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How Labor Values Affect Adolescent Resilience?—Analysis Based on the Perspective of Emotion Regulation Theory

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ABSTRACT: Background: Understanding the factors that influence adolescent psychological resilience is critical for promoting mental health. This study explores the impact and mechanism of labor values on adolescent psychological resilience from the perspective of emotion regulation theory. **Methods:** This study conducted an in-depth analysis using the Labor Value Scale on 2691 elementary school upper-grade students, middle school students, and high school students. **Results:** The results show that: (1) labor values can positively predict adolescents' mental resilience; (2) cognitive reappraisal and expression inhibition play a partial mediating role in the relationship between labor values and adolescents' psychological resilience. Among them, labor values can positively predict adolescents' mental resilience through positive cognitive reappraisal, and labor values can also predict adolescents' mental resilience through expression inhibition. **Conclusion:** Based on the theory of emotion regulation, this study explores the direct effect of labor values on mental resilience and the mediating effect of different strategies of emotion regulation. The results of this study provide a theoretical basis for improving the mental resilience of adolescents.

KEYWORDS: Adolescent; labor values; resilience; emotional regulation; structural equation model

1 Introduction

Psychological resilience, also known as resilience, refers to an important coping and adaptive capacity of individuals in the face of negative events [1,2]. Psychological resilience is not only an important indicator of maintaining an individual's mental health but also one of the most important indicators of positive adolescent development [3]. Adolescent research should be devoted to nurturing and enhancing adolescents' ability to resolve personal troubles and escape from distress. The promotion of psychological resilience is crucial for adolescents. Therefore, it is crucial to explore the potential influences that promote psychological resilience in adolescents.

Since the 1970 and 1980s, protective factors and mechanisms of action on psychological resilience have been discovered and identified at different levels, including individual, family, and community [4]. Family, community, and society, as important environments for individuals to grow up in, correspond to external protective factors for individuals. In contrast, the psychological traits of social competence, self-esteem, autonomy, sense of purpose, and sense of meaningfulness correspond to the intrinsic protective factors of the individual. Although the literature on psychological resilience has focused more on the intrinsic protective factors and mechanisms of individual psychological resilience, there has been little discussion on how labor values affect adolescents' psychological resilience. In China, Labor, as a unique activity of human beings,



is an essential characteristic that distinguishes humans from animals and is also the basis for the survival and development of human society [5]. The new “Compulsory Education Labor Curriculum Standards (2022 Edition)” [6] released by the Ministry of Education in 2022 changed labor from a comprehensive practical activity curriculum to an independent curriculum, reinforcing the important role of labor in youth education. How do we understand the purpose and meaning of labor education? The perspective on the relationship between labor values and the psychological resilience of adolescents can give us new insights.

This study examines the influence of labor values on adolescents’ psychological resilience and its mechanisms of action based on emotion regulation theory. According to Ochsner et al.’s [7] model of cognitive control of emotions, emotions originate from multiple appraisal systems, and emotion regulation is an interactive process between bottom-up and top-down appraisal systems. According to emotion appraisal theory, the top-down process of emotion appraisal views emotions as the result of cognitive processes. Cognitive processes determine the meaning of stimuli in the context of the individual’s current goals and needs [8]. Values are a preferred disposition that meets people’s needs, a conceptual system that guides people’s cognitive judgments, choices, and behavioral practices, and a cognitive representation of the ideal way of behavior or end state [9]. Thus, values influence individuals’ emotional regulation. Labor values, as an important component of values, may also have an impact on emotion regulation. In addition, emotion regulation is an important factor that influences individual psychological resilience. According to Dolcos et al. [10], emotion regulation ability is one of the most important personal attributes that affect psychological resilience. Based on this, a preliminary logical relationship between labor values, emotion regulation, and psychological resilience can be established. That is, labor values may influence individual psychological resilience by affecting emotion regulation.

