

# The Mediating Roles of Future Work Self and Hope on the Association Between Perceived Social Support and Depressive Symptoms Among Chinese Vocational School Students: A Cross-Sectional Study

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**Purpose:** Depressive symptoms are serious mental health problems, which are harmful for adolescents' physical and psychological development. Limited studies have focused on depressive symptoms of vocational high school students, who are more susceptible to mental health problems than high school students. Based on the main effect model of social support and self-regulation theory, the current study aims at exploring two potential mediating roles of hope and future work self on the relationship between perceived social support and depressive symptoms among vocational high school students by a cross-sectional study.

**Participants and Methods:** A total of 521 vocational high school students aged 14–21 ( $M = 16.45$ ;  $SD = 0.91$ ) participated in the survey. There were 266 males (51.1%) and 255 females (48.9%). The multidimensional scale of perceived social support, the future work self scale, the children's hope scale, and the center for epidemiologic studies depression scale were applied in the study.

**Results:** The results revealed that: (1) perceived social support, future work self, and hope were negatively related to depressive symptoms ( $r = -0.25$  to  $-0.35$ ,  $p < 0.001$ ); (2) students who perceived more social support have fewer depressive symptoms ( $\beta = -0.22$ ,  $p < 0.001$ ); (3) perceived social support predicted a more salient future work self and then was associated with higher levels of hope, which in turn, was related to lower levels of depressive symptoms ( $\beta = -0.02$ , and 95% CI =  $[-0.035, -0.005]$ ).

**Conclusion:** Perceived social support was the protective factor against vocational school students' depressive symptoms. More specifically, stronger perceived social support predicted a more salient future work self, which promoted high level of hope, and ultimately decreased vocational school students' depressive symptoms. The findings provide enlighten implications for interventions on depressive symptoms among vocational high school students.

**Keywords:** perceived social support, future work self, hope, depressive symptoms, vocational high school students

## Introduction

Depression is one of the most prevalent emotional disorders. Individuals who experience depression have the symptoms of sadness, inability to experience happiness, self-criticism, and physical symptoms such as impaired concentration, fatigue, powerlessness, insomnia, and disturbed appetite.<sup>1</sup> Adolescents aged 12 to 18 are vulnerable to depressive symptoms, and the risk will increase in adulthood.<sup>2,3</sup> Numerous studies reported high prevalence rates of depressive symptoms in adolescents from different countries.<sup>4-6</sup> A meta-analysis has found that the rate of depressive symptoms among high school students in China is 28%.<sup>4</sup> The prevalence of major depressive symptoms among adolescents aged 12 to 17 in the United States was 17%.<sup>5</sup> Among adolescents from 11 European countries, the rate of mild depressive

symptoms was 29.2% and the rate of depressive symptoms was 10.5%.<sup>6</sup> Moreover, depressive symptoms have a lasting and negative impact on adolescents' physical and psychological development.<sup>7</sup> For example, adolescents with depressive symptoms have low academic achievement, school dropout, alcohol abuse, suicidal behaviors, and poor career performance later in life.<sup>8–13</sup> Therefore, it is of great significance to investigate the factors that influence and intervene on adolescent depressive symptoms.

High school students and vocational high school students are in the same stage of development, while the training goals for them are quite different.<sup>14</sup> Compared with high schools which are academic-oriented and prepare students with academic skills to get access to higher education, vocational high schools are practice-oriented and qualify students with specific technical skills to enter the labor market.<sup>15</sup> Several developing countries, such as China, consider vocational education as a vital approach to ensure a skilled labor force, economic growth, and social progress.<sup>16</sup> However, by contrast to high school students, vocational high school students often report poorer academic achievement, more frequent problematic behaviors (eg, drinking and smoking), self-injurious behaviors, and a higher risk of mental health problems like depressive symptoms.<sup>17–23</sup> Thus, much attention should be paid to the physical and mental health of vocational school students, especially depressive symptoms. Empirical evidence from vocational high school students in China has found that depressive symptoms and stress are both risk predictors to internet addiction.<sup>24</sup> A study from Israel has demonstrated that vocational high school students with severe depressive symptoms are more susceptible to suicide ideation.<sup>25</sup> Thus, depressive symptoms are risk factor endangering the healthy growth of vocational high school students. However, existing research has seldom focused on the depressive symptoms of vocational high school students. Therefore, exploring the factors and mechanisms that affect depressive symptoms in this group is necessary.

Vocational high school students are the important part of the future labor force. However, vocational high school students are susceptible to depressive symptoms.<sup>22</sup> More attention should be paid to the mental health of vocational high school students. Perceived social support has been widely confirmed as a protective factor against depressive symptoms.<sup>26–28</sup> However, to our knowledge, few studies have explored the effect of perceived social support on depressive symptoms in a sample of vocational high school students. The current study will fill this gap and add values to the extant literature in theory and practice. Theoretically, the current study will not only enrich the research on depressive symptoms among vocational high school students, but also offer more comprehensive knowledge about the mechanisms how perceived social support affects depressive symptoms. Moreover, the current study will examine the main effect model of social support<sup>29</sup> and the self-regulation theory<sup>30</sup> with a sample of vocational high school students. Practically, the present research yields valuable insights regarding interventions to alleviate depressive symptoms and foster vocational school students' mental health. With the main effect model of social support<sup>29</sup> and self-regulation theory,<sup>30</sup> the current study explores the underlying mechanisms how perceived social support decreases depressive symptoms among vocational high school students.

## The Background of Theoretical Framework

The main effect model of social support is one of the major models that explain the protective roles of social support on mental health.<sup>31</sup> It posits that social support has a beneficial effect on people.<sup>32</sup> Many studies have documented the direct effect of perceived support on mental health (eg, depressive symptoms).<sup>33</sup> Also, adequate perceived social support benefits the development of positive psychology resources (eg, future work self and hope).<sup>34–36</sup> Self-regulation theory can explain how individuals set goals and regulate their actions to accomplish goals.<sup>30,37</sup> This theory proposes that self-relevant thoughts (eg, future work self) are the most important factors that influence goal-oriented behavior.<sup>30</sup> More specifically, self-relevant processes can influence goal construction and goal pursuit (eg, hope).<sup>38–40</sup> In sum, based on an integration of the main effect model of social support<sup>29</sup> and self-regulation theory,<sup>30</sup> the current study assumes that perceived social support can influence depressive symptoms in two ways. On the one hand, perceived social support has a direct impact on depressive symptoms. On the other hand, perceived social support can relieve depressive symptoms through the chain mediating roles of future work self and hope.

