

The Impact of Social Support on Resilience among College Students: The Chain Mediating Role of Emotion Regulation and Academic Motivation

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Abstract. It is crucial to understand the role and impact of social support on college students' resilience. This study aims to explore how social support affects college students' psychological resilience through two mediating variables: emotion regulation and academic motivation. Data from 229 Australian college students (aged 18 to 30 years old) were collected using multiple measurement tools including the Brief Resilience Scale (BRS), Emotional Regulation Questionnaire (ERQ), Multidimensional Perceived Social Support Scale (MSPSS) and Simplified Academic Motivation Scale (SAMS). A structural equation model (SEM) was established and analyzed. The results show that emotion regulation plays an important mediating role in the impact of social support on resilience. In addition, emotion regulation and amotivation, as chain mediators, jointly promote the resilience level of college students. This study provides a theoretical basis for improving the resilience of college students. Teachers can improve the resilience of college students by strengthening college students' emotional regulation abilities and providing sufficient social support.

Keywords: Social Support, Emotion Regulation, Academic Motivation, Resilience, College students.

1. Introduction

1.1. Research status

College students face multiple challenges such as academic pressure, interpersonal conflicts, and future career planning. These problems may contribute to mental health issues, including depression and anxiety [1]. Therefore, it is very important to improve the level of resilience among individuals, which can help them recover their physical and mental health faster from stress and frustration [2,3]. Previous studies have shown that resilience, as a key protective factor, can effectively alleviate these negative effects and help individuals quickly recover normal functions in adversity [4,5]. Therefore, it is important to further know what kinds of factor could improve individuals' resilience. Previous studies have found that factors such as social support, emotion regulation and motivation can greatly influence a person's level of resilience. Reference [6] showed that social support can enhance individuals' ability to cope with stress and cultivate resilience in challenging environments, while [7] emphasized the key role of intrinsic motivation in maintaining resilient behavior in adversity.

More specifically, social support as a key factor in improving college students' resilience. According to [8] Conservation of Resources Theory, when individuals face stress and challenges, the acquisition and preservation of external resources can improve their resilience. As a key external resource, social support can provide emotional support, information guidance and help to college students, thereby directly improving their resilience level [9]. Many studies have shown that higher levels of social support are closely related to better mental health and adaptability [10,11].

Social support can provide individuals with emotional comfort and informational support to alleviate stress, stimulate and encourage individuals to actively adjust their internal psychological and emotional state, and enable individuals to have greater psychological resilience when facing difficulties and setbacks [12,13]. In addition, emotion regulation, as an internal regulatory mechanism, helps individuals transform external support into internal resilience [14-16]. Therefore, social support can affect resilience through emotion regulation.

Social support can also provide individuals with a safe, supportive, understanding, and encouraging environment, thereby stimulating more positive and flexible emotion regulation strategies [14]. When individuals feel cared for by family, friends, and other people, they are more likely to adopt positive and effective coping strategies when facing and dealing with negative emotions (such as anxiety and depression). This internal and external interaction further promotes the stability of emotional states [17]. Long-term follow-up studies have also shown that when individuals receive sustained social support in stressful situations, their stress can be alleviated, and they can adopt effective emotion regulation strategies, thereby better improving their psychological resilience [12].

Recent research shows that social support plays a significant role in enhancing individual resilience, with emotion regulation playing a crucial part in this process [18]. Emotion regulation can improve an individual's resilience [19]. When faced with setbacks, individuals can develop coping strategies through emotional regulation, both mentally and physically, and thus demonstrate greater resilience when encountering new setbacks in the future [20-22]. This indicates that emotion regulation not only provides timely or short-term relief from frustration or stress but can also enhance an individual's resilience through long-term cultivation [23].

Individual emotion regulation is an important factor in psychological balance. It not only alleviates negative emotions, but also boosts people's enthusiasm for learning and other activities [24,25]. In this process, academic motivation may be a key factor between emotion regulation and psychological resilience [26]. When emotions are positive, individuals exhibit a more positive learning attitude and intrinsic motivation, and their resilience in life and academics is effectively enhanced [24,26].

Emotion regulation is closely related to academic motivation. Effective emotion regulation can help college students calmly reflect on their academic difficulties and seek effective solutions, gradually increasing their motivation and interest in learning [27]. Research shows that effective emotion regulation has a positive effect; it can alleviate negative emotions while maintaining high concentration and academic motivation, thereby further enhancing resilience [28].