1.1 Labor Values and Psychological Resilience

Currently, there is no direct research on the relationship between labor values and psychological resilience. However, the existing studies on the relationship between values and psychological resilience help understand the relationship between labor values and psychological resilience. Values are a system of perceptions that people use to distinguish between good and bad, beauty and ugliness, profit and loss, right and wrong, and conformity to their wishes according to certain criteria [9]. Values act as guiding principles in the lives of individuals or other social entities, which is critical to our understanding of what psychological resilience can offer, and for whom. Research shows a positive correlation between values and psychological resilience [11]. Specifically, values affect individuals’ psychological resilience in four main ways: First, correct values can clarify and strengthen the direction of individuals’ lives and motivate them to maintain an open and flexible attitude when encountering difficulties and adversities to take the necessary actions to get out of them. Second, values influence individual adaptability through their important role in individual agency and social learning. In turn, adaptability is seen as an important expression of psychological resilience. Third, positive values enable individuals to have the ability to maintain high levels of self-efficacy and thus maintain a high level of psychological resilience. Fourth, values can help individuals increase psychological resilience through perceived organizational resilience and proactive help-seeking. Studies of disaster relief behavior in the Philippines and Mexican American college students have found similar findings [12,13]. Research with adolescents indicates that having positive values helps elementary school students to continue to seek social engagement in the face of rejection and thus excel in psychological resilience. As one of the important elements of values, labor values are one of the most fundamental values of individuals that are rooted in labor practices and derived from them. Labor values are people’s general views and fundamental perspectives on the state and extent to which labor satisfies human needs, and are the intrinsic needs of individuals and the traits or attributes of labor that they pursue when engaging in activities [14]. In some mental health studies,

labor values have also been shown to be closely related to individuals' psychology and behavior, and labor values can positively predict individuals' mental health [14].

1.2 Labor Values and Emotion Regulation

Labor values not only directly influence individuals' psychological resilience but also indirectly influence psychological resilience by affecting individuals' emotion regulation. Emotion regulation is the process by which individuals consciously manage and change their emotions and is "the process by which individuals regulate which emotions they have when they have them, and how they express and experience them" [15], and includes two common strategies: cognitive reappraisal and expressive inhibition [16]. Of these, cognitive reappraisal refers to changing the perception and assessment of emotional events and emotional consequences, whereas expression inhibition is viewed as a strategy by which individuals change their emotional reflections by inhibiting emotional expression [17]. Expression suppression is usually associated with negative emotions, whereas cognitive reappraisal reduces individuals' negative emotional experiences and is an adaptive emotion regulation strategy [17,18]. Individuals' emotion regulation and emotion socialization differ in terms of values. In other words, values have an important influence on individuals' emotion regulation and emotion socialization [19]. From the perspective of labor values, positive labor values point to personal qualities such as patience, rationality, and perseverance. In general, the more positive labor values are, the more individuals can make rational judgments about emotional events and avoid acting blindly. Labor values have a positive influence on individuals' cognitive reappraisal. In addition, the more positive an individual's labor values are, the more collectivistic he or she is. And collectivism is thought to have some possible inhibitory effect on individual expression. That is, labor values can positively predict expression inhibition. In collectives, people tend to hold back on individual assertions most of the time for the collective good or to accommodate the feelings of others [20,21]. So labor values can positively predict expression inhibition.

1.3 Emotional Regulation and Psychological Resilience

Emotion regulation is equally closely related to psychological resilience [22]. Research has shown that emotion regulation can be effective in improving individuals' psychological resilience [22,23]. Psychological resilience requires flexibility to adapt emotion regulation strategies to different situational demands [2,7,23]. Those who adaptively regulate emotions exhibit higher levels of psychological resilience [24]. Conversely, difficulties in emotion regulation were verified to be negatively associated with psychological resilience [25]. In terms of specific mechanisms of action, emotion regulation supports psychological health and well-being and helps to cope with negative life events and stress [26]. Specifically, both dimensions of emotion regulation, cognitive reappraisal, and expression inhibition, have an impact on individual psychological resilience. In studies on caregivers of patients with schizophrenia, positive cognitive reappraisal is effective in enhancing individual problem-solving skills by modulating individual cognition, shifting attention, etc., thereby enhancing the psychological resilience of patients' caregivers [27,28]. Troy et al. [29] and Fritz et al. [30] found that assessing and interpreting difficult situations experienced by individuals more positively to reduce negative emotions is an important way to enhance individuals' psychological resilience. Waugh et al. [31], on the other hand, found that cognitive reappraisal of stressful stimuli can promote individuals' psychological resilience by facilitating the return of physiological systems to normal levels and the successful use of environmental stressors. It is important to note that in contrast to cognitive reappraisal, which positively affects psychological resilience, expression suppression usually leads to depression and may result in lower interpersonal satisfaction. This hurts the psychological resilience of individuals [22,32]. Overall, emotion

regulation has an important impact on the psychological resilience of individuals. Emotion regulation training is also considered a practical intervention to promote psychological resilience in individuals [33,34].

