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Mediating Role of Coping Style in the Relationship between Psychological Capital and Depression among Self-harming Students

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Abstract

Background: Self-inflicted harm in the younger population is a significant matter of public health, entailing numerous physical, psychological, and societal detriments.

Objectives: The present study aimed to assess the mediating role of coping style in the relationship between psychological capital and depression in adolescents engaged in self-harming behaviors.

Methods: The current study utilized a descriptive correlational, cross-sectional design, employing structural equation modeling. The target population consisted of adolescents engaged in self-harming in Tehran from April to November 2023. The purposive sampling method was employed to select a cohort of 145 adolescents engaged in self-harming. The research tools comprised the Beck Depression Inventory-II, the coping strategies questionnaire, and the Luthans Psychological Capital Questionnaire. Descriptive statistics were analyzed using SPSS software (version 27), while the path coefficient between variables was conducted using SmartPLS software (version 4).

Results: Based on the results, "hope" exerted a favorable and notable impact on some factors, including attracting social support, cognitive assessment, emotional restraint, and physical restraint (P<0.05). Nonetheless, this component had a detrimental impact on depression (β=-0.282; P<0.001). In a similar vein, optimism demonstrated a significant and positive effect on attracting social support, emotional restraint, problem-solving, and physical restraint (P<0.05).

Conclusion: Considering the favorable effect of psychological resources on how individuals deal with challenges, it is advisable to organize training programs within educational institutions and counseling centers, focusing on highlighting the role of coping strategies.

Keywords: Coping style, Depression, Psychological capital, Self-harm, Students

1. Background

Academic life holds the utmost significance for students, exerting marked effects on various dimensions of their lives. Nevertheless, students may encounter difficulties and challenges, one of which is engagement in self-harming behaviors (1). These behaviors encompass purposeful acts of harming or modifying body tissues in the absence of suicidal intent. Although such behaviors tend to diminish over time, they frequently contribute to long-lasting and profound social impairments that adversely impact various aspects of individuals' lives (2). Self-harming behaviors involve a wide array of behaviors, such as strangulation, self-poisoning, laceration, asphyxiation, leaping from elevated structures, initiating an inferno, or consuming an excessive amount of drugs. These detrimental behaviors possess the potential to result in fatalities, as well as severe and irreversible life-altering outcomes for individuals (3).

Epidemiological investigations have indicated that approximately 14% of adolescents engage in various forms of self-harming behaviors throughout their lifetimes. On the contrary, the prevalence of self-harm among Iranian students is significantly lower, estimated at around 6.2% (1). It has been found that individuals who have limited social support and experience higher levels of instability are more prone to engagement in suicidal tendencies and self-harming behaviors (4). Further research indicates that the absence of psychological capital can serve as an indicator of self-harming behaviors in individuals (5). Psychological capital encompasses a multitude of personality traits, including hope, self-efficacy, optimism, and resilience, which serve as a valuable resource.

These traits play a crucial role in regulating individuals' behaviors and thoughts, particularly for students, making psychological capital a vital factor with the potential to impact various positive outcomes. Each component of psychological capital affects an individual's perception of self and life aspirations (6). In this context, a study by Sobhani et al. (2023) revealed that the propensity of self-harming behaviors in female adolescents aged 13-15 is affected by psychological capital and family functioning (5). According to another study, the enhancement of psychological capital and emotion regulation can improve psychological wellbeing among individuals with suicidal ideation (7).

The absence of psychological resources in individuals can diminish their mental wellbeing and contribute to depression. To be precise, psychological resources are significantly correlated with negative

emotions and depression (8). Depression is a prevalent occurrence among teenagers, resulting in various psychological and physical harm with potential consequences, such as self-harming behavior (9). Studies have revealed that depression and emotional instability are the primary factors associated with self-harming behavior (10). In a similar vein, in their research, Hamdan-Mansour et al. (2021) noted that about one-third of students who contemplated self-harm experienced moderate to severe depression (11).

Adolescents tend to acquire particular abilities, assets, and approaches to manage depression and stress, which are referred to as coping (12). Moreover, self-harm is closely linked to higher levels of Emotion-focused coping (13). Coping can be characterized as individuals' cognitive and behavioral endeavors to effectively handle, diminish, or endure internal and external pressures encountered during stressful circumstances. These coping mechanisms can be either advantageous or detrimental (14).

