Health Psychology

Psychological well-being in adolescence: relationships between life skills, self-efficacy, and metacognitive skills

Elena Commodari [1], Silvia Platania [1], Valentina Lucia La Rosa [1] [*], Giovanni Commodari [2], Giulia Carnemolla [1], Jessica Parisi [1], United Network Europa [3]

Abstract

Objective: Self-efficacy is an essential variable contributing to adolescents' well-being and academic success. The literature on the topic underlines that adolescents with effective metacognitive strategies show high levels of self-efficacy. Furthermore, a recent line of research has focused explicitly on the relationship between self-efficacy and the skills essential to developing adequate abilities to acquire positive behaviors and effectively face life challenges ("life skills"). The relationship between these variables and how it could affect stress perception and quality of life during adolescence are still little investigated and need more research attention. Specifically, this study aimed to investigate the impact of self-efficacy, life skills, and metacognition on stress perception, depressive and anxiety symptoms, and quality of life in a sample of Italian adolescents.

Methods: 389 high school students (males = 149; females = 240; age range: 14–19.2, M = 16.61, SD = 1.05) were randomly recruited from five Italian public high schools. The participants completed a battery of five standardized tests between November 2019 and January 2020. The questionnaires assessed five dimensions of social and interpersonal skills (Non-affirmation, Impulsiveness, Narcissism, Social preoccupation, and Stress in social situations), perceived stress, general self-efficacy, metacognition, and quality of life. Data were analyzed using structural equation modeling.

Results: Results showed a direct effect of all five dimensions of interpersonal skills on self-efficacy and quality of life (p<.001). Furthermore, data confirmed the indirect effect of metacognitive skills on the relationship between all interpersonal skills and the sense of self-efficacy and a partial mediation of metacognition in the relationships with self-efficacy.

Conclusions: This study underlines the significant impact of the investigated variables on adolescents' quality of life and stress perception. These findings suggest a need for specific programs to enhance life skills to improve adolescents' mental health and psychological well-being.

[1] Department of Educational Sciences, University of Catania, Via Biblioteca 4, 95124 Catania, Italy

[2] S.S. C.S.M. 24 H San Vito al Tagliamento - D.S.M. A.A.S. n.5 Friuli Occidentale, Via Tina Madotti 7, 33078 San Vito al Tagliamento, Pordenone, Italy

[3] Via Parigi 11, 00185 Rome, Italy

E-mail corresponding author: valarosa@unict.it

1. Introduction

Adolescence represents a decisive phase for personal development. Adolescents can acquire a series of skills and resources that allow a balanced growth process even in the later stages of life (Lerner & Steinberg, 2009). In addition, it is a period of remarkable physical, cognitive, and socio-emotional transformations that affect relationships with family and friends and academic adjustment, influencing motivation and learning (Bonnie & Backes, 2019; Lerner & Steinberg, 2009; Schunk & Meece, 2006).

Recently, research paradigms on adolescence have markedly changed (Bacchini & Magliulo, 2003). The previous stage-oriented model (Petersen et al., 1992), in which adolescence was considered a period marked by invariable phases of development, evolved into a process-oriented model, where adolescence is studied regarding the interactions between the individual and the context (Bandura, 2006; Jackson & Goossens, 2020).

In addition, adolescence has been associated with psychosocial disorders and incoherence (Bandura, 2006; Casey et al., 2010; Colasante et al., 2022; Collins & Steinberg, 2007). Nevertheless, ample evidence exists to prove that most adolescents go through this particular stage of development without any specific discord or trauma (Bacchini & Magliulo, 2003; Lerner & Steinberg, 2009).

One of the fundamental tasks during adolescence is to achieve a self-perception as an independent subject (Barberis et al., 2021; Harter, 2015). More specifically, the adolescent has to move from the egocentric perspective typical of childhood to acquire interpersonal skills (Brizio et al., 2015; Romund et al., 2017). Furthermore, realistic knowledge of own being and ability is an essential task of adolescence. In this sense, self-efficacy is a critical variable for developing adolescents' self-concept (Sanders, 2013; Tsang et al., 2012). Indeed, the personal beliefs developed during adolescence affect achieving wellness and self-fulfillment in adulthood (Zimmermaan & Cleary, 2006).