In summary, this study focuses on the relationship between labor values and adolescents' psychological resilience, and the complex mediating mechanism of emotion regulation in it. Based on the above analysis, we propose the following research hypotheses: H1: labor values can positively predict individuals' psychological resilience; H2: cognitive reappraisal and expression inhibition play a mediating role between labor values and psychological resilience.

2 Methods

2.1 Participants

The study used a whole group sampling method to survey 2749 students in two elementary schools, two middle schools, and one high school in Dongguan, China, and deleted some of the subjects who did not complete the questionnaire or had obvious problems filling in the answers (the criteria for deletion were: one-third of the questionnaire was not completed; the questionnaire had obvious patterns, such as filling in the same option on one or more consecutive pages, and in addition, multiple consecutive questions were filling in the same option), and finally obtained a valid The valid sample was 2691 people, and the effective recovery rate was 97.89%. The specific information of the sample is 1504 boys and 1187 girls; the overall average age is 12.50 ± 2.00 , the age range is 9–18 years old; 1303 elementary school students, 673 junior high school students, and 715 high school students. This study was reviewed and approved by the Ethics Committee of Hunan Normal University with the ethics approval number (2024 No. 030). The specific process of the survey: consent was first obtained from the schools where you were located, and teachers or parents were informed by the school authorities to obtain informed consent, based on which a uniform 40-min period was reserved for the specific administration of the test. The researcher was involved in the entire administration process, and standardized instructions were used. For the elementary student sample, consent must be obtained from the teacher and parents of the class in which they are enrolled based on their consent, while for middle school and high school students, their consent is required.

2.2 Measurement

2.2.1 Labor Values Scale

This study used the labor values questionnaire developed by Chao et al. [35], which had 15 questions and developed an overall labor values questionnaire in five areas: honesty, equality, cherishing, loving, and distribution according to work. Example questions are as follows: I enjoy the process of labor; I respect different professional workers equally, whether they are cleaners or engineers, etc. A 5-point scale was used, with 1 representing disagreeing and 5 representing strongly agreeing. The higher the score, the more positive the individual's labor values. Since the scale was developed based on upper elementary school grades, validated factor analysis was used in this study to explore the applicability of the scale to middle and high school groups. The validation factor analysis indicators were as follows: $2(78) = 7.118$, $p < 0.001$; Goodness-of-fit Index (GFI) = 0.93, CFI = 0.92, Root Mean Square Error of Approximation (RMSEA) = 0.076, Standardized Residual Mean Root (SRMR) = 0.0583. All indexes meet the requirements of measurement and the overall reliability coefficient is 0.81. In this study, the Klonbart α coefficient of the scale was 0.832.

2.2.2 Emotional Regulation

Emotion regulation was measured using the Emotion Regulation Scale developed by Gross et al. [16], which has 10 items and includes two measurement dimensions, cognitive reappraisal, and expressive

inhibition. The scale is scored on a 1–5 point Likert scale, with higher scores indicating higher levels of emotion regulation measure use. The analysis of Chinese junior high school students' emotion regulation using the Gross scale by Qiao [36] showed that the scale also had good reliability in the Chinese sample (0.762, 0.679). In the present study, the reliability of the two dimensions of the emotion regulation scale measure was 0.791 and 0.651, respectively.

2.2.3 Psychological Resilience

The Positive Development Scale for Chinese adolescents developed by Shek et al. [37] was used. The scale has 15 subscales, and only the Psychological Resilience subscale was used in this study. A 6-point scale was used, with 1 indicating “strongly disagree” and 6 indicating “strongly agree”. In this study, the internal consistency coefficient α of this subscale was 0.89.