Adaptive coping entails employing adaptable techniques to resolve difficulties or effectively manage the emotions that accompany them. This process involves the formulation of effective plans, reassessment of circumstances, as well as the management and articulation of one's emotions. On the other hand, maladaptive coping pertains to actions that are detrimental, such as persistent brooding or resorting to depleting coping mechanisms, as well as implementing avoidance strategies, such as social seclusion, emotional repression, or disregarding one's own emotions (15). In their study, John et al. (2020) emphasized the importance of promoting coping strategies to support mental health and counteract suicidal thoughts and self-harm during extended periods of social isolation (16). A study focusing on adolescents exhibiting signs of depression found that coping styles play a key role in moderating the impact of social-emotional skills training on psychological distress and symptoms of social isolation (12). In addition, another research pointed to the direct correlation between mental wellbeing and mental assets, along with coping strategies focused on solving problems (17).

2. Objectives

the presence of various psychological and physical harms resulting from self-harm, as well as the alarming statistic indicating that approximately 10% of self-harm cases result in suicide within a decade, highlight the critical importance of this issue (3). However, despite its importance, no study has specifically assessed the mediating role of coping style in the relationship between psychological capital and depression among students engaging in self-harming. This study is one of the first to investigate how coping style affects the relationship between psychological capital and depression in students engaging in self-harming behaviors. In light of the aforementioned issues, the present study aimed to assess the impact of coping styles on the psychological capital and depression levels of students engaging in self-harming. Following this, the researcher created a conceptual model of the study, as displayed in Figure 1.

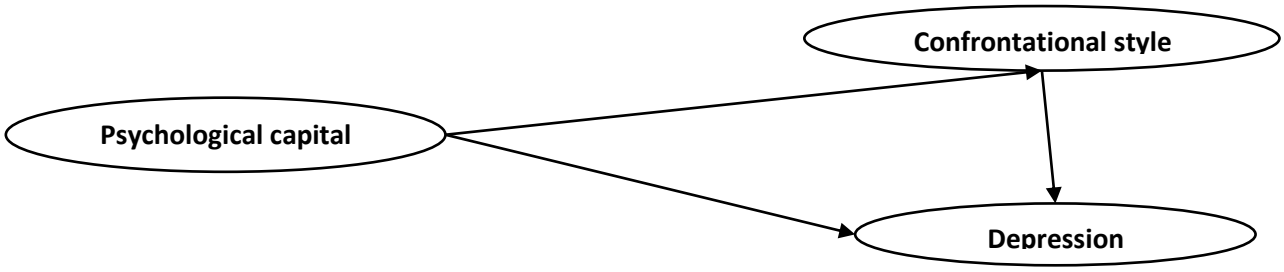

Figure 1. Conceptual framework of the research

3. Methods

This study was conducted based on a descriptive-correlational cross-sectional design employing Structural Equation Modeling (SEM). The target population for this research comprises all adolescent students who have previously engaged in self-harming behaviors in Tehran from April to November 2023.

The statistical population consisted of 200 adolescent individuals who had exhibited self-harming tendencies. As outlined by Loehlin and Beaujean (18), a sample size ranging from 200 to 350 participants is deemed appropriate for assessing the proposed model utilizing SEM. Therefore, the researcher employed a purposive sampling technique to select a cohort of 200 individuals. The inclusion criteria entailed a documented psychological history of self-harming behaviors, the voluntary consent of the participants, the authorization of teenagers' parents to partake in the study, and the requisite literacy and comprehension skills for responding to the inquiries. On the other hand, the exclusion criteria were the age range of over 19, the presence of any physical or mental condition that hindered their ability to respond, and a failure to answer more than

10 items in the questionnaires. The research was conducted using the following procedure: initially, the researchers obtained the required permissions from their university to carry out the study. Subsequently, psychology professors assisted in connecting the researchers with six psychology and counseling clinics in Tehran. The selection of these clinics was determined by considering such factors as the ease of coordination and execution of the research, as well as the possibility of collaboration.

