavioural pattern described. Conversely, other studies examine the less adaptive behavioural pattern. Pulido Acosta and Herrera Clavero (2018) relate chiefly extrinsic motivational orientations to low-level happiness and emotional skills, such as empathy and emotional intelligence, also pointing out the impact of sociodemographic factors; Méndez-Giménez et al. (2020) define emotional intelligence profiles in which extrinsic motivations are linked to low subjective happiness in adolescents; finally, Sun et al. (2016) claim that ego orientation leads to lower levels of psychological wellbeing, academic happiness and emotional skills in adolescents. In both instances, the influence and high scores in ego orientation are significant, giving further confirmation to the second hypothesis; the adoption of a given orientation (task or ego), does not necessarily exclude the other, because, owing to the orthogonality of goal orientation, students can use both and even chose one or the other depending on context or academic demands (Alexandris, 2013).

Conclusions

It is clear that the constructs under study play an important role not only in the academic but also in the personal development of adolescents. Our results suggest that goal orientations have a significant impact on the adoption of more or less adaptive behaviours in academic settings, and that this, in turn, has an effect on other variables, such as empathy and subjective happiness, which are positively correlated, a correlation reinforced by task orientation, which is characterised by effort and constancy in the undertaking of the school tasks. Similarly, the mediating role played by task orientation is not only limited to the variables targeted by this study but also extends to many other psychological constructs. As such, the promotion of task orientation can have positive effects on students at many different levels.

Limitations of the Study

The primary drawback of the research lies in its cross-sectional design; the information was gathered at a certain moment; the levels of empathy, goal orientation and subjective happiness of teenagers may fluctuate annually and even within the same academic year due to modifications in their situational circumstances and personal and familial influences. The secondary schools selected for the research were picked through random selection, and the sample does not accurately represent the broader economic, social, educational and family contexts. In addition, the shared method variance collected data from a single measurement method through the survey whose responses may be slightly biased to collect the data. Finally, the lack of generalisability of the findings to other ethnicities and geographic contexts should be noted as they may not be representative of populations with different cultural, ethnic backgrounds or geographic locations limiting the applicability of the findings and underscoring the need for future research in more diverse contexts.

Future Prospects

Future studies should widen the lens, examining the effect of goal orientation (task and ego) on other psychological variables beyond empathy and subjective happiness. Similarly, it would be interesting to carry out longitudinal studies to examine the evolution of the target constructs over time, and also to include the variable academic performance. Similar studies should be undertaken at other educational levels, such as primary school and university so that the constructs under analysis can be compared across academic stages. Finally, it is interesting to consider other sociodemographic variables, such as academic year or stage, and cultural and social factors.

Practical Implications

This study could aid in developing tactics to assist students in adopting more adaptive behaviours, such as encouraging effort and motivation, to enhance their

effectiveness in academic assignments, as well as their empathy and overall happiness. This could also help lower the rate of students leaving school early and enhance academic achievement. Programmes led by psychology experts who are actively involved can also help achieve this objective. These findings represent only the beginning stage, motivating us to further explore the psychology of teenagers and create tactics to support their personal, social and emotional growth.

Acknowledgments

The authors would like to thank the Ibercaja Foundation and University of Zaragoza (JIUZ2022-CSJ-22) and TEA Ediciones Chair.

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Ethical Considerations

All procedures performed in studies involving human participants were in concordance with the ethical standards of the institutional and/or national research committee and with the 2000 Helsinki declaration and its later amendments or comparable ethical standards.
The protocol follow the ethical guidelines established in the Research Ethics Committee of the Autonomous Community of Aragon (CEICA; C.I. PI23/424). Questionnaires were anonymous and all participants could abandon the study at any stage.

Author Contributions

Pablo Usán Supervía contributed to study's conception and design, data acquisition, data analysis and given final approval of the version to be published.
Reina Castellanos Vega contributed to study's conception and design, data acquisition, data analysis, wrote the first draft of the manuscript and revised it and given final approval of the version to be published.
Eva Urbón Ladrero contributed to study's conception and design, data analysis, involved in the first draft of the manuscript and revised it and given final approval of the version to be published.
Carlos Salavera Bordás contributed to data acquisition, data interpretation, involved in the revision of the manuscript and critically discussed the revision and given final approval of the version to be published.
Julia Sánchez García contributed to data analysis and interpretation, rewritten and revised the final manuscript for important content and methodology and given final approval of the version to be published.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Data Availability Statement

Data will be available upon request.

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