2.3 Statistical Analysis

Data analysis was performed using SPSS22.0 and AMOS22.0. Firstly, descriptive statistics and correlation analysis were carried out for all variables in SPSS22.0. Secondly, according to the research hypothesis, a structural model is constructed in AMOS22.0, and the fitting degree of the model is analyzed. Finally, the Bootstrap method was used to further examine the mediating effects of cognitive reappraisal and expression inhibition on labor values and psychological resilience. The analysis software of this study used SPSS22.0.

3 Results

3.1 Common Method Bias

Since the variables in this study were from the same participants, common method bias (CMB) may exist, so we used Harman's one-way test to test the severity of CMB in this study before analyzing the data and found that the first factor explained 32.67% of the variance, which was less than the critical criterion of 40%, indicating that there is no serious common methodology bias in the data.

3.2 Descriptive Statistics and Correlation Analysis

In Table 1, the results of descriptive statistics and correlation analysis showed that all four variables were significantly correlated with each other. Specifically, labor values were significantly and positively correlated with cognitive reappraisal, expression inhibition, and psychological resilience.

Table 1: Descriptive statistics and correlation analysis of each variable

	M \pm SD	1	2	3	4
Labor values	59.03 \pm 8.65	–			
Cognitive reappraisal	17.61 \pm 3.99	0.431**	–		
Expressive suppression	16.73 \pm 3.75	0.320**	0.638**	–	
Resilience	15.04 \pm 2.76	0.509**	0.448**	0.297**	–

Note: ** $p < 0.01$, M = Mean, SD = Standard Deviation.

3.3 Assessment of the Rationality of the Structural Model

We first used SPSS (version 22.0) to explore whether labor values significantly predicted psychological resilience in the absence of mediating variables (i.e., cognitive reappraisal and expressive inhibition). The results indicated that labor values significantly predicted psychological resilience [$\beta = 0.509$, $p < 0.01$,

RMSEA = 0.057, SRMR = 0.0386, CFI = 0.955, AIC = 671.299, ECVI = 0.250] and that labor values can affect psychological resilience directly and also by affecting cognitive reappraisal and expression inhibition indirectly affect psychological resilience (Fig. 1).