Following that, the researchers visited the organized clinics and collaborated with the clinic's administration to carry out the study. The subsequent phase involved issuing an online announcement and posting it on social media platforms on behalf of the psychological clinics, targeting families whose children had a previous history of self-harming behavior and were being treated at the research site clinics. Due to the limitation of families with cooperative adolescents, there was a restricted number of participants available. The researcher handed out research surveys to the clinics and worked together with the reception department to make sure that teenagers who had previously self-harmed were invited to complete the surveys. Consequently, it took six months to gather 200 questionnaires.

Out of 200 completed questionnaires, 145 papers were included in the final analysis. The exclusion of 55 questionnaires was necessary since they either had incomplete responses or intentional errors during completion. Before administering the questionnaires, a consent form was obtained from participants in adherence to ethical guidelines. The individuals and their respective families were duly notified that their involvement in the study was optional, and they possessed the liberty to withdraw from the study at any given point. Furthermore, the subjects were assured of the confidentiality of their responses.

Beck Depression Inventory-II: In 1996, Beck et al. developed a questionnaire aimed at assessing depression and depressive symptoms in individuals (19). Comprising 21 questions, each item on this questionnaire is assigned a score ranging from 0-3. Scores from 0-13 suggest relative depression, 14-19 indicate mild depression, 20-28 demonstrate moderate depression, and 29-63 signify severe depression. The total score of the questionnaire falls within the range of 0-63. Concurrent validity of 0.79 and test-retest validity of 0.67 were reported by Beck et al. In Iran, a study reported a Cronbach's alpha coefficient of 0.92 (20). The researcher obtained a Cronbach's alpha coefficient of 0.782 for the scale.

The Coping Strategies Questionnaire (CSQ): Moss developed this questionnaire in 1981 to assess individuals' coping strategies in the face of challenges. This 32-item scale encompasses five coping strategies: problem-solving, emotional restraint, cognitive evaluation, physical restraint, and social support. Each item is rated on a four-point Likert scale from never to always. The scale has been used in research conducted in Iran, where the retest reliability coefficient was reported as 0.79. In addition, the researcher calculated the following Cronbach's alpha coefficients for each sub-scale: problem-solving (0.876), emotional restraint (0.88), cognitive assessment (0.886), physical restraint (0.885), and attracting social support (0.894).

Luthans Psychological Capital Questionnaires (PCQ): Lutans designed this scale in 2007 to assess individuals' psychological capital. This 24-item questionnaire comprises four subscales: hope, resilience, optimism, and self-efficacy, and each subscale consists of six items, which are rated on a 6-point scale. Scores for each component range from 6-36. The scale obtained a retest reliability coefficient of 0.88 in Iranian research. In addition, the Cronbach alpha coefficients of hope, optimism, self-efficacy, and resilience subscales were reported as 0.837, 0.822, 0.791, and 0.822, respectively.

Statistical analyses

Descriptive statistics were conducted using the SPSS software (version 27), while data trends and standard coefficients were analyzed using the SmartPLS software (version 4). The significance of the mediator variable was assessed using the Sobel test. The distribution of the research variables was checked for normality using the Kolmogorov-Smirnov test. The significant results of this test indicated that the research variables did not follow a normal distribution, leading to the utilization of SmartPLS. The sample size of 145 individuals was deemed sufficient to implement the structural equation model employing the partial least squares method. A significance level of 0.05 was set for the analysis.

4. Results

In this research, adolescents were assigned to three groups based on their age: 15-16 years old (61.4%), 16-17 years old (11.7%), and 18-19 years old (26.9%) (Table 1).

Table 2 shows the mean and standard deviation of the research variables. As illustrated in Table 3, there is a strong and negative association ($P<0.01$) between depression and various research variables, such as hope, optimism, self-efficiency, resilience, problem-solving, emotional restraint, cognitive assessment, physical restraint, and attracting social support.

