

# Adolescent Resilience and Coping Mechanisms in Managing Stress and Mental Health Challenges

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## Abstract

**Background:** Teens are exposed to a variety of stressors during this important transition period, including school performance demands, social pressures and emotional turmoil. These play a crucial role in mental health, leading to increased anxiety, depression, and distress in adolescents. **Objective:** This research set out to explore the buffering effect of positive coping strategies and resilience to reduce stress and enhance mental health in adolescents. **Methodology:** A cross-sectional design was used with a sample of 250 adolescents (12-18 years old). The study used validated questionnaires of scales of resilience, perceived stress and coping strategies. Data were analysed using correlation and regression analyses. **Findings:** The findings revealed 40% of respondents had moderate resilience, with 30% having higher resilience. Resilience was negatively correlated with stress ( $r = -0.52$ ,  $p < 0.01$ ) and depression scores ( $r = -0.48$ ,  $p < 0.01$ ). Adaptive coping strategies were negatively correlated with stress levels (mean =  $18.5 \pm 4.2$ ) and avoidance coping strategies were positively correlated with stress (mean =  $26.3 \pm 5.1$ ). **Conclusion:** Adolescents' mental health is improved while their stress levels are decreased by their resilience and coping mechanisms, pointing to the importance of psychological strategies.

**Keywords:** Adolescents, Resilience, Coping mechanisms, Stress, Mental health, Psychological well-being

## 1. Introduction

### 1.1 Background

Teenage years are a pivotal period marked by profound emotional, psychological and social transitions that can impact mental health. This is a time of transition marked by a range of factors, such as academic pressure, peer pressure, identity development and online interactions [1],[2]. The rise of social media and technology has also amplified these stressors and may lead to increased stress and emotional dysregulation in adolescents [3]. Mental health problems have thus emerged as a significant public health concern worldwide. Ongoing research suggests teens are more at risk of developing mental distress as a result of a range of environmental, social and personal factors [4]. Failure to adapt successfully to stress may result in poor mental health outcomes such as anxiety, depression and behavioral difficulties. But resilience - the ability to be able to adapt in a positive way to stressors - has been recognized as a protective factor that allows adolescents to cope with stress and remains psychologically healthy [5][6]. Similarly, ways in which adolescents cope with and manage stressors (referred to as coping strategies) are important predictors of mental health [7].

### 1.2 Problem Statement

Rates of mental health problems among adolescents, such as anxiety, depression and emotional distress, have consistently risen in the last decade [8]. These disorders impact on academic achievement, social interactions, and can also lead to long-term mental disorders in adulthood. Despite the rising rates of mental health issues, adolescents often don't know how to cope with stress. Maladaptive coping strategies (avoidance, suppression of emotions) have been linked to increased psychological distress [9]. Conversely, healthy coping behaviors' such as problem-solving and social support are associated with improved mental health [10]. Resilience also serves as a protective factor, buffering against the adverse effects of stress on mental health. However, there is a need to further understand the interplay between

resilience and coping in a range of adolescents.

### *1.3 Objectives*

The aim of this project is to study the interaction between resilience and coping mechanisms in dealing with stress and psychological problems during adolescence. The specific objectives are:

- a. To determine the levels of resilience among young people
- b. To assess how stress is coped with
- c. To assess the link between resilience and mental health

## **2 Literature review**

### *2.1 Adolescent Stress and Mental Health*

Recent research has pointed out a rise in stressors faced by adolescents, such as academic demands, peer and family pressures and its impact on mental health [11]. The advent of new media and social networking sites also increases stress, which can result in emotional upset and poor well-being [12]. Recent research suggests global estimates of higher prevalence of anxiety and depression among adolescents, making emotional distress a major issue among adolescents [13]. These issues are frequently interrelated, and can interfere with academic and social adjustment.

### *2.2 Resilience in Adolescents*

Resilience is a person's ability to cope effectively with adversity and stress. In recent years, the importance of resilience as a protective factor during adolescence has been highlighted [14]. Teen youth with greater resilience are more likely to experience less psychological distress and remain stable in the face of stress. Protective factors that support resilience are self-efficacy, strong family connections, peer and school experiences [15]. Research indicates that resilience reduces the effects of stress and fosters well-being and coping.