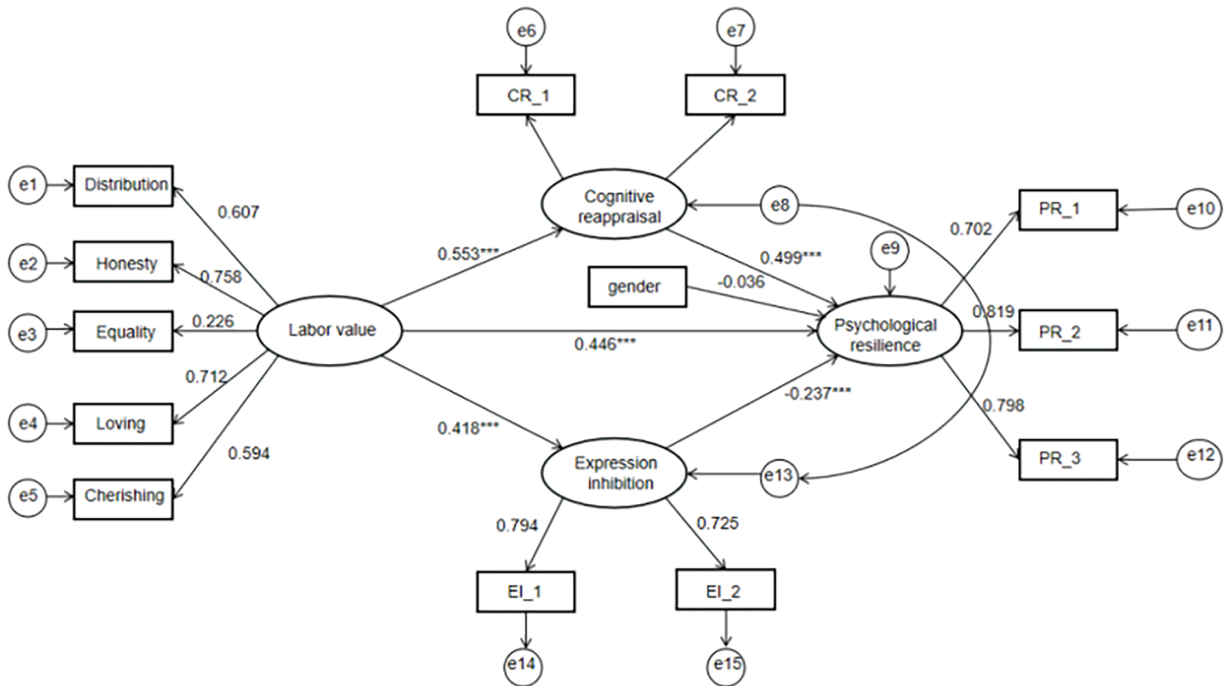


Figure 1: A structural model of the relationship between labor values, emotional regulation, and mental resilience (N = 2691) (Note: *** $p < 0.001$, CR = Cognitive reappraisal, PR = Psychological resilience, EI = Expression inhibition)

3.4 Significance Tests of Mediating Variables

Also, bootstrap estimation was used to explore the stability of the mediating effects. We randomly selected a bootstrap sample of 5000 (N = 2691) from the original data. As shown in Table 2, there was a significant positive relationship between cognitive reappraisal (95% confidence interval [0.078, 0.154]) and a significant negative relationship between expression suppression (95% confidence interval [-0.069, -0.018]) between labor values and psychological resilience.

Table 2: Non-standardized indirect effects and 95% confidence intervals

The mediation path	Estimate	Lower	Upper	p
Labor Values → Cognitive Reappraisal → Resilience	0.110	0.078	0.154	<0.001
Labor Values → Expressive Suppression → Resilience	-0.040	-0.069	-0.018	<0.001

3.5 Stability Analysis

To explore the stability of Model 1 at different stages (i.e., elementary, middle, and high school), the data were divided into three groups, i.e., elementary, middle, and high school groups. Then, we conducted a multi-group validation factor analysis on Model 1. Three different constrained models were constructed, namely Measurement weight, Structural covariances, and Measurement residuals, where Measurement weight was the least constrained and Measurement residuals were the most constrained. Once the measurement residuals model is acceptable, i.e., $p > 0.05$ for χ^2 , RMSEA < 0.08 , and GFI > 0.9 , then Model 1 is the same across stages of adolescence. In the present study, the results showed that the measurement weights [χ^2 (193, 2691) = 730.619, $p < 0.001$], structural covariance [χ^2 (235, 2691) = 1543.509, $p < 0.001$], and measurement residuals [χ^2 (267, 2691) = 2373.915, $p < 0.001$] and were unacceptable. Furthermore, the structural model comparison also showed that the structural model was unstable at different stages [$\Delta\chi^2$ (58, 2691) = 936.976, $p < 0.001$]. In this context, we further discussed the applicability of the different phase models. The results of the study showed that all three models fit well (see Table 3).

Table 3: Model fit indices for each academic period

	χ^2	<i>df</i>	CFI	RMSEA	SRMR	AIC	ECVI
Primary school group	258.993	59	0.960	0.051	0.0377	348.993	0.268
Middle school group	146.647	59	0.973	0.047	0.0390	236.647	0.352
High school group	200.872	59	0.957	0.058	0.0508	290.872	0.407

According to Fig. 2, it is clear that in the elementary, middle, and high school groups, labor values not only have a direct and positive effect on psychological resilience but can also directly and positively influence cognitive reappraisal and expressive inhibition. The difference is that in the elementary school group, the effect of cognitive reappraisal ($\beta = 0.447$, $p < 0.001$) on psychological resilience was significant, but the effect of expression suppression ($\beta = -0.190$, $p = 0.098$) on psychological resilience was not significant (see Fig. 2A). In the middle school group, the effects of both cognitive reappraisal ($\beta = 0.792$, $p < 0.001$) and expression suppression ($\beta = -0.528$, $p = 0.004$) on psychological resilience were significant (see Fig. 2B). In the high school group, there was also an effect of cognitive reappraisal ($\beta = 0.456$, $p < 0.001$) and expression suppression ($\beta = -0.133$, $p = 0.031$) on psychological resilience (see Fig. 2C).