## Perceived Social Support and Depressive Symptoms

Perceived social support, a fundamental protective factor of adolescents, refers to subjective feelings of the spiritual and material assistance received from parents, friends, or significant others.<sup>41</sup> A great deal of research showed that perceived social support is beneficial to individuals' positive psychology capital such as hope, resilience, and self-esteem.<sup>42–44</sup> It is also a vital protective factor against depressive symptoms.<sup>45,46</sup> Parents are the essential component of adolescents' social networks, who can provide children with the basic need, such as emotional assistance and material resources.<sup>47</sup> Peer support allows adolescents to share similar experiences and interact positively, which can reduce the likelihood of depressive symptoms.<sup>48,49</sup> Teacher support, as an important source of social support for school-aged adolescents, not only can offer spiritual and informative assistance to make students feel loved, and learn problem-solving strategies, but decreasing depressive symptoms.<sup>50,51</sup> It is of interest whether perceived social support reduces depression in vocational high school students.

According to the main effect model of social support,<sup>29</sup> individuals can acquire positive experiences and social returns from their social networks, such as family, schools, and communities. Perceived social support is vital for vocational school students. For example, when facing with stressful life events, the females of secondary vocational school students with high levels of perceived social support report higher levels of subjective well-being.<sup>52</sup> Furthermore, perceived social support plays a moderated role on the relationship of family functioning and hope.<sup>53</sup> Although the alleviating role and mechanisms of perceived social support on depressive symptoms have been proposed by prior studies,<sup>26–28</sup> little is known about the influential role and mechanisms of perceived social support on depressive symptoms among vocational high school students. Thus, the current study aims to understand in depth how perceived social support affects depressive symptoms among vocational high school students.

## The Mediation Roles of Future Work Self and Hope

Future work self is one of the components of individuals' self-concepts, which is defined as a representation of self in the future and reflects individuals' expectations and ambitions in relation to work.<sup>54</sup> Self-concept possesses the function of regulating emotion.<sup>37</sup> Previous research has confirmed that unclear self-concept is relevant to anxiety and depressive symptoms.<sup>55</sup> Conversely, a salient future self can reduce depressive symptoms and predict positive outcomes (eg, career adaptability, life satisfaction).<sup>56,57</sup> Therefore, it is assumed that as a representation of self-concept in the work context, future work self also can regulate emotion. Hope, a core concept in positive psychology, is an active motivation state that includes pathway thinking and agency thinking.<sup>58</sup> Pathway thinking reflects individuals' ability to create routes to reach goals and agency thinking reflects individuals' motivation to use pathways to achieve their goals.<sup>59</sup> Hope can foster individuals' confidence and ability to achieve important tasks and deal with the challenges they meet, resulting in more positive experiences and fewer negative emotions.<sup>59</sup> Empirical findings have verified that high levels of hope can positively predict physical health and life satisfaction,<sup>57,60,61</sup> and reduce mental health problems.<sup>62,63</sup>

Support from parents, peers, and teachers can provide adolescents with informational and psychological support.<sup>64</sup> Social support is helpful for the shape of positive self-concept, then reduces the risk of mental health problems.<sup>34</sup> As an external resource, social support can also strengthen psychological resources such as hope, so as to alleviate stress and depressive symptoms.<sup>35,36</sup> Therefore, future work self and hope both are positive resources, which can play potential mediating roles in the relationship between perceived social support and depressive symptoms. According to the self-regulation theory, the possible self (eg, future work self) is a motivational resource, which can exert an effect on individuals' self-regulation process.<sup>30,56</sup> Individuals' ideas about what they want to be in the future can influence the process of goal construction, which enables individuals to concentrate on their goals and take effort to narrow the discrepancy between their current selves and ideal future selves.<sup>30,37,38</sup> The clear self-concept (eg, future work self) promotes individuals in a positive motivational state to strive for their goals, which also indicates high levels of hope.<sup>39,40</sup> Additionally, a survey has revealed that higher levels of family cohesion, that is, the more love and assistance students receive from their family, the clearer their self-concept is, which promotes the development of hope, and then improves subjective well-being.<sup>40</sup> Therefore, based on theoretical and empirical research, the present study hypothesizes that

vocational high school students with stronger perceived social support may have salient future work selves, which enhances hope and then alleviates depressive symptoms.

## The Current Study

The current study has three specific research questions. First, whether perceived social support, future work self and hope would be negatively associated with depressive symptoms? It is hypothesized that perceived social support, future work self, and hope are negatively related to depressive symptoms. Second, whether perceived social support predicts depressive symptoms under the conditions of excluding and including future work self and hope? It is hypothesized that individuals with more perceived social support would have less depressive symptoms, controlling for future work self and hope. Third, do future work self and hope mediate the effect of perceived support on depressive symptoms? It is hypothesized that there would be an indirect path from perceived social support to depressive symptoms through the serial mediating effect of future work self and hope. The conceptual model is displayed in [Figure 1](#).

## Materials and Methods

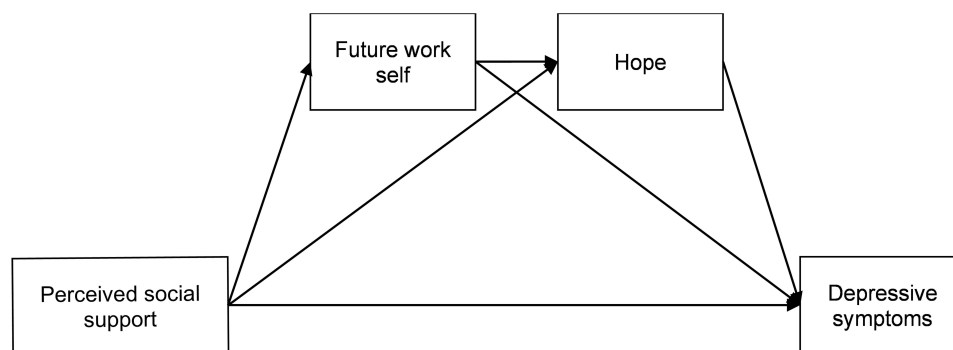
### Participants and Procedure

The study was conducted through an online questionnaire investigation lasting for one month (accessed from 15 December 2021 to 10 January 2022). A total of 876 vocational high school students from China were randomly selected to participate in this study via the popular Chinese professional online survey website Wenjuanxing ([www.sojump.com](http://www.sojump.com)). The number of participants with valid data was 521 (59.5% valid response rate). We inserted some attention checks throughout the survey (eg, “Please select strongly agree to show you are paying attention”) and students who failed to answer these items correctly were excluded from the present study. The abnormal answers and repeated selection of the same option were excluded. Informed consent was obtained from all students and their legal guardians. The study was approved by the Ethics Committee of the university. The age of the participants ranged from 14 to 21 ( $M=16.45$ ;  $SD=0.91$ ). A small minority did not report their age (0.1%). The sample consists of 266 males (51.1%) and 255 females (48.9%). Most students were in grade 1 ( $n=249$ ; 47.8%) and grade 2 ( $n=234$ , 44.9%), and 38 students (7.3%) were in grade 3.