1.1. Self-efficacy in adolescence

Self-efficacy is the personal confidence in carrying out successfully a particular goal (Bandura, 1997) and influences self-perception. Thus, self-efficacy is an essential variable contributing to adolescents' well-being and academic success (Armum & Chellappan, 2015; Filippello et al., 2013; Yazici et al., 2011). Indeed, the changes in self-efficacy during adolescence significantly impact school performances, family and peer relationships, and career choices (McCauley et al., 2019; Schunk & Meece, 2006).

Positive feedback aimed at developing adolescent skills can be constructive in building a good sense of self-efficacy. Conversely, negative messages from significant others can severely compromise self-efficacy (Pajares, 2006; Usher & Pajares, 2006). Furthermore, the adolescent can derive information on coping with a task from his physiological and emotional states. Basically, a positive attitude increases self-efficacy, while negative feelings lessen it (Usher & Pajares, 2006).

A strong self-efficacy significantly improves adolescents' health (Luszczynska et al., 2011). Indeed, adolescents confident in their skills approach goals as challenges, not obstacles to be avoided (Parto, 2011). Furthermore, young people believe that an eventual failure results from insufficient abilities that can be acquired (Bandura, 2010). In addition, adolescents face dangerous conditions with self-confidence. Adolescents with low self-efficacy have low aspirations and are less committed to achieving their objectives. When faced with challenging tasks, they tend to focus on the possible obstacles and difficulties they will encounter rather than on how to complete the task successfully (Bandura, 2010; Tak et al., 2016).

Self-efficacy is also an essential psychological mediator of adolescents' health. Indeed, it has been shown that a stronger self-efficacy correlates with a greater likelihood of adopting healthy behaviors, maintaining them, and recovering after setbacks (Bandura et al., 2003; Yu et al., 2018). Furthermore, ample evidence suggests a connection between a low self-efficacy and a higher perception of stress, with a consequent negative impact on the general quality of life (Carrozzino et al., 2019; Mesurado et al., 2018). More specifically, self-efficacy's effect on stress also depends on the subject's perception of a task as a threat or a challenge to be faced. At the same time, physiological activation states associated with stress and anxiety can affect the sense of self-efficacy. Finally, stress and anxiety may discourage adolescents' self-efficacy (Muris et al., 2015; Zajacova et al., 2005).

1.2 Self-efficacy and metacognition

Current theories suggest that the sense of self-efficacy is also associated with self-regulation processes (Zimmermaan & Cleary, 2006). Self-regulation is the process of self-observation and self-monitoring of particular aspects of one's behavior or performance. Self-regulatory abilities, including time control and self-assessment, play a significant role in academic success (Andrade, 2019; Zimmermaan & Cleary, 2006).

Strong self-efficacy is connected to a greater motivation to self-monitor and a more remarkable ability to monitor one's behaviors during a school activity. Furthermore, self-regulation processes directly influence self-efficacy beliefs (Cera et al., 2013; Zimmermaan & Cleary, 2006).

Self-regulation is strictly related to the concept of metacognition, which is the knowledge of personal cognitive systems and learning patterns. The metacognition theory generally distinguished between understanding cognitive functioning and the mechanisms of evaluation and monitoring of the learning processes (Akturk & Sahin, 2011; Cera et al., 2013). According to this perspective, metacognition concerns the awareness of the cognitive processes and procedures involved in controlling and adapting knowledge acquisition processes (Cera et al., 2013; Pintrich, 2010).

The existing literature emphasizes that adolescents with effective metacognitive strategies show high levels of self-efficacy and, consequently, increased trust in their skills in achieving a goal compared with unconfident adolescents (Zimmermaan & Cleary, 2006). This close relationship between self-efficacy and metacognitive skills allows adolescents to be highly motivated to engage in learning activities and have a positive learning approach. Furthermore, they can develop effective strategies to cope with their difficulties during the learning process, considering them as challenges rather than threats to be avoided (Armum & Chellappan, 2015).