Bootstrap mediation effect test further indicated that cognitive reappraisal across groups could mediate the effect of labor values on psychological resilience, whereas expression suppression in the middle school group only could mediate the effect of labor values on psychological resilience (see Table 4).

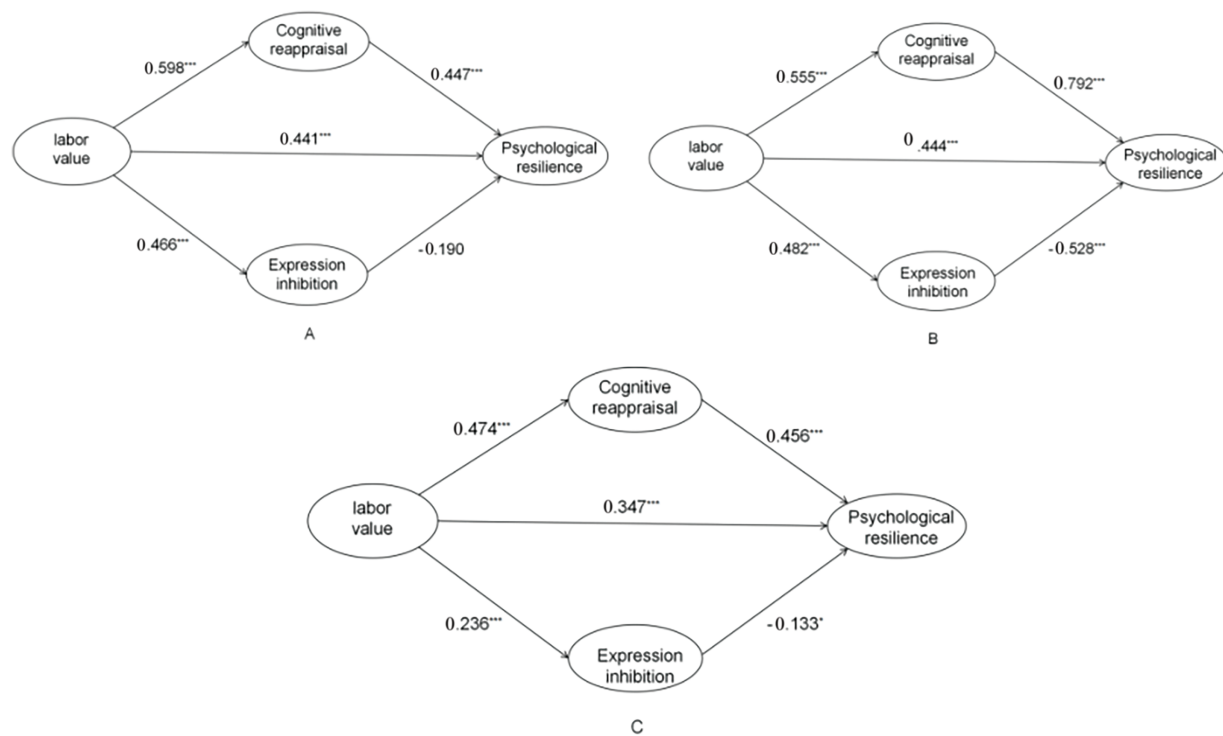


Figure 2: Mediation model of emotion regulation of different segments (Note: (A): Senior grade of primary school group; (B): Junior middle school group; (C): Senior middle school group. * $p < 0.05$, *** $p < 0.001$)

Table 4: Non-standard indirect effects and 95% confidence intervals for each school period

	The mediation path	Estimate	Lower	Upper	<i>p</i>
Primary school	Labor Values → Cognitive Reappraisal → Resilience	0.109	0.047	0.208	0.001
	Labor Values → Expressive Suppression → Resilience	-0.036	-0.104	0.006	0.103
Junior high school	labor Values → Cognitive Reappraisal → Resilience	0.173	0.091	0.406	0.001
	Labor Values → Expressive Suppression → Resilience	-0.100	-0.310	-0.035	0.001
Senior high school	labor Values → Cognitive Reappraisal → Resilience	0.090	0.054	0.134	0.001
	Labor Values → Expressive Suppression → Resilience	-0.013	-0.032	0.000	0.052

4 Discussion

This paper examines how labor values affect adolescent resilience, focusing on emotion regulation. By surveying 2691 students, we found that labor values positively predict resilience. Cognitive reappraisal and expression inhibition partially mediate this relationship. Our findings offer insights into enhancing adolescent resilience.