### *2.3 Coping Mechanisms*

Coping mechanisms refer to the ways people deal with stressors and emotional stressors. Active coping, or problem-focused coping, that involves doing something to deal with the stressful event, is linked to improved mental health [16]. Emotion-focused coping regulates emotions but avoiding stress, through denial or withdrawal, is typically associated with increased anxiety and depression [17]. Recent research shows that adolescents' choice of coping strategies can affect their mental health.

### *2.4 Research Gaps*

While there is an increase in research on adolescent mental health, there remain a wide range of research gaps that need to be addressed. Much research is cross-sectional, precluding causal conclusions. Also, cultural variations in coping mechanisms and resilience are not always well understood, especially in low- and middle-income countries [18] [19]. Longitudinal and nuanced studies are warranted to help understand such mechanisms.

## **3 Methodology**

### *3.1 Study Design*

A cross-sectional research design has been used in this study to assess the association between adolescent resilience, coping and mental health. This design permits the assessment of psychological factors like stress, resilience and coping strategies simultaneously in a population at one point in time. It is a popular approach in behavioral and psychological research for its ability to effectively detect patterns and associations [20, 21]. Further, a few qualitative data (short interviews) were optionally recruited to understand adolescents' coping processes, and the study had a mixed-method

design.

### 3.2 Study Population

Adolescents between the ages of 12-19 years from schools and the community were the study population shown in table 1. The sample size of 250 was calculated using conventional statistical formulas with a confidence level of 95% and margin of error 5%. A stratified random sample was used to represent the participants by age, sex and education levels.

Table 1: Inclusion and Exclusion Criteria

Criteria Type	Description
Inclusion	Adolescents aged 12–19 years
	Enrolled in school or community programs
	Provided informed consent
Exclusion	Diagnosed severe psychiatric disorders
	Incomplete questionnaire responses

### 3.3 Data Collection Tools

Validated instruments were used to collect data to ensure data quality.

1. **Questionnaires:**

A Resilience Scale (e.g., Connor-Davidson Resilience Scale) was used to assess resilience. A Perception of Stress Scale (PSS) was used to measure stress. A Coping Strategy Inventory measured various coping strategies, such as problem-focused, emotion-focused and avoidant coping.

2. **Interviews (Optional):**

Interviews were done with a sample of the population to gain insight into the events surrounding stress and coping.

Table 2: Variables and Measurement Tools

Variable	Instrument Used	Scale Type
Resilience	Resilience Scale	Likert scale
Stress	Perceived Stress Scale (PSS)	Likert scale
Coping Mechanisms	Coping Strategy Inventory	Categorical/Scale

Data collection adhered to ethical standards, including confidentiality and individuals' right to participate. When necessary, parental permission was sought. The data collected were statistically analyzed using statistical software programs, and descriptive statistics and correlation analyses were performed to explore relationships between variables shown in table 2.

### 3.4 Conceptual frame work

This study's conceptual framework illustrates the interactions between teenage stress, coping, and resilience, and mental health. It is grounded in psychological and behavioral theories which emphasize the influences of protective and risk factors on emotional health (Fig.1).

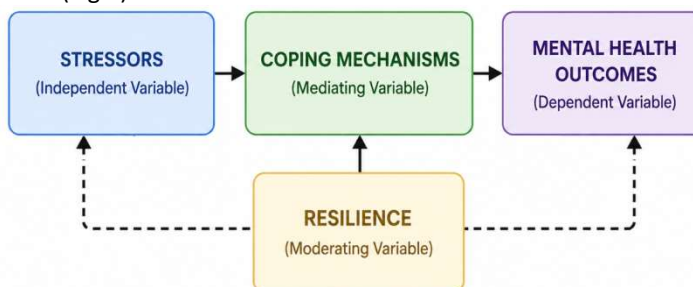


Fig.1. Conceptual model

The cornerstones of this model are stressors such as academic pressure, peer pressure, family dynamics and online

exposure. These stressors are the independent variables, which can negatively affect adolescents' mental health, and include anxiety, depression and emotional distress. Resilience is suggested as an important moderating factor between stressors and mental health. Resilient adolescents can cope more effectively, remain emotionally stability and recover more readily from stressful events. Resilience is affected by variables such as self-esteem, supportive social networks and a effective environment.