According to recent literature on this topic, self-regulation skills fall within the so-called "life skills" necessary for adaptive behavior to effectively face daily challenges (World Health Organization, 2001).

1.3 Self-efficacy and life skills

A recent line of research has focused explicitly on the relationship between self-efficacy and life skills (Erozkan, 2013; Rubin et al., 2009) and how self-efficacy can foster the development of these particular skills during adolescence (Schunk & Meece, 2006).

Life skills are essential to developing adequate abilities to acquire positive behaviors and effectively face life challenges (Mangrulkar et al., 2001; Rezayat & Dehghan Nayeri, 2013). Life skills are generally classified as social, interpersonal, cognitive, and emotional coping skills (Di Nuovo, 1998; Mangrulkar et al., 2001; Sagone et al., 2020; Wats & Wats, 2009).

Possessing life skills can raise self-efficacy, leading to further skills acquisition (Schunk & Meece, 2006). A good sense of self-efficacy favors acquiring new knowledge and developing skills that promote positive interpersonal adaptation (Tsang et al., 2012).

Most of the studies on the relationship between self-efficacy and life skills suggest that empowering life skills through specific training significantly improves self-efficacy and increases the chances of individual success (Schunk & Meece, 2006). Furthermore, life skills are strictly related to self-regulation and metacognitive thinking (Joseph et al., 2010). Therefore, the lack of

adequate life skills may inhibit access to cognitive achievements and compromise academic performance (Laskey & Hetzel, 2010). Recent studies have also explored the impact of life skills, especially emotional coping skills, on mental health and quality of life, underlining that life skills' training may be a valuable strategy to enhance the quality of life, emotional control, and for decreasing psychological symptoms, including anxiety and depression (Haji et al., 2011; Moksnes et al., 2018; Sobhi-Gharamaleki & Rajabi, 2010).

Training programs can assist adolescents in acquiring life skills by interactive teaching techniques such as role-plays, open debates, and small group exercises (Boyce et al., 2001; Mangrulkar et al., 2001). More specifically, an effective life skills training program for adolescents should have the following characteristics: forming skills through peer and social interaction, acquisition of interpersonal problem-solving abilities, and internal skills for developing confident behaviors (Mangrulkar et al., 2001).

The enhancement and development of life skills represent a challenge for the world of education and training (Pannebakker et al., 2019; Rezayat & Dehghan Nayeri, 2013). However, the relationship between life skills and self-efficacy and how it could affect stress perception and quality of life during adolescence are still little investigated and deserve more research attention.

1.4 Study Aim and Hypotheses

Our purpose was to investigate the relationship between self-efficacy, life skills, metacognitive skills and how this relationship impacts stress perception and quality of life in a sample of Italian adolescents.

The null hypotheses were:

Hypothesis 1 (H1): Life skills have a direct effect on the sense of self-efficacy.

Hypothesis 2 (H2): Metacognitive abilities indirectly affect the impact of life skills on the sense of self-efficacy, stress perception, and quality of life.

2. Materials and Methods

2.1 Procedures

The sample consisted of high school students who were randomly recruited from five Italian public high schools. These schools were located in cities with different numbers of inhabitants and socio-cultural characteristics (a sizeable regional capital city, a provincial capital city, and two non-capital municipalities). In Italy, the upper secondary school comprises five grades corresponding to the International Standard Classification of Education Level 3. Three upper

secondary schools range from the academic to the vocational: lyceum, an academic school, technical and professional schools. Lyceum comprises several fields of study: Classical, Scientific, Linguistic, Artistic, Musical, and Human Sciences.

Similarly, there are different technical and professional schools, which include much practical work relating to various working fields. Some subjects, such as literature, foreign language, math, are common to all schools. The upper secondary school comprises five grades. In Italy school education is compulsory until 16 years old. More specifically, the students of our sample attended classical and scientific lyceum.