## Measures

### Perceived Social Support

The Multidimensional Scale of Perceived Social Support<sup>41</sup> is used to assess the level of perceived social support. This scale is comprised of three subscales (family support, friend support, and other support) and each subscale contains 4 items. These items were rated on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Higher mean values represent higher levels of perceived social support. This scale was translated and adapted by Jiang and the psychometric properties of the scale were well proved in the Chinese context.<sup>65–67</sup> Cronbach’s alpha in the current study was 0.94. The composite reliability was 0.95, which was larger than 0.7. It indicated that the reliability is acceptable.<sup>68</sup>



**Figure 1** Conception model linking perceived social support and depressive symptoms.

The homogeneity coefficient was 0.55, which was larger than 0.5. It indicated the mean score of the total scale could well reflect the latent construct.<sup>69</sup>

### Future Work Self

The Chinese version of Future Work Self Scale,<sup>54,70</sup> which contains 4 items, is used to assess future work self salience. Each item is rated on a 7-point Likert scale ranging from “*strongly disagree*” to “*strongly agree*”. The higher mean values indicate clearer future work self-salience. The psychometric properties of the scale were well proved in the Chinese sample.<sup>70</sup> Cronbach’s alpha in the current study was 0.86. The composite reliability was 0.86. It indicated that the reliability was acceptable and the mean score of the scale could well reflect the latent construct.<sup>68</sup>

### Hope

The Children’s Hope scale<sup>71</sup> is used to measure the hopeful thinking of individuals. This scale is divided into two subscales (pathways thinking and agency thinking) and each subscale contains 4 items. These items were rated on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Higher mean values indicate that individuals are more hopeful about their future. This scale was translated and adapted by Tang and previous research had demonstrated this measure had good psychometric properties in Chinese background.<sup>72,73</sup> Cronbach’s alpha in the current study was 0.92. The composite reliability was 0.94 and the homogeneity coefficient was 0.66. It indicated that the reliability was acceptable and the mean score of the total scale could well reflect the latent construct.<sup>68,69</sup>

### Depressive Symptoms

The Chinese version of the Center for Epidemiologic Studies Depression Scale<sup>74,75</sup> is used to measure depressive symptomatology. This scale contains 20 items and 4 dimensions: depressed affect, positive affect, somatic and retarded activity, and interpersonal. Participants answered the items on a 4-point scale ranging from 1 (*rarely or none of the time*) to 4 (*most or all of the time*). Higher mean scores represent higher prevalence rates of depressive symptoms. The psychometric properties of the scale were well confirmed in the Chinese context.<sup>76,77</sup> Cronbach’s alpha in the current study was 0.90. The composite reliability was 0.94 and the homogeneity coefficient was 0.59. It indicated that the reliability was acceptable and the mean score of the total scale could well reflect the latent construct.<sup>68,69</sup>

## Data Analyses

All study variables were standardized before testing the hypothesized model which is presented in [Figure 1](#). Three steps were included in the analysis process using SPSS 24.0 and SPSS PROCESS 3.3.<sup>78</sup> First, descriptive statistics analysis and bivariate correlation were performed on all variables (N = 521). Second, the hierarchical regression model on depressive symptoms was conducted to test whether three study variables accounted for a significant amount of variance of depressive symptoms. Perceived social support was included in model 1 as a predictor of depressive symptoms, and then future work self and hope were added in model 2. Third, the mediation analysis was used to test the indirect effect of future work self and hope between perceived social support and depressive symptoms using PROCESS Model 6. The mediating effects were evaluated by setting 5000 bootstrap samples and 95% confidence intervals. All models included the following two control variables: age, gender (1 = male, 2 = female).

## Results

### Descriptive Statistics

The mean, standard deviations, and bivariate correlations of all study variables were displayed in [Table 1](#). The results demonstrated that future work self, hope, and perceived social support were positively associated with each other ( $r = 0.49$  to  $0.62$ ,  $p < 0.001$ ) and these three variables were all negatively correlated to depressive symptoms ( $r = -0.25$  to  $-0.35$ ,  $p < 0.001$ ).

### Predicting Variables for Depressive Symptoms

A hierarchical regression model on depressive symptoms was assessed to test the hypothesized relationships. Gender and age as the control variables were included in the model. [Table 2](#) summarizes the results of hierarchical regression model.

**Table 1** Means, Standard Deviations, and Correlations of the Study's Variables

	Variables	1	2	3	4	5	6
1.	Gender	–					
2.	Age	–0.06	–				
3.	Perceived social support	–0.03	–0.04	–			
4.	Future work self	–0.06	–0.02	0.49***	–		
5.	Hope	–0.15**	–0.02	0.62***	0.50***	–	
6.	Depressive symptoms	–0.13**	–0.06	–0.35***	–0.25***	–0.34***	–
	M	–	16.45	4.63	4.52	3.40	1.96
	SD	–	0.91	1.04	0.96	0.72	0.47

Notes: Gender: 1 = male, 2 = female; \*\**p* < 0.01, \*\*\**p* < 0.001.