4.1 Positive Influence of Labor Values on Adolescents' Psychological Resilience

This study found that labor values can directly and positively influence adolescents' psychological resilience. The more positive the labor values are, the more psychologically resilient the adolescents are. Psychological resilience is influenced by many intra-individual factors, such as personality traits, value beliefs, and self-efficacy [38–40]. Individuals' value orientations are meaningful predictors of psychological

resilience [41]. Labor values are one of the important elements of values. Although the discussion of the relationship between labor values and psychological well-being is not common, studies have found an important role of labor values in predicting individual psychological well-being [14]. The influence of labor values on individual psychological health is reflected, on the one hand, in the fact that the more positive an individual's labor values are, the less likely he or she is to feel psychological distress [42,43]. On the other hand, labor values are effective in reducing anxiety, depression, and psychological stress in adolescents when they encounter difficult situations [35], and the study by Chao et al. [14] further indicates that labor values can be effective in suppressing psychological distress in adolescents. All of these studies are, to varying degrees, in line with our findings. In practice, the values and sense of meaning acquired through working in various labor experiences are strongly associated with improved and enhanced individual mental health outcomes. The more positive adolescents' labor values are, the more they can possess the personal quality of resilience, which is critical for improving adolescents' psychological adjustment and ability to cope with psychological distress [44]. Currently, both schools and families are paying particular attention to labor education for adolescents. The cultivation of labor values is precisely one of the important elements of labor education. Research in educational psychology confirms that through labor values education, positive psychological qualities of hard work, perseverance, and overcoming difficulties are cultivated in adolescents, which is conducive to the development of their adaptive skills [45]. Our study directly corroborates this result.

4.2 The Mediating Role of Emotion Regulation

Emotion regulation mediates the role between labor values and psychological resilience. However, the mediating role of the two dimensions of cognitive reappraisal and expressive inhibition differed. In general, labor values positively predicted cognitive reappraisal and expressive inhibition. However, cognitive reappraisal positively predicted psychological resilience, whereas expressive inhibition negatively predicted psychological resilience.

First, labor values positively predict adolescents' cognitive reappraisals and influence adolescents' psychological resilience by affecting individuals' cognitive reappraisals. The value element is related to the goals people pursue, and it influences what people wish to recognize and how they actually feel cognitively. And it is the logical cause of people's emotional regulation [46,47]. In Ochsner et al.'s [7] model of emotion control, cognitive control is in the important position of emotion control. They argued that emotions originate from multiple evaluation systems, among which values are an important factor influencing individual cognitive control. Mandelco et al. [48] model of children's psychological resilience also argued that value beliefs have an important role in individuals' cognitive change. Changes in cognitive styles are formally an important internal predictor of children's psychological resilience [48]. For adolescents, labor values can lead to a correct understanding of labor and its contribution to overall human development, and in particular, play a positive role in promoting cognitive reappraisal of adolescents' tendency toward pleasure and avoidance of suffering. Cognitive reappraisal can improve individuals' cognition through insightful metaphorical explanations, which can help people improve their heart distress and enhance adaptation [49]. According to McRae et al. [50], cognitive reappraisal enhances individuals' psychological resilience through four cognitive processing processes, including suppressing negative evaluations and generating alternative explanations, selecting and implementing a new evaluation, maintaining memory for the reappraisal strategy, and monitoring mood changes. In terms of specific cognitive reappraisal strategies, it is divided into self-directed and contextually oriented. Self-directed cognitive reappraisal strategies can help adolescents rationally see the adverse situation from a neutral or third-person perspective and thus adjust their distance from the negative psychological experience. In contrast, context-oriented cognitive reappraisal strategies enhance psychological resilience by reinterpreting negative events and giving them positive meaning [51].