The study adhered to the ethical standards of the Declaration of Helsinki and the Ethical Code for Italian psychologists (L. 18.02.1989, n. 56), Italian law for data privacy (DLGS 196/2003), and the Ethical Code for Psychological Research (March 27, 2015) accepted by the Italian Psychologists Association. The Internal Ethics Review Board (IERB) of the Department of Educational Sciences of the University of Catania approved the study.

2.2 Participants

Participants were 389 high school students (males = 149; females = 240; age range: 14–19.2, M = 16.61, SD = 1.05). 166 students attended the Classic Lyceum and 223 the Scientific Lyceum. Within each school, four classes were randomly selected, and, for each class, all students participated in the study. The over eighteen participants completed informed consent forms, while their parents filled out the underage students' consent forms.

Three hundred sixty-six participants had a regular school career, while only 23 had an irregular career due to failure or interruption of studies.

The large majority of the sample is Italian nationality (Italian = 379; non-Italian = 10). Three hundred sixty-nine students had both parents of Italian nationality, 14 had a parent of non-Italian nationality, and 6 had both parents of non-Italian nationality.

2.3 Measures

The participants completed a battery of five standardized tests between November 2019 and January 2020. All measures were administered in groups in a dedicated classroom by expert researchers during school hours. Administration required approximately 15 to 30 minutes to be completed.

The following self-report tests were administered to the participants:

- the *Interpersonal Adaptation Questionnaire (QAI)* evaluates life skills with particular reference to the specific component of social and interpersonal skills (Di Nuovo, 1998). Indeed, this questionnaire assesses a series of skills, attitudes, and behaviors that people use when involving in relationships with others or social groups and play an essential role in determining a positive or negative interpersonal adjustment. It consists of 50 items and five subscales: Non-affirmation, Impulsiveness, Narcissism, Social preoccupation, and Stress in social situations. Each subscale's score is given by the sum of the values (2/1/0) attributed to the items that compose it, and high scores correspond to higher levels of the investigated dimensions. The internal consistency of the five sub-scales is satisfied (Cronbach's α from .73 to .87) (Di Nuovo, 1998);

- the *Mesure du stress psychologique (MSP)* assesses the global index of psychological stress (Lemyre et al., 1990). MSP aims to measure stress as an elaborate response structure rather than a particular stressing condition. Therefore, it emphasizes the individual understanding of stress in difficult situations (Brazil & Krueger, 2002). The questionnaire is formed by 49 items investigating personal feelings about the cognitive, physiological, and behavioral condition. The total score ranges from 49 to 196, and higher scores correspond to higher levels of perceived stress. MSP shows acceptable psychometric features (Internal consistency – Cronbach's α coefficient: .95; test-retest reliability between .68 – .80). It has been validated in several languages maintaining the psychometric characteristics of the original version (Lemyre et al., 1990);

- the *General Self-Efficacy Scale (GSE)* investigates general self-efficacy, which is defined as the belief that each individual has in their abilities to deal with different stressful situations (Luszczynska et al., 2005). The scale consists of 10 items (Schwarzer & Jerusalem, 1995). A standard item is: "Thanks to my resourcefulness, I can handle unforeseen situations." Answers included "are not at all true (1)", "hardly true (2)", "moderately true (3)", and "precisely true (4)", with a final score ranging from 10 to 40 (Luszczynska et al., 2005). A higher score is associated with more self-efficacy (Schwarzer & Jerusalem, 1995). The scale shows good psychometric characteristics of reliability (Cronbach's α between .76 and .90). Several correlation studies showed an excellent criterion-related validity: in particular, the authors reported positive correlations with favorable feelings and work pleasure, while negative with anxiety, depression, and stress disorders (Schwarzer et al., 1997);

- the *Metacognitive Skills Scale (MSS)* evaluates metacognitive skills (Altindağ & Senemoglu, 2013).