Table 4 and Figure 2 demonstrate that hope had a beneficial and statistically significant effect on attracting social support, cognitive assessment,

emotional restraint, and physical restraint (P<0.05). Nevertheless, it had a negative impact on depression (β=-0.282; P<0.001). In a similar vein, optimism had a significant and positive impact on attracting social support, emotional restraint, problem-solving, and physical restraint (P<0.05). Nonetheless, it did not affect cognitive assessment (β=0.162; P =0.068). Simultaneously, it was found that depression was not directly significantly affected by optimism (β=0.016; P=0.752). Only physical restraint was significantly affected by self-efficiency (β=-0.509; P<0.001). Moreover, resilience positively and significantly impacted physical restraint and cognitive assessment (P< 0.05); however, it did not exhibit a direct and significant effect on depression (β=0.009: P=0.852).

Table 1. Demographic variables

Variables	Groups	Frequency	Percent	Median
Gender	Boy	91	62.8%	1
	Girl	54	37.2%	
Age	15 to 16	89	61.4%	1
	16 to 17	17	11.7%	
	18 to 19	39	26.9%	
Type of self-harm	Self-harm by cutting	24	16.6%	4
	Burning skin	23	15.9%	
	Hitting or biting	21	14.5%	
	Plucking hair	20	13.8%	
	Deliberately engaging in physically dangerous behaviors	20	13.8%	
	Punching yourself or a wall	22	15.2%	
	Other reasons	15	10.3%	

Table 2. Descriptive research variables

Variables	Mean± SD	Max	Min	Skewness	Kurtosis
Hope	17.17±4.793	29	10	0.592	0.022
Optimism	16.77±5.319	29	10	0.811	-0.323
Efficacy	17.71±4.796	29	10	0.449	-0.051
Resilience	18.22±4.300	29	10	0.293	0.164
Problem-solving	5.07±1.863	8	1	-0.34	-0.736
Emotional restraint	11.37±8.208	26	1	0.281	-1.428
Cognitive assessment	5.64±3.665	14	1	0.691	-0.741
physical restraint	17.91±4.782	24	7	-0.922	-0.26
Attracting social support	6.14±3.647	11	1	-0.003	-1.548
Depression	21.03±10.503	40	5	0.164	-1.49

Table 3. Pearson's correlation coefficient

Variables	1	2	3	4	5	6	7	8	9	10	P-value
Hope	-										p <0.001
Optimism	.513	-									p <0.001
Self-Efficiency	.776	.602	-								p <0.001
Resilience	.604	.556	.584	-							p <0.001
Problem-solving	.581	.510	.529	.396	-						p <0.001
Emotional restraint	.680	.606	.624	.532	.628	-					p <0.001
Cognitive assessment	.602	.513	.544	.616	.578	.773	-				p <0.001
physical restraint	.317	.424	.133	.124	.273	.298	.174	-			p <0.001
Attracting social support	.438	.427	.429	.382	.418	.639	.513	.168	-		p <0.001
Depression	-.789	-.592	-.691	-.565	-.754	-.756	-.745	-.392	-.546	-	p <0.001

Concerning the mediating factors, problem-solving, physical restraint, and cognitive assessment demonstrated a notable negative impact on depression (P< 0.05). Conversely, attracting social support and emotional restraint did not have a significant effect as mediating variables on depression (P>0.05). To determine the significance of the mediating variables in the study, the researcher employed the Sobel test, which was computed using the formula provided.

$$Z - value = \frac{a * b}{\sqrt{(b^2 * s_a^2) + (a^2 * s_b^2) + (s_a^2 * s_b^2)}}$$

The Sobel test can determine the significance of the mediating effect of a variable at a 95% confidence

level when the Z value exceeds 1.96. In the case of problem-solving acting as a mediator between hope and depression, the Z value was -3.289. Based on the data from the Sobel test, the mediating variable of the research is significant. The mediation of the problem-solving component with optimism and depression variables was determined to be -2.850, based on the value of z. The significance of the mediating variable in the research can be inferred from the results of the Sobel test.