Academic motivation is an important factor in maintaining interest and enthusiasm for learning and plays a vital role in the development of resilience. Studies have shown that both intrinsic and extrinsic motivation have a certain impact on an individual's resilience [29]. Intrinsic motivation can increase an individual's academic initiative and enable them to maintain a high level of performance in difficult situations, thereby enhancing resilience [30,31]. Extrinsic motivation (such as achieving good grades or meeting the expectations of others) can effectively increase an individual's sense of accomplishment in learning and have a certain impact on their long-term resilience [32].

Currently, there is limited research on how amotivation affects individual resilience. Therefore, this study will further explore the mechanism of action between amotivation and emotion regulation

and resilience and provide a new perspective for improving individual resilience and academic achievement.

1.2. Hypothesis

This study intends to construct a chain mediation model to explore how social support affects individual resilience through the dual mediation of emotion regulation and academic motivation. See Figure 1.

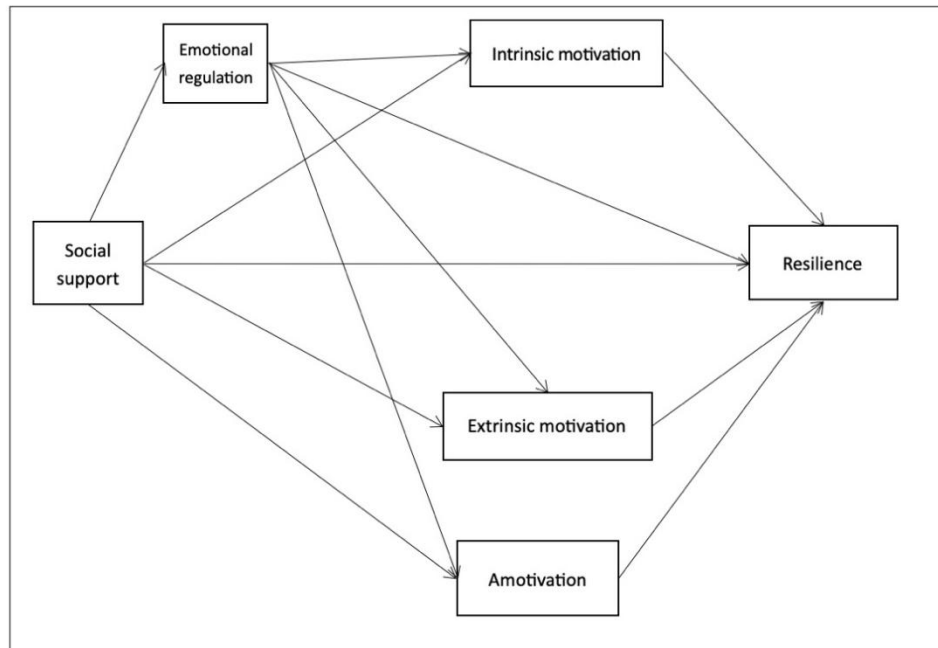


Figure 1. Theoretical model

H1: Emotion regulation acts as a mediator between social support and resilience.

H2: Emotion regulation and academic motivation (Including intrinsic motivation, extrinsic motivation and amotivation) constitute a chain mediation model: social support first improves emotion regulation, then improves academic motivation, and finally promotes the improvement of individual resilience.

2. Methods

2.1. Participants and procedures

The data were collected from Australian university students. A total of 310 questionnaires were collected, out of which 229 (male=52.4%; female=48.6%) were valid. This indicates [33] that when the data missing rate exceeds 60%, it will be filtered. The participants' ages ranged from 18 to 30 years old (mean age=21.9; SD=2.68). All the students participated in this research survey voluntarily. Participants completed the informed consent process before starting the questionnaire survey and had a clear understanding of the confidentiality agreement involved. The research team provided all the participants with a detailed introduction to the relevant information about this study and the survey content. An electronic questionnaire was distributed to each participant through Qualtrics.

2.2. Measures

Brief Resilience Scale (BRS) is Developed by [5], the Brief Resilience Scale consists of 6 items. It uses a 5-point Likert scale for scoring to assess an individual's ability to recover or bounce back from stress. Participants rate their responses according to the scale where 1 ("strongly disagree") and 5 represents ("strongly agree"). In this study, the internal consistency was good (Cronbach's alpha coefficient was 0.74).

Emotion Regulation Questionnaire (ERQ): Proposed by [34], the Emotion Regulation Questionnaire (ERQ) assesses two emotion regulation strategies: cognitive reappraisal and expressive suppression. The ERQ contains 10 items. Participants are required to rate their level of agreement with each item on a 7-point Likert scale, ranging from 1 ("strongly disagree") to 7 ("strongly agree"). Reference [34] conducted multiple studies to validate the effectiveness of the ERQ and explored its relationships with various psychological constructs, such as perceived success in emotion regulation, inauthenticity, and coping styles. In this study, the internal consistency was good (Cronbach's alpha coefficient was 0.92).