The questionnaire is adapted by the Flavell model (1979), consisting of metacognitive knowledge and experiences, learning unit (objectives), and learning strategies (actions). It consists of 30 items and assesses a set of competencies that a subject applies in learning environments. In addition, MSS has good psychometric properties (Cronbach's α: .94).

- the *General Health Questionnaire – 12 items (GHQ-12)* evaluates the quality of life and mental health, with particular reference to depressive and anxiety symptoms. Respondents are asked to assess their psychological welfare over the previous three months. A six-point response scale is used, with answers ranging from 0 (never) to 5 (all the time) (Kalliath et al., 2004). The Italian adaptation of the GHQ-12 has satisfactory reliability and validity characteristics Cronbach's α between .81 and .84) (Piccinelli et al., 1993).

2.3 Statistical analysis

This study analyzed the data using structural equation modeling. The tests were performed in AMOS 26.0 (IBM Corporation, Armonk, NY), employing the maximum-likelihood approach. First, a confirmatory factor analysis (CFA) was applied to check the model fit of the measurement model.

The structural equation modeling method was then employed to assess the mediation model shown in Figure 1. A bootstrap estimation model verified the indirect effect with 2000 samples and a 95% bias-corrected percentile method (Hayes & Scharkow, 2013). Correlations, means, and standard deviation were also used using the Statistical Package for the Social Sciences (SPSS) version 26.0 (IBM Corporation, Armonk, NY). Cronbach's alpha was calculated for each factor to confirm the reliability, reporting acceptable internal consistency of the scale. Convergent validity and discriminant validity were evaluated to guarantee the construct validity. Convergent validity was verified by the size of the factor loading, average variance extracted (AVE), and composite reliability (CR) values.

3. Results

Mean, standard deviation, alpha di Cronbach, AVE, and CR are presented in Table 1, while Pearson's correlation results are presented in Table 2. The results showed that the AVE was higher than 0.65 and that CR was higher than 0.8 for all constructs. CR should be greater than the AVE, and the AVE should be greater than 0.5 to prove convergent validity (Table 2). Table 3 reports the correlation matrix of the questionnaires' scores.

Table 1. Descriptive Statistics and Psychometric Properties of Study Variables

	M	*SD*	Chronbach's α	AVE	CR
QAI-A	0.71	0.30	.60	.65	.75
QAI-I	0.77	0.37	.71	.68	.79
QAI-N	0.86	0.29	.64	.67	.78
QAI-P	0.96	0.40	.78	.80	.87
QAI-S	0.64	0.38	.65	.70	.82
MSS	98.77	18.21	.81	.72	.89
GSE	28.52	4.95	.80	.73	.91
MSP	100.95	21.54	.85	.77	.89
GHQ-12	13.13	6.67	.84	.75	.84

Note. AVE = Average Variance Extracted; CR = Composite Reliability; QAI-A = Interpersonal Adaptation Questionnaire - Non affirmation; QAI-I = Interpersonal Adaptation Questionnaire – Impulsiveness; QAI-N = Interpersonal Adaptation Questionnaire – Narcissism; QAI-P = Interpersonal Adaptation Questionnaire - Social preoccupation; QAI-S = Interpersonal Adaptation Questionnaire - Stress in social situations; MSS = Metacognitive Skills Scale; GSE = General Self-Efficacy Scale; MSP = Mesure du stress psychologique; GHQ-12 = General Health Questionnaire – 12 items.

Table 2. Correlation Matrix for Study Variables

Variable	*n*	1	2	3	4	5	6	7	8	9
1. QAI-A	389	-								
2. QAI-I	389	-.24**	-							
3. QAI-N	389	-.35**	.30**	-						
4. QAI-P	389	.32**	-.05	.03	-					
5. QAI-S	389	.58**	-.04	-.22**	.47**	-				
6. MSS	389	-.24**	-.08	.18**	.04	-.09	-			
7. GSE	389	-.49**	.02	.38**	-.34**	-.48**	.35**	-		
8. MSP	389	.24**	.19**	.04	.44**	.39**	-.09	-.34**	-	
9. GHQ-12	389	.25**	.05	-.09	.38**	.33**	-.10*	-.40**	.72**	-