**Table 2** Predicting Variables for Depressive Symptoms

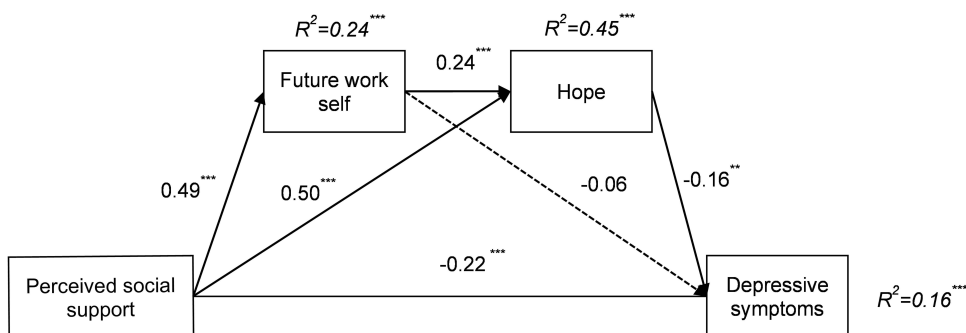
	Model 1 (Dependent Variable: Depressive Symptoms)		Model 2 (Dependent Variable: Depressive Symptoms)	
	$\beta$	<i>t</i>	$\beta$	<i>t</i>
Block 1				
Gender	0.25**	3.07	0.20*	2.49
Age	0.06	1.38	0.06	1.38
Perceived social support	–0.35***	–8.49	–0.22***	–4.12
Block 2				
Future work self			–0.06	–1.18
Hope			–0.16**	–2.89
	$R^2=0.14$ $F(3, 517) = 28.516***$		$R^2=0.16$ $F(5, 515) = 19.962***$	

Notes: Gender: 1 = male, 2 = female; \**p* < 0.05, \*\**p* < 0.01, \*\*\**p* < 0.001.

As expected, the results of model 1 indicated that higher levels of perceived social support significantly predicted lower levels of depressive symptoms,  $F(3, 517) = 28.516, p < 0.001$ . In model 2, results showed that future work self and hope were negatively and significantly associated with depressive symptoms,  $F(5, 515) = 19.962, p < 0.001$ .

### Mediation Analysis

The mediating roles of future work self and hope in the conceptual model were tested. Standardized path coefficient values were presented in Figure 2 and Table 3. There was a significant direct effect between perceived social support and depressive symptoms,  $\beta = -0.22, SE = 0.05$ , and 95% CI =  $[-0.327, -0.116]$ . The indirect effect of future work



**Figure 2** Standardized path coefficients for the model linking perceived social support and depressive symptoms.

Notes: Solid lines represent significant paths. \*\**p* < 0.01, \*\*\**p* < 0.001.



**Table 3** Mediation Effects of Future Work Self and Hope

Pathway	Estimated	95% CI
Total effect		
Perceived social support→depressive symptoms	-0.35	[-0.427, -0.266]
Direct effect		
Perceived social support→depressive symptoms	-0.22	[-0.327, -0.116]
Indirect effect		
Perceived social support→Future work self→depressive symptoms	-0.03	[-0.082, 0.025]
Perceived social support→Hope→depressive symptoms	-0.08	[-0.136, -0.022]
Perceived social support→Future work self→Hope→depressive symptoms	-0.02	[-0.035, -0.005]
Total indirect effect	-0.12	[-0.200, -0.045]

**Note:** number of bootstrap samples = 5000.

**Abbreviation:** CI, confidence interval.

self between perceived social support and depressive symptoms was not significant,  $\beta = -0.03$ ,  $SE = 0.03$ , and 95%  $CI = [-0.082, 0.025]$ . However, perceived social support could significantly predict depressive symptoms through hope,  $\beta = -0.08$ ,  $SE = 0.03$ , and 95%  $CI = [-0.136, -0.022]$ . Moreover, individuals with higher levels of perceived social support had higher levels of future work self, which was associated with higher levels of hope; ultimately, higher levels of hope related to lower levels of depressive symptoms,  $\beta = -0.02$ ,  $SE = 0.01$ , and 95%  $CI = [-0.035, -0.005]$ .

## Discussion

Depressive symptoms are one of the most prevalent psychological problems in adolescents. Increasing research have investigated the factors or mechanisms that can alleviate adolescents' depressive symptoms.<sup>79,80</sup> Vocational high school students are in the stage of adolescence and experience rapid changes in their physical growth and psychological development, who are vulnerable to depressive symptoms. However, few studies have explored the depressive symptoms of vocational high school students. Guided by the main effect model of social support<sup>29</sup> and self-regulation theory,<sup>30</sup> the goal of the present study was to investigate the potential protective role of perceived social support against depressive symptoms, and the underlying mechanisms linking perceived social support to depressive symptoms by identifying future work self and hope as two potential mediators among vocational high school students. Our findings showed that perceived social support predicted depressive symptoms directly and indirectly through the sequent mediating roles of hope and future work self.

## Perceived Social Support and Depressive Symptoms

We hypothesized that perceived social support was negatively related to depressive symptoms. Previous studies have found that individuals with more social support have fewer depressive symptoms.<sup>45,46,81,82</sup> In line with the main effect model of social support,<sup>29</sup> individuals with less perceived social support would take the surroundings as less supportive and less helpful, then they are more susceptible to emotional disorders. That means adequate support from significant others (eg, parents, peers, and teachers) can protect individuals from depressive symptoms by satisfying their basic needs.<sup>47,83</sup> For example, stable and high-quality support from parents can provide adolescents with basic needs, which has a positive effect on adolescents' psychological health and finally reduce depressive symptoms.<sup>47,82</sup> Furthermore, support from teachers and peers enables adolescents to maintain positive emotional experiences and a sense of belonging in school.<sup>48,84,85</sup> Our findings underlined the protective role of perceived social support on promoting vocational high school students' mental health. To avoid the prevalence of depressive symptoms among vocational high school students, parents and educators are advised to offer emotional and instrumental support for their children, and encourage the children to communicate with peers. These could help vocational school students overcome obstacles and accomplish their academic and career goals.

## The Mediating Roles of Future Work Self and Hope

The current study illustrated the underlying mechanisms between perceived support and depressive symptoms by identifying future work self and hope as two potential mediators. Consistent with the hypothesis, hope was found to be a significant mediator linking perceived social support and depressive symptoms. The role of future work self, however, did not mediate the relationship between perceived social support and depressive symptoms. Perceived social support is an essential source for the establishment and development of hope.<sup>86</sup> Adolescents with more social support get more access to spiritual and material assistance to engage in goal-oriented behaviors and generate high levels of hope, which can stimulate more positive emotions and avoid depressive symptoms.<sup>59,64,87</sup>

In line with the hypothesis, perceived social support was related to clearer future work selves, which in turn facilitated hope, and ultimately decreased depressive symptoms. Individuals perceived inadequate social support, who often had negative or unclear self-concept.<sup>29,88</sup> From the perspective of self-regulation theory, self-relevant concepts (eg, self-concept and future work self) serve as a function for motivating individuals to focus on their desired goals and persist in goal pursuit.<sup>30,39,54</sup> That's said, students who in a supportive and safe environment were more likely to obtain a clarified self-concept, which in turn enhanced hope, and ultimately benefited students' mental health.<sup>39</sup> Furthermore, perceived support from significant others (eg, caring, love, and valuing) can help individuals form positive views about themselves and a more hopeful attitude about their future, which provide individuals with positive resources and information to cope with difficulties and reduce depressive symptoms.<sup>34,35</sup> The present study extended the previous literature by demonstrating the potential chain mediation of future work self and hope on the relationship between perceived social support and depressive symptoms. These findings offer theoretical support for interventions to alleviate depressive symptoms by facilitating future work self and hope. For example, parents and teachers are advised to pay more attention to the needs of vocational high school students and give essential support for students to set and pursue career goals. Besides, it is suggested that schools should provide training programs and curriculums for vocational high school students to develop future work self and hope.