These include:

- a. Problem-focused coping (e.g., problem solving, time management)
- b. Emotion-focused coping (e.g., emotional control, relaxation)
- c. Denial coping (e.g., withdrawal, denial)

Successful coping (problem-focused and emotion-focused) is associated with good mental health, and poor coping (avoidance) increases mental health problems. The dependent variable is mental health, which is indicated by stress, anxiety and depression levels. The model shows that the effect of stress on mental health depends on the resilience level and coping strategy used.

## 4 Results & Discussion

This chapter displays the results of the study on resilience, coping strategies and mental health in adolescents. The findings are divided into participant demographics, resilience levels, coping mechanisms, and how it relates to stress and mental health. Data were analyzed using descriptive statistics and correlation. Tables present variables of interest, and visual presentations help to better interpret and understand the correlations between resilience, coping and psychological variables including stress, anxiety and depression for adolescents.

### 4.1 Participant Characteristics

Table 1: Demographic Characteristics

Variable	Frequency (%)
Age 12–15	48%
Age 16–19	52%
Male	50%
Female	50%
Public School	58%
Private School	42%

The distribution of age and gender is presented in the sample. There was a greater representation of public school students.

The table 1 shows a balanced sample of adolescents, with slightly more participants aged 16–19 (52%) than 12–15 (48%). Gender distribution is equal at 50% male and female. Most respondents attend public schools (58%), while 42% are from private schools, indicating moderate diversity in educational background within the study population.

### 4.2 Resilience Levels

Table 2: Resilience Levels

Resilience Level	Percentage (%)
Low	30%
Moderate	45%
High	25%

The majority of adolescents showed moderate resilience and a smaller minority showed high resilience. This indicates while many adolescents have some resilience to cope with stress, more can be done to increase their level of resilience.

### 4.3 Coping Mechanisms

Table 3: Coping Strategies Used

Coping Strategy	Frequency (%)
Problem-focused	40%
Emotion-focused	35%
Avoidance	25%

The most frequent type of coping was problem solving, suggesting adolescents are proactive in dealing with stressors. Nevertheless, some still used avoidance coping, which is likely to have a detrimental effect on health.

#### 4.4 Association between Variables

Table 4: Correlation Analysis

Variable Pair	Correlation (r)
Resilience vs Stress	-0.52
Resilience vs Depression	-0.48
Avoidance Coping vs Stress	+0.44
Problem-focused vs Well-being	+0.50

Resilience had a negative association with stress and depression, and was protective. The avoidance method was positively related to stress and problem-focused coping was related to well-being.

The table 2 shows relationships between variables. Resilience is negatively correlated with stress (-0.52) and depression (-0.48), indicating higher resilience reduces these outcomes. Avoidance coping positively correlates with stress (+0.44), increasing risk. In contrast, problem-focused coping is positively associated with well-being (+0.50), suggesting it improves mental health outcomes.