Multidimensional Scale of Perceived Social Support (MSPSS): Developed by [9], the Multidimensional Scale of Perceived Social Support (MSPSS) is used to measure an individual's subjective perception of social support. The scale consists of 12 items and is divided into three subscales: family, friends, and significant others. Participants are required to respond to each item on a 7-point Likert scale, with scores ranging from 1 ("strongly disagree") to 7 ("strongly agree"). In this study, the internal consistency was good (Cronbach's alpha coefficient was 0.73).

Shortened Academic Motivation Scale (SAMS): The Shortened Academic Motivation Scale (SAMS) was constructed by [35]. It is a streamlined version of the Academic Motivation Scale and is used to measure students' academic motivation. The SAMS contains 14 items, corresponding to seven dimensions of academic motivation. Participants are required to rate each item on a 7-point scale, where 1 ("strongly disagree") to 7 ("strongly agree"). In this study, the internal consistency was good (Cronbach's alpha coefficient was 0.87).

2.3. Data analysis

This study used SPSS 29 and AMOS 24 (IBM Corporation, New York) for statistical analysis. A comprehensive data cleaning process was carried out on the collected raw data, including checking the integrity and accuracy of the data, as well as dealing with outliers.

In the path analysis, the maximum likelihood estimation method was adopted. Additionally, this study utilized the goodness-of-fit indices specified by [36]. The thresholds for a good fit and an acceptable fit are as follows: Root Mean Square Error of Approximation (RMSEA) and SRMR < 0.08, CFI > 0.90, TLI > 0.90 represents an acceptable model fit. The path analysis was conducted using the bootstrap method, with a 95% bias-corrected confidence interval and 5,000 bootstrap samples set. The mediation effect refers to the indirect influence of the independent variable on the dependent variable through the mediating variable [37]. By applying the indirect effect, it provides a quantitative basis for verifying the existence of the mediating effect [38].

This study focused on the action mechanisms of social support, emotion regulation, and academic motivation on resilience. The structural equation model (SEM) was constructed using AMOS software to conduct in-depth exploration.

3. Result

3.1. Descriptives and correlation

The participants in this study were all students, with undergraduates accounting for 43.6%, postgraduates accounting for 54.3%, and doctoral students accounting for 2.1%. Of these, 48% were international students, reflecting a diverse academic background. In terms of year of study, 29.8% were first-year students, 40.2% were second-year students, 19.3% were third-year students, and 10.7% were fourth-year students or higher. This provided a balanced representation of students at different academic levels, allowing for a comprehensive examination of the research variables.

Correlation analysis (see Table 1) examined the relationships between key variables. The results showed that age and academic level were significantly associated with emotion regulation, and the correlations between the variables were explored, providing further insights into their potential associations.

Table 1. Correlation analysis

	Mean	Std. Deviation	1	2	3	4	5	6	7	8
1.Social support	52.939	15.566	1							
2.Emotional regulation	43.122	8.179	.267	1						
3.Extrinsic motivation	28.537	7.733	.520	.290**	1					
4. Intrinsic motivation	27.057	7.764	.459	.324**	.771**	1				
5. Amotivation	6.013	3.173	.086	.201**	-.1633*	-.026	1			
6. Resilience	18.546	3.239	.324	.439**	.127	.181**	.217**	1		
7. Age	21.90	2.682	-.123	-.0173**	-.073	-.096	-.055	-.082	1	
8. Educational Level	1.370	.429	-.048	-.130	-.016	-.074	-.096	-.129	.599**	1

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

3.2. SEM

The key indicators of model fitting in this study showed excellent performance. The value of the Root Mean Square Error (RMSEA) is 0.018 and the value of the SRMR is 0.039. The Comparative Fit Index (CFI) was 0.99 and the Incremental Fit Index (IFI) was also 0.99, which together indicated that the model fit very well.