Note. QAI-A = Interpersonal Adaptation Questionnaire – Non affirmation; QAI-I = Interpersonal Adaptation Questionnaire – Impulsiveness; QAI-N = Interpersonal Adaptation Questionnaire – Narcissism; QAI-P = Interpersonal Adaptation Questionnaire – Social Preoccupation; QAI-S = Interpersonal Adaptation Questionnaire – Stress in social situations; MSS = Metacognitive Skills Scale; GSE = General Self-Efficacy Scale; MSP = Mesure du Stress Psychologique; GHQ-12 = General Health Questionnaire – 12 items

*p < .05. **p < .01.

Table 3. Standardized Indirect Effects of Interpersonal Skills on Self-Efficacy through Metacognitive Skills

Effect	Estimate	*SE*	95% CI		*p*
			LL	*UL*	
QAI-A	.06	.01	-.380	- .154	<.001
QAI-I	.06	.01	-.292	- .080	<.001
QAI-N	.04	.07	.034	.256	<.001
QAI-P	.05	.03	.018	.219	<.001
QAI-S	.05	.01	-.303	-.093	<.001

Note. CI = confidence interval; LL = lower limit; UL = upper limit; QAI-A = Interpersonal Adaptation Questionnaire - Non affirmation; QAI-I = Interpersonal Adaptation Questionnaire – Impulsiveness; QAI-N = Interpersonal Adaptation Questionnaire – Narcissism; QAI-P = Interpersonal Adaptation Questionnaire - Social preoccupation; QAI-S = Interpersonal Adaptation Questionnaire - Stress in social situations.

### 3.1 CFA confirmatory of the model's variables

Confirmatory factor analyses were carried out and compared two different models. The robust maximum likelihood estimation was employed to examine the model fit. The first model included five factors taking all scales with a single factor structure into account. The results reported a significant chi-square value [$\chi^2(12)=266.683$, $p < .001$] but the values of the other fit indices were: NNFI = .71; CFI = .87; RMSEA =.14 with C.I.= .093 - .132; SRMR = .09.

In addition, the AIC and BIC values were 273.897 and 352.963, respectively. We thus examined a second model of CFA to prove if a better fit was achievable. The second CFA model consisted of nine factors and evaluated the QAI, not as an independent measure but as a factorial structure of second-order four factors. This model had better fit: $\chi^2(11) = 248.191$, $p < .001$; NNFI = .91; CFI = .95; RMSEA = .07 with C.I.= .034 - .095; SRMR = .04. The AIC and BIC values were smaller, 135.452 and 167.518 respectively. This second model exhibited a significantly better fitting compared to the first. Moreover, the differences resulted significant, following the comparison of the models'χ^2 values and degrees of freedom: $\Delta\chi^2(1) = 18.492$ ($p < .001$). Based on these findings, we reported no evidence for common-method bias in the data.

3.2 Mediation Analysis

The main results proved that there was a direct effect for all five factors of Interpersonal Adaptation Questionnaire (QAI) on Self-Efficacy (GSE), confirming hypothesis 1 (H1, QAI-A, β = -.20, p < .001; QAI-I, β = -.10, p < .05; QAI-N, β = .25, p < .001; QAI-P, β = -.20, p < .001; QAI-S, β = -.19, p < .001). In addition, the path from QAI-I (β = .22, p < .001), QAI-P (β = .34, p < .001) and QAI-S (β = .24, p < .001) to MSP is significant as the path from QAI-P (β = .29, p < .001) and QAI-S (β = .20, p < .001) to GHQ-12 (β = -.45, p < .001). Finally, the path from MSS to GSE is also significant (β = .24, p < .05) (Figure 1).