In a similar way, the mediation of physical restraint between the efficacy and depression variables was found to be 2.6191, as indicated by the Z value. The significance of this mediating variable in

Table 4. Standard research coefficients, in general

Result of the hypothesis	Path coefficient	P-value	T-value	Result
Attracting social support -> Depression	-0.089	0.059	1.886	rejection
Cognitive assessment -> Depression	-0.281	p <0.001	4.255	confirmation
Self-Efficiency-> Attracting social support	0.086	0.451	0.754	rejection
Self-Efficiency-> Cognitive assessment	0.015	0.895	0.132	rejection
Self-Efficiency-> Depression	-0.121	0.074	1.784	rejection
Self-Efficiency-> Emotional restraint	0.069	0.469	0.724	rejection
Self-Efficiency-> Problem-solving	0.064	0.611	0.508	rejection
Self-Efficiency-> physical restraint	-0.509	p <0.001	4.794	confirmation
Emotional restraint -> Depression	0.004	0.965	0.044	rejection
Hope -> Attracting social support	0.206	0.05	1.957	confirmation
Hope -> Cognitive assessment	0.308	0.007	2.71	confirmation
Hope -> Depression	-0.282	p <0.001	4.04	confirmation
Hope -> Emotional restraint	0.432	p <0.001	4.321	confirmation
Hope -> Problem-solving	0.415	p <0.001	3.831	confirmation
Hope -> physical restraint	0.56	p <0.001	4.328	confirmation
Optimism -> Attracting social support	0.223	0.016	2.408	confirmation
Optimism -> Cognitive assessment	0.162	0.068	1.822	rejection
Optimism -> Depression	0.016	0.752	0.316	rejection
Optimism -> Emotional restraint	0.31	p <0.001	4.62	confirmation
Optimism -> Problem-solving	0.287	0.001	3.193	confirmation
Optimism -> physical restraint	0.574	p <0.001	6.56	confirmation
Problem-solving -> Depression	-0.299	p <0.001	6.303	confirmation
Resilience -> Attracting social support	0.084	0.298	1.042	rejection
Resilience -> Cognitive assessment	0.331	0.001	3.4	confirmation
Resilience -> Depression	0.009	0.852	0.187	rejection
Resilience -> Emotional restraint	0.058	0.454	0.749	rejection
Resilience -> Problem-solving	-0.052	0.576	0.56	rejection
Resilience -> physical restraint	-0.236	0.005	2.782	confirmation
Physical restraint -> Depression	-0.15	0.002	3.118	confirmation