## Implications

The present study offers implications for adolescent depressive symptoms in some respects.

### Theoretical Implications

Our findings provide a more comprehensive understanding the mechanisms linking perceived social support and depressive symptoms, which enriches theoretical research on adolescent depressive symptoms. Additionally, the present study has verified the main effect model of social support<sup>29</sup> among vocational high school students and extended the self-regulation theory<sup>30</sup> by considering the role of career-related self-concept on goal-oriented behaviors.

### Practical Implications

In terms of practical value, our finding has demonstrated that perceived social support is an essential protective factor in decreasing depressive symptoms, as well as hope and future work self play important roles in this process. These suggest that parents, peers, and significant others should provide vocational high school students with social support and positive resources (eg, hope and future work self). There are some suggestions for parents and educators.

#### Parents

Parents are the important source of social support for adolescents. Parents play a crucial part in the physical and psychological growth of their children.<sup>89</sup> Parents are advised to provide children with not only material assistance but also moral support to inspire them to construct and pursue academic or career goals. Moreover, parents should show more concern about their children's emotions and feelings and offer effective assistance when their children feel confused about academic and career tasks.

#### Educators

Education has a great impact on the development of vocational school students. Educators should take action to protect students from mental health problems. Teachers are advised to communicate frequently with vocational high school



students to understand their inner feelings or needs. Also, it is suggested that teachers should offer necessary information and effective strategies to help them shape a clear and positive future work self and strive for a prospective future. Vocational high schools should pay more attention to students' mental health and interpersonal communication activities with their teachers and peers, providing students with a safe environment to talk about their negative experiences or emotions and preventing students from emotional distress such as depressive symptoms. Moreover, vocational high schools provide effective career guidance for students to establish suitable career goals and feasible plans to realize goals.

## Limitations

There are some limitations of this study that can be further discussed in the future.

First, the emotion regulation function of future work self was not supported in the current study. The reason may be that other dimensions of future work self (eg, elaboration) make a difference in individuals' mental health which were not considered in this study. Future studies should explore the effect of future work self on depressive symptoms by incorporating different attributes of future work self. Second, a cross-sectional study design was conducted for this study, which prevents us from drawing causal conclusions. Common method bias was checked by Harman's single factor test. The result revealed that the first factor explained 30.5% of the total variance, which was considered as acceptable.<sup>90</sup> However, to explicitly infer the causal relationship among variables, longitudinal research can be carried out in the future to examine the temporal sequence mediation model. Finally, the present study relied solely on self-report data, which can be influenced by social desirability bias and common method bias. For example, for the measurement of depressive symptoms, adolescents may deliberately conceal and underreport their real emotional states. Future studies could collect data from diverse information sources to reduce these biases.

## Conclusion

Perceived social support is a stable protective factor against depressive symptoms. Various research on the mechanisms by which perceived social support influences adolescent depressive symptoms has focused on the population of high school students while overlooking the sample of vocational high school students. Guided by the main effect model of social support and self-regulation theory, the current study offered more knowledge about the potential mechanism by which perceived social support is related to depressive symptoms among vocational high school students. The results provided evidence for the effect of perceived social support on depressive symptoms among vocational high school students. The findings of the current study shed light on depressive symptoms prevention programs among vocational high school students. Educators and parents are advised to provide vocational high school students with adequate assistance and support to reduce the incidence of depressive symptoms by enhancing their future work selves and hope.

## Ethical Approval

The study was conducted according to the guidelines of the Declaration of Helsinki, and approved by the local Ethics Committee of the School of Psychology, South China Normal University (SCNU-PSY-2022-041).

## Funding

This work was supported by the Postgraduate Research and Innovation Fund from School of Psychology, South China Normal University: "Research on Vocational High School Students' Career Adaptability: Based on Career Construction Theory" [Grant Numbers: PSY-SCNU202136].

## Disclosure

Yingshi He and Qing Zeng are co-first authors for this study. The authors declare no conflicts of interest in this work.

## References

1. World Health Organization. Depression and other common mental disorders: global health estimates. Available from: <https://apps.who.int/iris/handle/10665/254610>. Accessed March 28, 2023.