Figure 1. Path Diagram of the variables included in the mediation model (Notes: ** p <.05, *** p <.001)
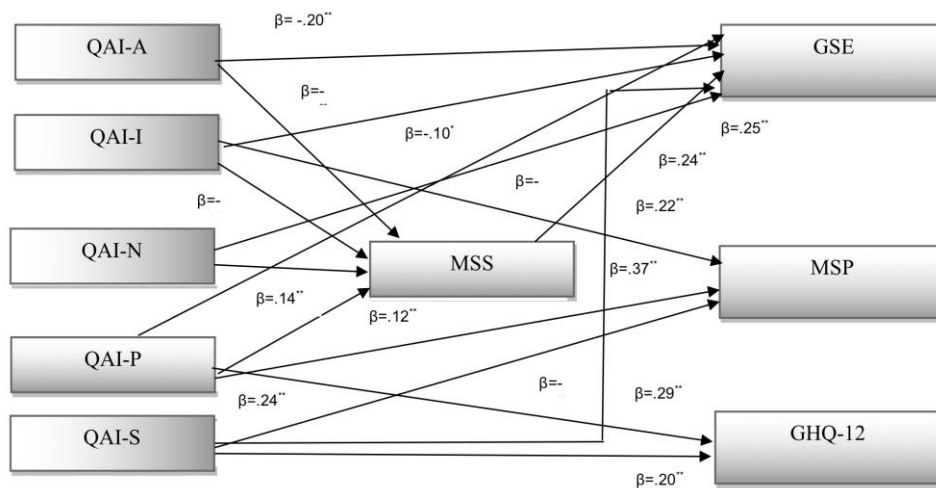
Regarding the mediation analysis (H2: there is an indirect effect on the part of metacognitive abilities with respect to the impact that interpersonal skills have on the sense of self-efficacy, stress and health in general), the indirect effect of metacognitive skills on the relationship between all interpersonal skills and the sense of self-efficacy is confirmed. Specifically, with particular reference to QAI-A (β =.06, p < .001; SE = .01, 95% CI = -.380, -.154), QAI-I (β = .06, p < .001; SE = .01, 95% CI = -.292, -.080), QAI-N (β =.04, p < .001; SE = .07, 95% CI = .034, .256), QAI-P (β =.05, p < .001; SE = .03, 95% CI = .018, .259) and QAI-S (β =.05, p < .001; SE = .01, 95% CI = -.303, -.093), the findings supported a partial mediation of MSS in the relationships with self-efficacy (H2) (see Table 3).

4. Discussion

Our purpose was to evaluate the relationship between social and interpersonal skills, metacognitive skills, and self-efficacy in a sample of Italian high school students. More specifically, the study intended to verify if social and interpersonal skills directly affect the sense of self-efficacy and if metacognitive skills indirectly affect the relationship between interpersonal skills, self-efficacy, stress, and quality of life.

The results confirmed that all the interpersonal skills investigated in this study directly affect self-efficacy. Therefore, the more adolescents possess good interpersonal skills that promote positive personal and social adaptation, the more they can approach complex tasks with self-confidence. This data aligns with the literature on the topic according to which interpersonal skills are significantly correlated to social self-efficacy (Erozkan, 2013). In this regard, a recent study by Sagone et al. (2020) showed the relationship between perceived self-efficacy and life skills and this relationship has a positive effect on other skills such as resilience. Furthermore, recent studies demonstrated that specific life skills enhancement programs in adolescence are associated with significant improvements in self-efficacy, especially for adolescents from lower educational level (Laskey & Hetzel, 2010; Pannebakker et al., 2019; Schunk & Pajares, 2002). In addition, it has been shown that good interpersonal skills are associated with adolescents' social self-efficacy and willingness to intervene in bullying incidents (Wachs et al., 2020). The positive relationship between interpersonal skills and self-efficacy is also confirmed by Edraki et al. (2018) who showed that that soft skills training significantly improved the self-efficacy of adolescents with diabetes.