The standardized path coefficients show the strength and direction of the relationships between the variables. Social support could predict Emotional regulation ($\beta=0.252$, $SE=0.033$, $p<0.001$) Intrinsic motivation ($\beta=0.401$, $SE=0.030$, $p<0.001$) Extrinsic motivation ($\beta=0.482$, $SE=0.028$, $p<0.001$) Resilience ($\beta=0.257$, $SE=0.014$, $p<0.001$); Emotional regulation could predict Intrinsic motivation ($\beta=0.217$, $SE=0.056$, $p<0.001$) Resilience ($\beta=0.359$, $SE=0.024$, $p<0.001$)

By testing the indirect effect pathways, this study obtained the significance information of the relevant pathways (See Table 2, Figure 2). Emotion regulation plays a significant positive mediating role between social support and psychological resilience (estimated=0.019, $p=0.005$, 95%CI= [0.008, 0.037]). The chain mediation effect of social support on resilience through emotion regulation and intrinsic motivation was not significant (estimated=0.000, $p=0.663$, 95%CI= [-0.001, 0.003]). The chain mediation effect of social support on resilience through emotion regulation and extrinsic

motivation was not significant (estimated=-0.001, $p=0.111$, 95%CI= [-0.005, 0.000]). The chain mediation effect of social support on resilience through emotion regulation and amotivation was significant (estimate=0.002, $p=0.006$, 95%CI= [0.000, 0.006]).

Table 2. Indirect effect size of SEM model

Parameter	Estimate	Lower	Upper	p
Social support => Emotional regulation => Resilience	.019	.008	.037	.005
Social support => Emotional regulation => Intrinsic motivation => Resilience	.000	-.001	.003	.633
Social support => Emotional regulation => Extrinsic motivation => Resilience	-.001	-.005	.000	.111
Social support => Emotional regulation => Amotivation => Resilience	.002	.000	.006	.006

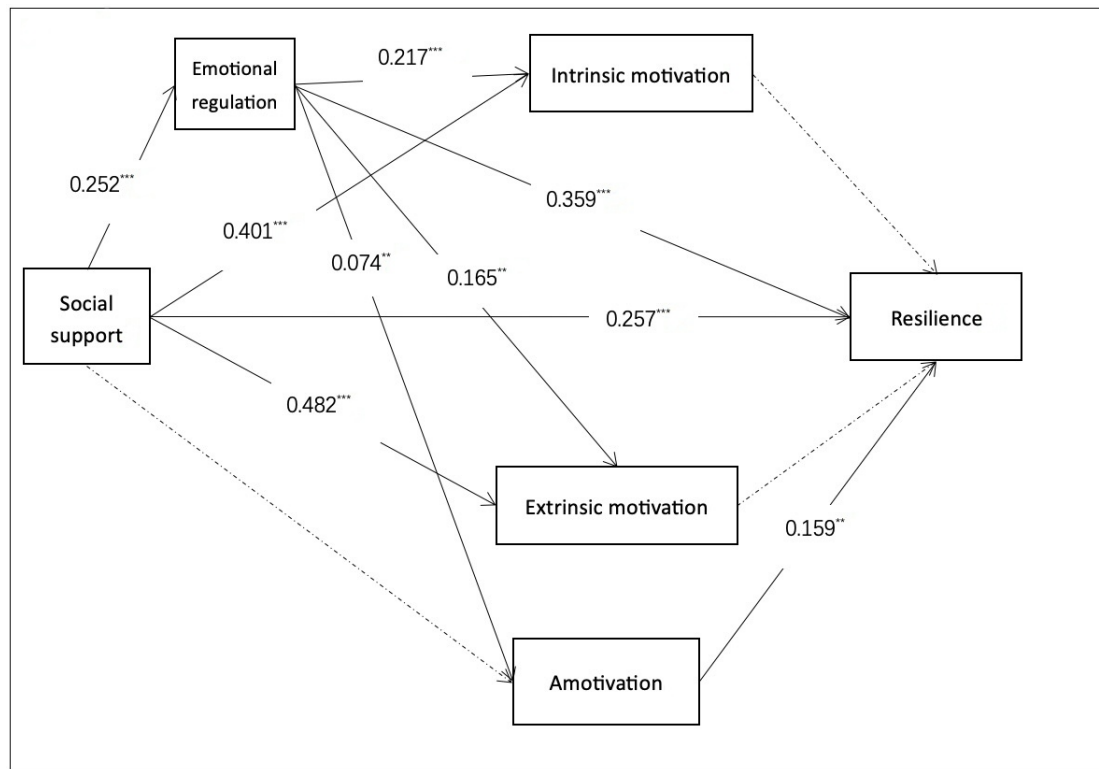


Figure 2. Empirical model

Note. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Dashed lines indicate non-significant correlations.

4. Discussion

This study found that the chain-mediating effect of emotion regulation and motivation can enhance resilience through social support. When motivation has a negative impact on an individual's resilience, emotion regulation can act as a buffer to mitigate this negative impact, thus supporting the proposed chain mediation model. These results underscore the undeniable importance of enhancing emotion regulation skills, which can buffer the impact of motivation and strengthen resilience.