2. Johnson D, Dupuis G, Piche J, Clayborne Z, Colman I. Adult mental health outcomes of adolescent depression: a systematic review. *Depress Anxiety*. 2018;35(8):700–716. doi:10.1002/da.22777
3. Stevanovic D, Jancic J, Lakic A. The impact of depression and anxiety disorder symptoms on the health-related quality of life of children and adolescents with epilepsy. *Epilepsia*. 2011;52(8):e75–e78. doi:10.1111/j.1528-1167.2011.03133.x
4. Yu G. Chinese students' mental health problems: the detection rate and educational implications [In Chinese]. *Tsinghua J Educ*. 2022;43(04):20–32. doi:10.14138/j.1001-4519.2022.04.002013
5. The National Institute of Mental Health. Prevalence of major depressive episode among adolescents; 2020. Available from: <https://www.nimh.nih.gov/health/statistics/major-depression>. Accessed March 28, 2023.
6. Balázs J, Miklósi M, Keresztény A, et al. Adolescent subthreshold-depression and anxiety: psychopathology, functional impairment and increased suicide risk. *J Child Psychol Psychiatry*. 2013;54(6):670–677. doi:10.1111/jcpp.12016
7. Clayborne ZM, Varin M, Colman I. Systematic review and meta-analysis: adolescent depression and long-term psychosocial outcomes. *J Am Acad Child Adolesc Psychiatry*. 2019;58(1):72–79. doi:10.1016/j.jaac.2018.07.896
8. Alaie I, Philipson A, Sregonja R, et al. Adolescent depression and adult labor market marginalization: a longitudinal cohort study. *Eur Child Adolesc Psychiatry*. 2022;31(11):1799–1813. doi:10.1007/s00787-021-01825-3
9. Lew B, Huen J, Yu P, et al. Associations between depression, anxiety, stress, hopelessness, subjective well-being, coping styles and suicide in Chinese university students. *PLoS One*. 2019;14(7):e0217372. doi:10.1371/journal.pone.0217372
10. Maurizi LK, Grogan-Kaylor A, Granillo MT, Delva J. The role of social relationships in the association between adolescents' depressive symptoms and academic achievement. *Child Youth Serv Rev*. 2013;35(4):618–625. doi:10.1016/j.childyouth.2013.01.006
11. Naicker K, Galambos NL, Zeng Y, Senthilselvan A, Colman I. Social, demographic, and health outcomes in the 10 years following adolescent depression. *J Adolesc Health*. 2013;52(5):533–538. doi:10.1016/j.jadohealth.2012.12.016
12. Quiroga CV, Janosz M, Bisset S, Morin AJS. Early adolescent depression symptoms and school dropout: mediating processes involving self-reported academic competence and achievement. *J Educ Psychol*. 2013;105(2):552–560. doi:10.1037/a0031524
13. Torikka A, Kaltiala-Heino R, Luukkaala T, Rimpelä A. Trends in alcohol use among adolescents from 2000 to 2011: the role of socioeconomic status and depression. *Alcohol Alcohol*. 2017;52(1):95–103. doi:10.1093/alcalc/agw048
14. Wang A, Guo D. Technical and vocational education in China: enrolment and socioeconomic status. *J Vocat Educ Train*. 2019;71(4):538–555. doi:10.1080/13636820.2018.1535519
15. Loyalka P, Huang X, Zhang L, et al. The impact of vocational schooling on human capital development in developing countries: evidence from China. *World Bank Econ Rev*. 2016;30(1):143–170. doi:10.1093/wber/lhv050
16. Yi H, Li G, Li L, et al. Assessing the quality of upper-secondary vocational education and training: evidence from China. *Comp Educ Rev*. 2018;62(2):199–230. doi:10.1086/696920
17. Chen P-L, Huang W, Chuang Y-L, Warren CW, Jones NR, Asma S. Prevalence of tobacco use among junior high and senior high school students in Taiwan. *J Sch Health*. 2008;78(12):649–654. doi:10.1111/j.1746-1561.2008.00361.x
18. Coledam DHC, Frotta BM, Ré AHN. General versus vocational education in high school: cross-sectional associations with student's health. *J Sch Health*. 2022;92(6):570–580. doi:10.1111/josh.13165
19. Feng Y, Newman IM. Estimate of adolescent alcohol use in China: a meta-analysis. *Arch Public Health*. 2016;74(1):45. doi:10.1186/s13690-016-0157-5
20. Horváth LO, Balint M, Ferenczi-Dallos G, et al. Direct Self-Injurious Behavior (D-SIB) and life events among vocational school and high school students. *Int J Environ Res Public Health*. 2018;15(6):1068. doi:10.3390/ijerph15061068
21. Huang GC, Okamoto J, Valente TW, et al. Effects of media and social standing on smoking behaviors among adolescents in China. *J Child Media*. 2012;6(1):100–118. doi:10.1080/17482798.2011.633411
22. Burcu Ö, Neslihan G. Investigation of depressive symptom prevalence and affecting factors in high school students: an epidemiological research. *Anatolian J Psychiatry*. 2019;21(2):203–210. doi:10.5455/apd.54064
23. Xu J, Shen LX, Yan CH, et al. Personal Characteristics Related to the Risk of Adolescent Internet Addiction: a Survey in Shanghai, China. *BMC Public Health*. 2012;12:1106. doi:10.1186/1471-2458-12-1106
24. Gao M, Teng Z, Wei Z, et al. Internet addiction among teenagers in a Chinese population: prevalence, risk factors, and its relationship with obsessive-compulsive symptoms. *J Psychiatr Res*. 2022;153:134–140. doi:10.1016/j.jpsychires.2022.07.003
25. Benatov J, Nakash O, Chen-Gal S, Brunstein Klomek A. The association between gender, ethnicity, and suicidality among vocational students in Israel. *Suicide Life Threat Behav*. 2017;47(6):647–659. doi:10.1111/sltb.12332
26. Chen CY, Lien YJ. Trajectories of co-occurrence of depressive symptoms and deviant behaviors: the influences of perceived social support and personal characteristics. *Child Youth Serv Rev*. 2018;95:174–182. doi:10.1016/j.childyouth.2018.10.037
27. Grey I, Arora T, Thomas J, Saneh A, Tohme P, Abi-Habib R. The Role of Perceived Social Support on Depression and Sleep during the COVID-19 Pandemic. *Psychiatry Res*. 2020;293:113452. doi:10.1016/j.psychres.2020.113452
28. Xia H, Han X, Cheng J, Liu D, Wu Y, Liu Y. Effects of negative life events on depression in middle school students: the Chain-mediating roles of rumination and perceived social support. *Front Psychol*. 2022;13:781274. doi:10.3389/fpsyg.2022.781274
29. Lakey B, Cohen S. Social support theory and measurement. In: Cohen S, Underwood LG, Gottlieb BH, editors. *Social Support Measurement and Intervention: A Guide for Health and Social Scientists*. Oxford University Press; 2000:29–52. doi:10.1093/med:psych/9780195126709.003.0002
30. Carver CS, Scheier MF. *On the Self-Regulation of Behavior*. Cambridge University Press; 1998; doi:10.1017/CBO9781139174794
31. Cohen S, Wills TA. Stress, social support, and the buffering hypothesis. *Psychol Bull*. 1985;98(2):310–357.
32. Lakey B, Cronin A. Low social support and major depression: research, theory and methodological issues. In: Dobson KS, Dozois D, editors. *Risk Factors for Depression*. San Diego, CA: Academic Press; 2008:385–408.
33. Beeble ML, Bybee D, Sullivan CM, Adams AE. Main, mediating, and moderating effects of social support on the well-being of survivors of intimate partner violence across 2 years. *J Consult Clin Psychol*. 2009;77(4):718–729. doi:10.1037/a0016140
34. Xu Q, Li S, Yang L. Perceived social support and mental health for college students in Mainland China: the mediating effects of self-concept. *Psychol Health Med*. 2019;24(5):595–604. doi:10.1080/13548506.2018.1549744
35. Bao Y, Li L, Guan Y, et al. Is the relationship between social support and depressive symptoms mediated by hope among Chinese central nervous system tumor patients? *Support Care Cancer*. 2019;27(1):257–263. doi:10.1007/s00520-018-4321-z