Several studies have shown a link between interpersonal skills and adolescents' psychological health. Nabors et al. (2000) stated that life skills training in adolescence helps decrease depressive experiences and improve self-confidence and sense of responsibility. Furthermore, Sobhi-Gharamaleki and Rajabi (2010) underlined that life skills training reduces undergraduates' psychological problems, particularly anxiety, depression, and stress. Similarly, Edraki et al. (2018) demonstrated that soft skills are significantly associated with reduced anxiety, depression, and stress in adolescents with diabetes. Our results underlined that impulsiveness, social concern, and stress in social situations significantly predict adolescents' stress perception. Also, social anxiety and social stress have a significant effect on adolescents' general health. A possible interpretation of these findings is that impulsive subjects tend to be outgoing and confident but at the same time fear the judgment of others. As a result, perceived stress tends to increase in all those social situations in which the subject does not feel able to cope effectively with the

pressures exerted by a wide range of inputs from the surrounding environment. Furthermore, this stress related to the inability to adequately manage social situations is also associated with reduced psychological well-being. In light of these results, future studies will have to investigate the role of specific educational training to enhance interpersonal skills to promote psychological well-being during adolescence.

As in previous studies, the results of this analysis confirm that self-efficacy is associated with self-regulation processes and metacognitive skills (Andrade, 2019; Zimmermaan & Cleary, 2006). Indeed, the relationship between metacognition and self-efficacy in our mediation analysis was statistically significant, confirming that effective metacognitive strategies are associated with high levels of self-efficacy (Cera et al., 2013; Pintrich, 2010).

In addition, metacognitive skills indirectly affect the relationship between all interpersonal skills and the perception of self-efficacy. Thus, the awareness of own cognitive processes and the ability to control them helps in strengthening the association between adolescents' interpersonal skills and self-efficacy. In this regard, it has been shown that metacognitive abilities effectively promote and improve social and interpersonal skills. In this regard, Harandi et al. (2013) assessed the effects of metacognitive strategy training on social skills in high school girls, showing that the enhancement of metacognitive skills was associated with significant improvement in social skills in the study sample. Similarly, Whetstone et al. (2017) applied a social skills program based on metacognitive strategies with ten at-risk students in a rural high school. The results confirmed that the acquisition of appropriate metacognitive skills resulted in a significant improvement in adolescents' social skills and behaviors. However, it would be interesting to understand better the exact nature of the relationship between metacognition and life skills and whether the hypothesis according to which life skills are a part of metacognitive thinking can be considered valid (Joseph et al., 2010).

As in previous studies on the topic, this study confirmed the relevance of enhancing and developing life skills to improve self-efficacy, metacognitive abilities, and psychological well-being during adolescence. More specifically, our results underlined the fundamental role of interpersonal skills in enhancing the ability of adolescents to adequately face the challenges related to this particular period of development with the confidence of being able to overcome them as well as the awareness of the processes underlying learning which is crucial for a positive school experience.

5. Limitations and Strengths

One of the strengths of our study is to investigate psychological constructs that are very important during adolescent development and whose relationship is still poorly investigated in the literature. Furthermore, in light of the growing attention to soft skills and their importance in educational and work contexts, our study represents a valuable contribution in highlighting the fundamental role of these interpersonal skills during adolescence.

Nevertheless, some limitations are to be considered. First, the cross-sectional design of our study cannot prove causation because all the variables cannot be determined. Secondly, self-report questionnaires were used in this study; thus, the reliability of the responses and the consequent self-report bias cannot be proved. Finally, other important variables that are significantly associated with the psychological well-being of adolescence were not included in this study, as self-concept and locus of control, resilience, and self-esteem.

6. Conclusions

In conclusion, this study highlights the significant impact of social and interpersonal skills, self-efficacy, and metacognitive skills on adolescents' quality of life and perception of stress. These findings suggest the need for specific programs to improve life skills and for further research to evaluate their effectiveness in improving other skills in addition to those investigated in this study, such as self-esteem and resilience.

Conflict of Interest Statement

The authors declare that the research was conducted in the absence of any potential conflict of interest.

Informed Consent: All adult participants involving in the study provided written informed consent.

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