The first finding of this study is that emotion regulation plays a significant mediating role between social support and resilience, which is consistent with previous research [34]. When college students face academic and life pressures, the comfort from their families and the support from their friends can directly alleviate their helplessness, make them feel warm and understood, and effectively provide positive emotional regulation. Specifically, research shows that when students feel anxious due to excessive exam pressure, the listening, understanding, and positive language from friends can help them quickly regain a stable mindset, alleviate negative emotions, and restore confidence [39]. Social support provides individuals with emotional support and resources, promotes their emotional regulation, helps them better cope with stress and negative emotions, and improves overall resilience [16,40]. When individuals feel strong social support, they are better able to manage negative emotions and reduce the impact of external evaluations on them, thereby enhancing the effect of emotional regulation and improving their resilience level [41].

The second finding showed a chain mediation model between emotion regulation and amotivation. Social support enhances an individual's emotion regulation ability, thereby affecting the generation of amotivation and ultimately promoting individual resilience [16,42]. In this process, emotion regulation plays a central mediating role. It not only directly affects negative emotions such as anxiety and irritability, but also enables individuals to objectively view external expectations, reduce psychological burden, and thus enter a state of de-motivation, avoiding the excessive consumption of psychological resources due to inner turmoil [20]. By helping individuals maintain psychological and emotional stability when facing challenges, the improvement of unmotivated levels becomes a direct and important reason for enhancing resilience [32].

Improved emotional regulation can lead individuals to an "acceptance" psychological state—that is, a state of amotivation. Good emotional regulation skills can help individuals reduce mood swings, thereby coping more effectively with challenges in learning or life [5]. Amotivation is not negative; rather, it helps individuals avoid the negative impact of excessively high expectations, allowing them to remain calm in the face of difficulties and reduce psychological strain [32].

By helping individuals remain calm when facing challenges or stress and reducing excessive emotional reactions, amotivation plays a significant role in enhancing resilience [29]. In this state, individuals, freed from the pressure of external factors such as academic performance and the expectations of others, are able to cope flexibly with setbacks and stress, maintain emotional stability, and enhance their ability to face adversity [43]. Furthermore, when individuals face stress, setbacks, and uncertainty, they are not swayed by negative emotions, thus continuously enhancing their resilience through practice [44]. Therefore, emotion regulation can indirectly enhance an individual's resilience by activating nonmotivated responses.

For example, when a college student faces exam or academic pressure, if they receive understanding and support from friends and family, they are more likely to manage and alleviate negative emotions, thus avoiding being pressured by excessively high expectations such as “I must be in the top 5” or “I can't let everyone down.” Such emotional regulation enables individuals to enter a state of demotivation, they are no longer swayed by grades or external evaluations, but face exams and pressure with a calm and stable mindset. The combination of emotion regulation and amotivation establishes a foundation for psychological stability in individuals, enabling them to better adapt to challenges and thus demonstrate greater resilience.

4.1. Limitations

This study has made a meaningful contribution to the literature on social support, emotion regulation, and resilience, but there are still limitations that need to be pointed out.

This study mainly focuses on college students, but research on other groups (such as high school students or working adults) is also valuable. Studying these groups at different developmental stages

can help us more fully understand whether the proposed mediation model is applicable to different stages of life. As [45] pointed out, factors such as cultural background, socioeconomic status, and educational system may affect the role of social support, emotion regulation, and academic motivation. Therefore, future research should expand the sample range to include students from different regions, cultural backgrounds, and academic fields to explore the applicability and universality of these variables in different contexts.

In addition, this study focuses on exploring the mediating role of emotion regulation and academic motivation between social support and resilience, but other potential factors, such as personality traits (such as responsibility), coping strategies, or academic self-efficacy, are not considered. Reference [46] proposed that these variables may play an important role in the formation of resilience and motivation. Future research could further explore the above to gain a more comprehensive understanding of the factors that influence resilience.

This study used a cross-sectional research method, which affected the ability to observe the evolving interactions between social support, emotion regulation, learning motivation, and resilience. As suggested by [35], longitudinal research may help to discover the long-term effects of these variables on resilience over time. Therefore, future research could adopt a longitudinal design to explore how changes in social support or emotion regulation affect resilience.

5. Conclusion

This study provides evidence for how social support affects resilience through emotion regulation. By promoting emotion regulation, social support helps individuals manage stress more effectively, thereby improving resilience. And this study confirmed the chain mediating effect of emotion regulation and academic motivation between social support and resilience. Emotion regulation, especially in the state of amotivation, greatly affects resilience. These findings not only provide empirical support for relevant theories in educational psychology but also provide practical insights for improving college students' mental health and academic adaptation.

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