36. Lazarus R, Folkman S. *Stress, Appraisal, and Coping*. New York: Springer; 1984.
37. Markus H, Wurf E. The dynamic self-concept: a social psychological perspective. *Ann Rev Psychol*. 1987;38(1):299–337. doi:10.1146/annurev.ps.38.020187.001
38. Bolkan C, Hooker K, Coehlo D. Possible selves and depressive symptoms in later life. *Res Aging*. 2015;37(1):41–62. doi:10.1177/0164027513520557
39. Fite RE, Lindeman MIH, Rogers AP, Voyles E, Durik AM. Knowing oneself and long-term goal pursuit: relations among self-concept clarity, conscientiousness, and grit. *Pers Individ Dif*. 2017;108:191–194. doi:10.1016/j.paid.2016.12.008
40. Xiang G, Li Q, Du X, Liu X, Xiao M, Chen H. Links between family cohesion and subjective well-being in adolescents and early adults: the mediating role of self-concept clarity and hope. *Curr Psychol*. 2022;41(1):76–85. doi:10.1007/s12144-020-00795-0
41. Zimet GD, Dahlem NW, Zimet SG, Farley GK. The multidimensional scale of perceived social support. *J Pers Assess*. 1988;52(1):30–41. doi:10.1207/s15327752jpa5201\_2
42. Bareket-Bojmel L, Shahar G, Abu-Kaf S, Margalit M. Perceived social support, loneliness, and hope during the COVID-19 pandemic: testing a mediating model in the UK, USA, and Israel. *Br J Clin Psychol*. 2021;60(2):133–148. doi:10.1111/bjc.12285
43. Liu G, Pan Y, Ma Y, Zhang D. Mediating effect of psychological suzhi on the relationship between perceived social support and self-esteem. *J Health Psychol*. 2021;26(3):378–389. doi:10.1177/1359105318807962
44. Yuan G, Goh PH, Xu W, An Y. Perceived social support mediates the relations between parental attachment and posttraumatic growth and resilience in adolescents following the Yancheng Tornado. *J Aggress Maltreat Trauma*. 2018;27(6):631–644. doi:10.1080/10926771.2018.1474986
45. Eagle DE, Hybels CF, Proeschold-Bell RJ. Perceived social support, received social support, and depression among clergy. *J Soc Pers Relat*. 2019;36(7):2055–2073. doi:10.1177/0265407518776134
46. Hua Z, Ma D. Depression and perceived social support among unemployed youths in China: investigating the roles of emotion-regulation difficulties and self-efficacy. *Int J Environ Res Public Health*. 2022;19(8):4676. doi:10.3390/ijerph19084676
47. Gariépy G, Honkaniemi H, Quesnel-Vallée A. Social support and protection from depression: systematic review of current findings in western countries. *Br J Psychiatry*. 2016;209(4):284–293. doi:10.1192/bjp.bp.115.169094
48. Glickman EA, Choi KW, Lussier AA, Smith BJ, Dunn EC. Childhood emotional neglect and adolescent depression: assessing the protective role of peer social support in a longitudinal birth cohort. *Front Psychiatry*. 2021;12:681176. doi:10.3389/fpsyg.2021.681176
49. Young JF, Berenson K, Cohen P, Garcia J. The role of parent and peer support in predicting adolescent depression: a longitudinal community study. *J Res Adolesc*. 2005;15:407–423. doi:10.1111/j.1532-7795.2005.00105.x
50. Li W, Gao WY, Fu WD. When does teacher support reduce depression in students? The moderating role of students' status as left-behind children. *Front Psychol*. 2021;12:608359. doi:10.3389/fpsyg.2021.608359
51. Liu K, Zhang Q. Parent-child perception differences in home-based parental involvement and children's mental health in China: the effects of peer support and teacher emotional support [published online ahead of print, 2023 Jan 30]. *Psych J*. 2023. doi:10.1002/pchj.630
52. Ouyang M, Gui D, Cai X, et al. Stressful life events and subjective well-being in vocational school female adolescents: the mediating role of depression and the moderating role of perceived social support. *Front Psychol*. 2021;11:603511. doi:10.3389/fpsyg.2020.603511
53. Peng S, Peng R, Lei H, Liu W. Family functioning and problematic behavior among secondary vocational school students: the mediating role of hope and the moderating role of perceived social support. *Pers Individ Dif*. 2023;207:112156. doi:10.1016/j.paid.2023.112156
54. Strauss K, Griffin MA, Parker SK. Future work selves: how salient hoped-for identities motivate proactive career behaviors. *J Appl Psychol*. 2012;97(3):580–598. doi:10.1037/a0026423
55. Richman SB, Pond RS, Dewall CN, Kumashiro M, Slotter EB, Luchies LB. An unclear self leads to poor mental health: self-concept confusion mediates the association of loneliness with depression. *J Soc Clin Psychol*. 2016;35(7):525–550. doi:10.1521/jscp.2016.35.7.525
56. McElwee RO, Haugh JA. Thinking clearly versus frequently about the future self: exploring this distinction and its relation to possible selves. *Self Identity*. 2010;9:298–321. doi:10.1080/15298860903054290
57. Zeng Q, He Y, Li J, et al. Hope, future work self and life satisfaction among vocational high school students in China: the roles of career adaptability and academic self-efficacy. *Pers Individ Dif*. 2022;199:111822. doi:10.1016/j.paid.2022.111822
58. Snyder CR, Irving L, Anderson JR. *Hope and Health: Measuring the Will and the Ways*. Snyder CR, Forsyth DR, eds.. Elmsford (NY): Pergamon; 1991.
59. Snyder CR. Hope theory: rainbows in the mind. *Psychol Inq*. 2002;13(4):249–275. doi:10.1207/s15327965pli1304\_01
60. Lucas AG, Chang EC, Morris LE, et al. Relationship between hope and quality of life in primary care patients: vitality as a mechanism. *Soc Work*. 2019;64(3):233–241. doi:10.1093/sw/swz014
61. O'Sullivan G. The relationship between hope, eustress, self-efficacy, and life satisfaction among undergraduates. *Soc Indic Res*. 2011;101:155–172. doi:10.1007/s11205-010-9662-z
62. Luo X, Wang Q, Wang X, Cai T. Reasons for living and hope as the protective factors against suicidality in Chinese patients with depression: a cross sectional study. *BMC Psychiatry*. 2016;16:252. doi:10.1186/s12888-016-0960-0
63. Muyan M, Chang EC, Jilani Z, Yu T, Lin J, Hirsch JK. Loneliness and negative affective conditions in adults: is there any room for hope in predicting anxiety and depressive symptoms? *J Psychol*. 2016;150(3):333–341. doi:10.1080/00223980.2015.1039474
64. Cohen S. Social Relationships and Health. *Am Psychol*. 2004;59(8):676–684. doi:10.1037/0003-066X.59.8.676
65. He F, Zhou Q, Li J, Cao R, Guan H. Effect of social support on depression of internet addicts and the mediating role of loneliness. *Int J Ment Health Syst*. 2014;8:34. doi:10.1186/1752-4458-8-34
66. Kong F, Zhao J, You X. Emotional intelligence and life satisfaction in Chinese University students: the mediating role of self-esteem and social support. *Pers Individ Dif*. 2012;53(8):1039–1043. doi:10.1016/j.paid.2012.07.032
67. Jiang Q. The multidimensional scale of perceived social support. *Chin J Behav Med Brain Sci*. 2001;10(10):41–43.
68. Bentler PM. Alpha, dimension-free, and model-based internal consistency reliability. *Psychometrika*. 2009;74(1):137–143. doi:10.1007/s11336-008-9100-1
69. Gu H, Wen Z. Reporting and interpreting multidimensional test scores: a bi-factor perspective. *Psychol Dev Educ*. 2017;33(04):504–512.
70. Guan Y, Guo Y, Bond MH, et al. New job market entrants' future work self, career adaptability and job search outcomes: examining mediating and moderating models. *J Vocat Behav*. 2014;85(1):136–145. doi:10.1016/j.jvb.2014.05.003
71. Snyder CR, Hoza B, Pelham WE, Rapoff M, Ware L, Danovsky M. The development and validation of the children's hope scale. *J Pediatr Psychol*. 1997;22(3):399–421. doi:10.1093/jpepsy/22.3.399