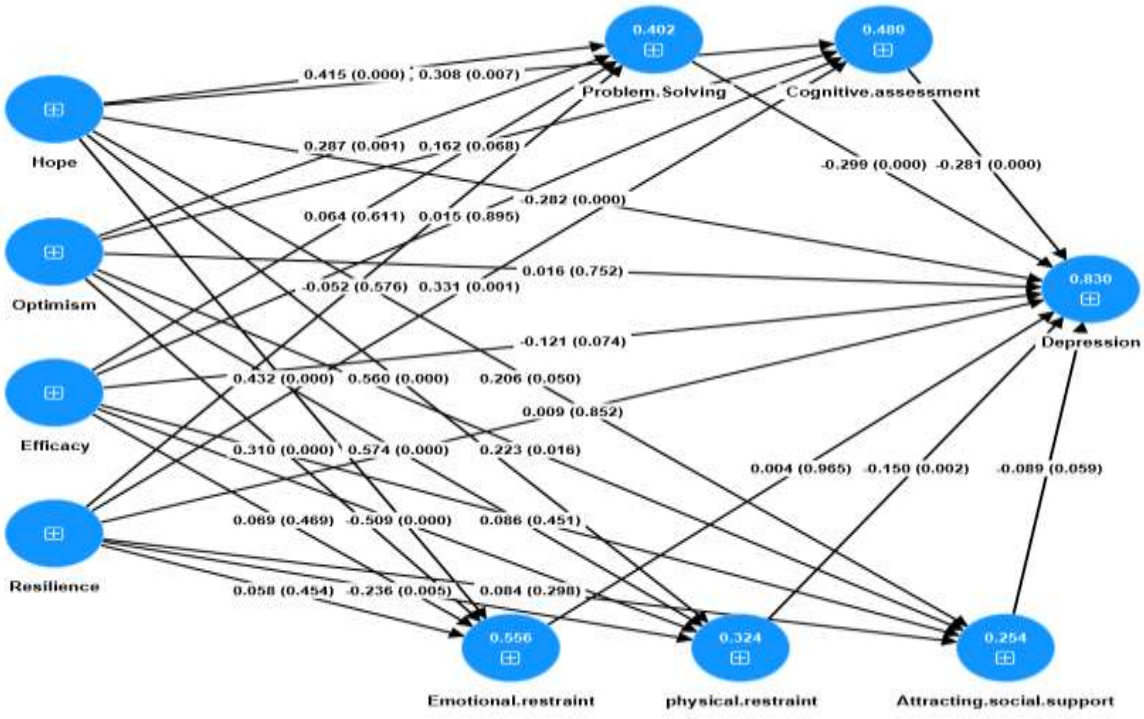

Figure 2. Path coefficients between variables and significance level

the research can also be concluded from the results of the Sobel test. The Z value for the mediator, physical restraint, between hope and depression was -2.536. Based on the results of the Sobel test, the mediating variable in the study was statistically significant. The Z value for the mediator, physical restraint, between optimism and depression was -2.818. Based on the results of the Sobel Test, the mediating variable in the research was statistically significant.

The Z value for the mediator between resilience and depression variables, specifically physical restraint, was measured as 2.0755. The results from the Sobel test pinpointed that this mediating variable was significant. Similarly, the Z value for the mediator between hope and depression, specifically cognitive assessment, was determined to be -2.281. The Sobel test results indicated that this mediating variable was also significant. Cognitive assessment served as a mediator between resilience and depression, with a Z value of -2.662. Based on the results from the Sobel test, the mediating variable in the study was statistically significant.

Table 5 displayed a Cronbach's alpha reliability above 0.7, indicating a satisfactory level of consistency. Moreover, the overall reliability of these variables was also above 0.7. The validity of the model has been verified. The standardized root mean square residual, which assesses the difference between the observed and structural model correlation matrices, yielded a score of 0.072. In addition, the normed fit index (NFI) score was determined to be 0.886, and the chi-value was noted as 118.627.

Table 5. Reliability and validity of the model

Variables	Cronbach's Alpha	Composite Reliability	Average variance extracted (AVE)
Hope	0.837	0.848	0.77
Optimism	0.822	0.838	0.89
Self-Efficiency	0.791	0.812	0.87
Resilience	0.822	0.841	0.65
Problem-solving	0.876	0.899	0.659
Emotional restraint	0.88	0.901	0.552
Cognitive assessment	0.886	0.906	0.866
physical restraint	0.885	0.905	0.75
Attracting social support	0.894	0.912	0.606
Depression	0.782	0.872	0.694

5. Discussion

This study aimed to examine how coping style acts as a mediator between psychological capital and depression in students engaging in self-harming. The findings indicated that hope had a favorable and meaningful impact on social support, cognitive evaluation, emotional control, and physical control (or externalizing problems). On the contrary, hope had an adverse effect on depression, reducing its intensity. Similarly, positivity also demonstrated a substantial and beneficial impact on the components associated with obtaining social assistance, regulating emotions, resolving issues, and controlling physical manifestations of problems. Nevertheless, this particular component did not prove effective in cognitive assessment and did not directly or significantly affect depressive tendencies. On the other hand, self-efficacy only significantly affected physical restraint (or somatization of problems).

Resilience was found to have a positive and significant effect on physical problem-solving and cognitive evaluation; however, it did not have a direct impact on depression. On the other hand, problem-solving, physical control, and cognitive assessment play a critical role in worsening depression as mediating factors. On the contrary, social support and emotional restraint did not contribute to depression as mediating variables. There is a lack of research assessing the direct impact of hope on emotional control and physical control. Nevertheless, previous studies generally pointed to the positive relationship between hope and strategies for dealing with difficult situations.