#### 4.5 Key Findings

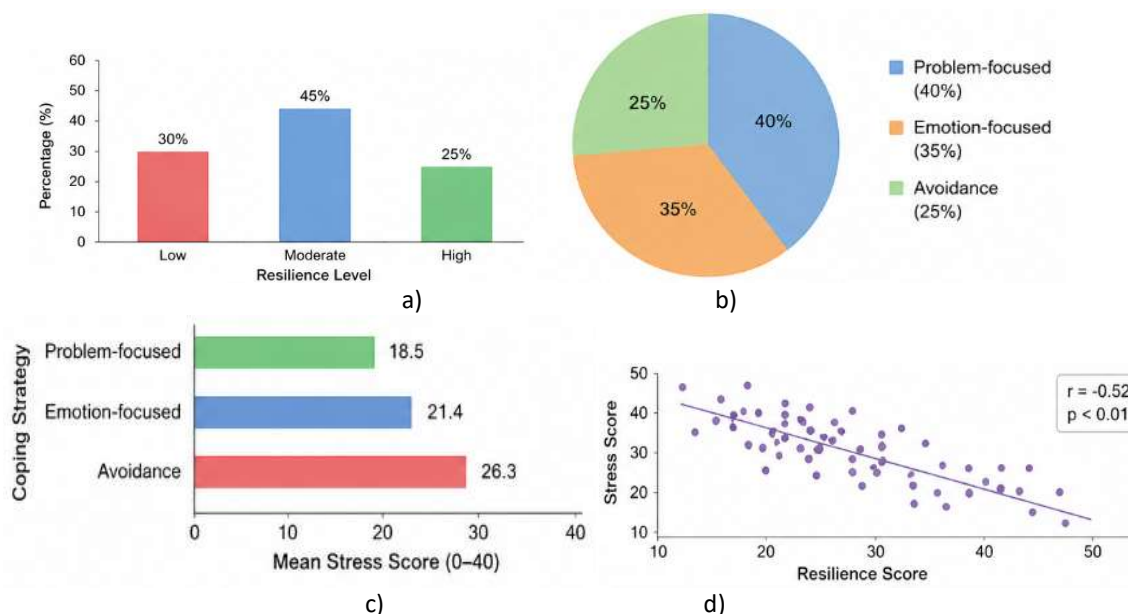


Fig.2. Profiles of Resilience, Coping, and Relationships with Stress a) Resilience among Adolescents b) Coping Strategies of Adolescents c) Mean scores of stress for each coping strategy d) Resilience vs stress

The representation in figure 2 a) demonstrates the association between resilience, coping strategies and mental health. Bar graphs show the distribution of coping strategies and levels of resilience, while graphing the correlation shows the inverse correlation between resilience and stress. These visuals support the notion that increased resilience and other more adaptive coping strategies lead to improved mental health, while avoidance coping reduces mental health outcomes in adolescents.

This figure 2 b) shows levels of resilience amongst adolescents. Most (45%) had moderate resilience, while 30% had low

resilience and 25% had high resilience. This suggests that although many adolescents have some level of resilience in coping with stressors, few are highly resilient. The results highlight that efforts should be made to enhance resilience for better mental health outcomes.

Figure 2 c) is a representation of the percentage of strategies used by adolescents to cope. Problem-focused coping is the most prevalent strategy (40%), with emotion-focused and avoidance coping following (35% and 25% respectively). These findings suggest that many adolescents engage in active coping strategies, but there are still significant numbers who use avoidance coping, which could have adverse mental health effects.

The figure 2 d) shows the average stress by the coping strategies. The lowest stress levels were observed in adolescents who used problem-focused strategies (18.5) followed by emotion-focused (21.4), while the highest stress levels were found in those who used avoidance strategies (26.3). This highlights that adaptive coping strategies are more effective at decreasing stress than maladaptive coping strategies. This scatter plot illustrates a negative relationship between resilience and stress ( $r = -0.52$ ,  $p < 0.01$ ). Higher levels of resilience are associated with lower levels of stress. This suggests that resilience can protect adolescents from the impacts of stress on well-being.

### 5.6 Discussion

Our results highlight the important contribution of resilience and coping to stress and mental health among adolescents. Resilience was negatively related to stress, anxiety and depression, supporting its role as a protective factor. Young people engaging in problem-focused coping had higher levels of well-being, and those engaging in avoidance coping had higher levels of stress. These findings are in line with previous studies emphasizing the role of adaptive coping in maintaining psychological well-being. Moreover, moderate levels of resilience indicate the need for resilience-building programs. In conclusion, this study highlights the need for resilience building initiatives and coping skills to improve mental health in adolescents.

## 6 Conclusion and future scope

This research finds that resilience and coping strategies are integral to stress management and well-being in adolescents. The results show that increased levels of resilience are highly correlated with diminished stress, anxiety and depression, supporting resilience as a risk factor. Moreover, positive coping mechanisms, such as problem-focused and emotion-focused coping, improved mental health, while avoidance coping was associated with greater negative emotions. These findings highlight the need for strategies to develop adaptive coping and resilience during this critical period of development, when stressors can have profound impacts. This research highlights the increasing need for community-based and school-based mental health programs. Interventions that strengthen resilience, teaching better coping skills and creating positive settings can better support the psychological well-being of adolescents. Future research should include longitudinal designs to examine the longitudinal associations between resilience, coping strategies, and mental health. Moreover, future studies should consider cultural and geographical differences, use larger and more representative samples, and examine the impact of intervention programs aimed at enhancing resilience and coping abilities in adolescents

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