72. Du H, King RB, Chu SK. Hope, social support, and depression among Hong Kong youth: personal and relational self-esteem as mediators. *Psychol Health Med.* 2016;21(8):926–931. doi:10.1080/13548506.2015.1127397
73. Jiang X, Shi D, Topps AK, Archer CM. From family support to goal-directed behaviors: examining the mediating role of cognitive well-being factors. *J Happiness Stud.* 2020;21:1015–1035. doi:10.1007/s10902-019-00117-7
74. Radloff LS. The CES-D scale: a self-report depression scale for research in the general population. *Appl Psychol Meas.* 1977;1(3):385–401. doi:10.1177/014662167700100306
75. Chen Z, Yang X, Li X. Psychometric features of CES-D in Chinese adolescents. *Chin J Clin Psychol.* 2009;17(04):443–445.
76. Chin WY, Choi EP, Chan KT, Wong CK. The psychometric properties of the center for epidemiologic studies depression scale in Chinese primary care patients: factor structure, construct validity, reliability, sensitivity and responsiveness. *PLoS One.* 2015;10(8):e0135131. doi:10.1371/journal.pone.0135131
77. Li Z, Wang Y, Mao X, Yin X. Relationship between hope and depression in college students: a cross-lagged regression analysis. *Personal Ment Health.* 2018;12(2):170–176. doi:10.1002/pmh.1412
78. Hayes AF, Rockwood NJ. Conditional process analysis: concepts, computation, and advances in the modeling of the contingencies of mechanisms. *Am Behav Sci.* 2020;64(1):19–54. doi:10.1177/0002764219859633
79. Chen C, Lian S, Sun X, Chai H, Zhou Z. The effect of social network sites addiction on adolescents' depression: mediating role of cognitive overload and core self-evaluation. *Psychol Dev Educ.* 2018;34(2):210–218. doi:10.16187/j.cnki.issn1001-4918.2018.02.10
80. Su Q, Liu G. Depression in Chinese adolescents from 1989 to 2018: an increasing trend and its relationship with social environments. *Curr Psychol.* 2022;41:6966–6977. doi:10.1007/s12144-020-01181-6
81. Hellfeldt K, López-Romero L, Andershed H. Cyberbullying and psychological well-being in young adolescence: the potential protective mediation effects of social support from family, friends, and teachers. *Int J Environ Res Public Health.* 2019;17(1):45. doi:10.3390/ijerph17010045
82. Stice E, Ragan J, Randall P. Prospective relations between social support and depression: differential direction of effects for parent and peer support? *J Abnorm Psychol.* 2004;113(1):155–159. doi:10.1037/0021-843X.113.1.155
83. Sun Y, Lin SY, Chung KKH. University students' perceived peer support and experienced depressive symptoms during the COVID-19 pandemic: the mediating role of emotional well-being. *Int J Environ Res Public Health.* 2020;17(24):9308. doi:10.3390/ijerph17249308
84. Gunuc S, Dogan A. The relationships between Turkish Adolescents' internet addiction, their perceived social support and family activities. *Comput Human Behav.* 2013;29(6):2197–2207. doi:10.1016/j.chb.2013.04.011
85. Luo Y, Xiang Z, Zhang H, Wang Z. Protective factors for depressive symptoms in adolescents: interpersonal relationships and perceived social support. *Psychol Sch.* 2017;54(8):808–820. doi:10.1002/pits.22033
86. Kemer G, Atik G. Hope and social support in high school students from urban and rural areas of Ankara, Turkey. *J Happiness Stud.* 2012;13(5):901–911. doi:10.1007/s10902-011-9297-z
87. Feng L, Yin R. Social support and hope mediate the relationship between gratitude and depression among front-line medical staff during the pandemic of COVID-19. *Front Psychol.* 2021;12:623873. doi:10.3389/fpsyg.2021.623873
88. Streamer L, Seery MD. Who am I? The interactive effect of early family experiences and self-esteem in predicting self-clarity. *Pers Individ Dif.* 2015;77:18–21. doi:10.1016/j.paid.2014.12.034
89. Zeng Q, Li J, Huang S, et al. How does career-related parental support enhance career adaptability: the multiple mediating roles of resilience and hope. *Curr Psychol.* 2022. doi:10.1007/s12144-022-03478-0
90. Podsakoff PM, MacKenzie SB, Podsakoff NP. Sources of method bias in social science research and recommendations on how to control it. *Annu Rev Psychol.* 2012;63:539–569. doi:10.1146/annurev-psych-120710-100452

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