The results of this research align with previous studies regarding the positive effect of hope on gaining social support and cognitive evaluation, as well as its negative impact on depression (25-27). According to one study, hope and perceived social support have a reciprocal relationship, and hope is considered a stable and resilient factor in adolescents' positive psychological functioning (25). In addition, research findings indicated that hope leads to increased use of thoughts compared to despair when pleasant evaluation is salient (26). Furthermore, Chowet al. (2023) revealed significant mediation of depressive symptoms through improved hope, self-esteem, and wellbeing (27). When discussing this matter, it is important to note that hope is an acquired mindset regarding personal goals, and having a strong sense of hope can contribute to individuals attaining success in these goals (28). Conversely, when individuals encounter difficulties, they tend to employ strategies centered on emotions and seek others for help. The purpose of seeking social support is to help individuals recognize that there may exist a practical and logical approach to adapting to the situation. Social support

refers to a person's perception of the accessibility of external aid (29).

Hopeful individuals possess the ability to overcome challenges, feel capable and fulfilled, experience close connections with others, and have a strong sense of attachment. When confronted with obstacles and setbacks, they effectively utilize their talents and capabilities while maintaining robust and uplifting relationships with others (28). In the field of psychology, hope is described as a favorable state of motivation and a cognitive process that prompts purposeful progression toward a specific objective. It is closely linked to functions, such as psychological adaptation, physical wellbeing, and problem-solving ability (5).

The effect of optimism on emotional restraint and physical restraint has been studied for the first time, and there is currently no consistent and unrelated research specifically addressing this aspect. Nonetheless, in agreement with previous studies, this research confirmed that optimism has a significant and positive impact on receiving social support and problem-solving abilities (30-31). Prior research has indicated that higher levels of social support and optimism are linked to lower levels of depression and general anxiety (30). Furthermore, a study by Yao et al. in 2023 demonstrated that psychological capital, including optimism, has a beneficial effect on team performance and the ability to solve complex problems (31).

Optimism can be described as individuals' positive expectations for their future, which is associated with psychological and physiological wellbeing, life satisfaction, and work satisfaction (30). Those with an optimistic outlook tend to have greater confidence in the future and experience fewer psychological difficulties as they strive to maintain relationships and receive social support. Consequently, they are less inclined to engage in risky behaviors, such as self-harm (28). It is noteworthy that people's beliefs and coping strategies play a significant role in their psychological response to stressful health-related events, ultimately aiding in their ability to adapt and reduce mental distress. Coping entails a variety of psychological reactions to avoid or diminish threats, damage, loss, or distress. It is associated with improved physical and mental wellbeing when encountering different stressors. Having an optimistic mindset encourages the adoption of effective coping strategies, which assist in easing distress and preventing harm (32).

Inconsistent with previous studies (33-34), the current research revealed that optimism had no significant impact on depression. However, other studies have established a notable negative correlation between dispositional optimism and depression in young individuals (33). In addition, research indicated that greater optimism is associated with a lower risk of depression (34). These disparities in findings could be attributed to variations in study populations, study settings, or sample sizes.

It is worth noting that depression exists in varying degrees, with some individuals requiring long-term treatment involving medication and psychotherapy. Therefore, it is understandable that the effect of optimism may not be uniform across all individuals experiencing different levels of depression. Nevertheless, on a broader scale, it can be deduced that optimism is a construct characterized by positive expectations for the future, which is inversely related to depression (30). Optimism enhances people's resilience and ability to cope with stressful or traumatic events and minimize the risk of relapse (33). Optimism enables individuals to identify unsolvable problems and redirect their energies toward resolvable situations, reducing the likelihood of avoidable frustrations. Consequently, while optimism may serve as a protective factor against mild or moderate depression, it may not yield the same benefits for severe clinical depression (34).

Furthermore, regarding another finding of the research, i.e., the effect of self-efficacy on physical control (or the somatization of problems), no consistent or inconsistent research background deals with this specific component. Therefore, we need to explain and cite the background explanation and research findings related to this section. One study denoted that the higher the strength, the higher the levels of intellectual capital (28). When explaining the results of this study, it must be stated that self-efficacy refers to a person's confidence in their ability to perform a task by overcoming obstacles to their desired behavior and their understanding of management based on internal management conditions. Moreover, in coping strategies, people focus on the problem and try to solve it. People gather information about stressful events and use resources, plans, and actions to solve problems. Therefore, when positive cognitions increase, people perform better in situations, and better performance leads to increased energy (28).