IRRP (The International Resilience Research Project) also states that in adolescent education, cognitive adjustments regarding I have, I am, and I can be effective in improving adolescents' psychological resilience. Overall, cognitive reappraisal can improve psychological resilience by enhancing individuals' motivation and ability to adapt to their environment. This is consistent with the findings of our study.

Second, labor values positively predicted adolescents' expressive inhibition and expressive inhibition negatively influenced adolescents' psychological resilience. Theories of emotion socialization suggest that emotion regulation is profoundly influenced by different cultures and values [19]. Under the influence of different values, individuals will adopt the way they think is appropriate to regulate their emotional expression. In general, the more collective values and meaningful values are valued, the more individuals tend to control their emotional expressions, showing the characteristic of "not being angry with anger". Unlike the individualistic values of the West, in China, the core values of socialism guide people that labor is not only an important way to promote personal development and achieve individual happiness but also an important step to create history and achieve collective happiness. This is also an important part of current labor values education in schools. Under the guidance of such labor values, adolescents generally attach more importance to collective values and are willing to integrate their labor happiness into the labor happiness of the whole collective. Collectivist values have a more profound impact on individual adolescents. In this context, adolescents may show stronger expression inhibition [20]. Our study also confirms this. Furthermore, in terms of the relationship between expression inhibition and adolescent psychological resilience, child development research suggests that if children are better able to express their emotional experiences, this will significantly reduce their levels of depression, anxiety, and psychological stress [52]. The study by Liverant et al. [53] also indicated that expression suppression minimizes the individual's external negative emotional response, but it does not mean that the individual's internal negative emotion disappears. The individual's habitual repression of emotional expression may reduce his or her ability to regulate emotions or even develop an emotion regulation disorder. This is detrimental to an individual's psychological resilience [53]. This confirms the findings of our study. That is, the more positive the adolescent's work values are, the more he or she tends to suppress emotional expression, and expression suppression is not conducive to improving his or her psychological resilience. This corroborates the findings of related research on the superiority of cognitive reappraisal over expressive inhibition in emotion regulation [54]. This also reminds educators and parents that work values can influence adolescents' psychological resilience by affecting emotion regulation. However, unlike the positive mediating effect of cognitive reappraisal, expressive inhibition may have side effects. Labor values nurturing should also focus on guiding adolescents' reasonable emotional expression, which is conducive to improving children's psychological resilience.

5 Conclusion

The investigation and analysis of 2691 samples successfully confirm the positive correlation between labor values and adolescent mental resilience. In addition, this study uncovers the underlying psychological mechanisms driving this relationship, namely emotional regulation strategies, including cognitive reappraisal and expression inhibition, which play a partial mediating role. The methodology identifies and characterizes the mediating effects of these emotion regulation strategies on the relationship between labor values and adolescent mental resilience. Specifically, labor values positively influence mental resilience through cognitive reappraisal and expression inhibition, providing deeper insights into the pathways connecting these variables. The findings emphasize the importance of labor values and emotion regulation strategies in fostering mental resilience, offering a theoretical basis for interventions targeting adolescent mental health. Future research could extend the study to include larger or more diverse samples, exploring additional factors that mediate or moderate the relationship between labor values and mental resilience.

6 Limitations and Future Directions

This study has limitations in two aspects. First, regarding the study participants, this research only included senior primary school students, junior high school students, and high school students from Dongguan, Guangdong Province, China, which may affect the generalizability and representativeness of the sample. Future research could consider conducting similar investigations in other cities or regions to verify and expand upon the findings of this study. Second, in terms of research methodology, the cross-sectional design may not capture changes in adolescents' labor values and psychological resilience across different developmental stages. Future studies could adopt a longitudinal research approach to further explore the dynamic relationship between these two factors.

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Availability of Data and Materials: The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics Approval: The studies involving human participants were reviewed and approved by Ethics Committee of Hunan Normal University (2024 No. 030). Written informed consent to participate in this study was provided by the participants' legal guardian/next of kin.

Conflicts of Interest: The authors declare no conflicts of interest to report regarding the present study.

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