Teenagers who have a strong belief in their ability to navigate social situations are more likely to exhibit self-control and engage in less risky behaviors. Furthermore, possessing strong self-efficacy beliefs can serve as a valuable personal asset when dealing with stressful circumstances. The concept of self-efficacy is intertwined with individuals' goals, expectations, and perceived obstacles in regulating their actions, behaviors, and overall wellbeing (5). In addition, the current study reveals that resilience plays a significant role in physical restraint and cognitive evaluation. The effect of resilience on physical restraint lacks a research background, whereas the positive impact of resilience on cognitive evaluation aligns with previous findings. Significantly, a study by Mohebi et al. demonstrated

that resilience plays a role in improving how female students evaluate and adapt cognitively, employ effective coping strategies, and experience positive emotions (35).

In explaining this result, we can say that strong people will try to use all their abilities and some methods to solve problems and stressful situations. Resilience allows a person to cope with situations that cause stress and psychological pressure (36). A challenge to the cognitive validity of self-reinforcing interpretive models is an inevitable rejection of employing compromised cognitive appraisals in inappropriate and threatening cognitive appraisals. Strengthening one's and another's coping resources when dealing with stressful situations increases positive emotional outcomes and decreases negative internal emotional experiences (35).

Another research also revealed that problem-solving, physical restraint (or somatization of problems), and cognitive evaluation have a detrimental and noteworthy impact on depression. This finding is in agreement with an earlier study, which indicated that individuals who employ positive coping strategies exhibit lower levels of depression (32). In addition, another study pinpointed that most coping strategies have a negative correlation with symptoms of depression and anxiety (29).

To elaborate on this finding, it is important to underline that coping skills encompass mental, behavioral, and emotional reactions enacted in response to stressful life factors to sustain mental wellbeing and adapt to inevitable changes. A reciprocal relationship between coping and depressive symptoms is evident, wherein individuals with lower levels of anxiety and depression employ more effective coping techniques, while those experiencing high anxiety and depression tend to employ less effective methods (29). Furthermore, specific perceptions and coping strategies may result in more adaptive health behaviors. The employment of positive coping behavior can enhance adjustment, subsequently leading to improved mental health and reduced symptoms of depression and anxiety (32).

The current investigation is restricted by its cross-sectional design and its inability to distinguish between individuals with self-harm thoughts and those who engage in self-harm. Furthermore, another limitation of the present investigation was that the participants might have chosen not to fully acknowledge or offer detailed answers to the inquiries due to the delicate subject matter. The study was carried out on students engaging in self-harming residing in Tehran and involved only a small sample size that was readily available from psychology and counseling clinics. Therefore, it is important to exercise caution when attempting to generalize the findings of this study to other populations and diverse geographical areas. A significant limitation of this research was the inability to reach all teenagers with prior self-harm experiences, leading the researcher to seek assistance from clinics in completing the questionnaires. Consequently, numerous questionnaires were filled out in the absence of the researcher, resulting in insufficient supervision over their completion. In addition, non-attendance significantly decreased the sample size. It is recommended that future studies examine the impact of demographic factors, including gender, in conjunction with psychological capital and coping strategies.

6. Conclusion

As evidenced by the results of this study, hope affected social support, cognitive evaluation, emotional regulation, and physical self-control. Furthermore, it was observed that hope plays a role in decreasing depression. In addition, this study demonstrated that optimism contributes to enhanced social support, emotional control, problem-solving abilities, and physical self-control. Nonetheless, optimism does not have any effect on cognitive assessment or depression. The obtained results also indicated that self-confidence enhances physical self-control, while resilience strengthens physical self-control and cognitive assessment; however, it has no impact on depression. Moreover, problem-solving skills, physical self-control, and cognitive estimation negatively affected depression. However, the impact of acquiring social backing and emotional self-control was not found to be a significant mediating factor in depression. Taking into account the favorable effect f psychological resources on how individuals deal with challenges, it is advisable to organize training programs within educational institutions and counseling centers, with a focus on highlighting the role of coping strategies and psychological resources in aiding adolescents' adjustment and diminishing their levels of depression.

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Conflicts of interest

The authors confirm that the research was carried out without any commercial or financial conflicts of interest.

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