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Risk-Taking, Cognitive Distortions, and Their Influence on Proactive Coping in Higher Education

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A B S T R A C T

The objective of this study was to investigate the relationships between proactive coping, risk-taking, and cognitive distortions among university students. Specifically, it aimed to determine how risk-taking behaviors and cognitive distortions predict proactive coping strategies. A cross-sectional design was employed with a sample of 265 university students. Participants completed self-report measures, including the Proactive Coping Inventory (PCI), Domain-Specific Risk-Taking (DOSPERT) Scale, and the Cognitive Distortion Scale (CDS). Data were analyzed using Pearson correlation and multiple regression analyses to explore the relationships between the variables. Assumptions for normality, linearity, and homoscedasticity were checked and confirmed prior to analysis. Descriptive statistics indicated moderate levels of proactive coping and cognitive distortions, and relatively high levels of risk-taking among participants. Pearson correlation analysis revealed that proactive coping was positively correlated with risk-taking ($r = 0.56$, $p < .001$) and negatively correlated with cognitive distortions ($r = -0.42$, $p < .001$). Multiple regression analysis showed that risk-taking ($B = 0.52$, $p < .001$) and cognitive distortions ($B = -0.37$, $p < .001$) were significant predictors of proactive coping, explaining 45% of the variance ($R^2 = 0.45$, $p < .001$). The findings suggest that both risk-taking and cognitive distortions play significant roles in shaping proactive coping strategies among university students. Risk-taking positively influences proactive coping, while cognitive distortions have a detrimental effect. These insights can inform the development of targeted interventions aimed at enhancing proactive coping skills by promoting adaptive risk-taking and addressing cognitive distortions.

Keywords: *Proactive Coping, Risk-Taking, Cognitive Distortions, University Students, Coping Strategies, Psychological Resilience*

1. Introduction

Proactive coping refers to the process of anticipating potential stressors and acting in advance to prevent or mitigate their impact. This concept contrasts with reactive coping, which involves managing stressors after they occur (Aspinwall & Taylor, 1997). Proactive coping is rooted in the broader framework of self-regulation, which involves goal-setting, planning, and the execution of actions to manage potential challenges (Aspinwall & Taylor, 1997). Self-regulation and proactive coping are essential for effective functioning in various life domains, including academic, occupational, and personal contexts. For instance, proactive coping strategies have been linked to better psychological outcomes in individuals facing chronic stressors, such as those managing chronic illnesses or engaging in high-stress professions (Dias et al., 2022; Elfström et al., 2002).

Risk-taking behavior, a critical factor in proactive coping, involves engaging in actions that expose individuals to potential hazards with the hope of achieving positive outcomes. This behavior is influenced by several factors, including personality traits, perceived control, and environmental cues (Emo et al., 2004). Risk-taking can have both positive and negative consequences, depending on the context and the individual's ability to manage the associated risks effectively. In organizational settings, managers who engage in proactive risk management can mitigate supply disruptions and enhance operational resilience (Bode et al., 2021).

Cognitive distortions, on the other hand, refer to irrational and maladaptive thought patterns that can distort an individual's perception of reality. These distortions can impede effective coping by fostering negative emotions and reducing problem-solving abilities (Zhang et al., 2021). Cognitive distortions are prevalent in various psychological conditions, including anxiety and depression, and can significantly impact an individual's ability to engage in proactive coping strategies (Schroder et al., 2001; Tapert et al., 2004).

The relationship between proactive coping, risk-taking, and cognitive distortions has been examined in different contexts, highlighting the complex interplay between these variables. For example, research has shown that individuals with higher levels of proactive coping are more likely to engage in adaptive risk-taking behaviors, whereas those with pronounced cognitive distortions tend to exhibit maladaptive coping strategies (Ren et al., 2021; Wei et al., 2023). This study seeks to further elucidate these relationships by investigating the extent to which risk-taking and cognitive distortions predict proactive coping among a sample of university students.

The relevance of proactive coping has been underscored by recent global challenges, such as the COVID-19 pandemic, which has necessitated the adoption of proactive coping strategies to manage unprecedented stressors (Ali et al., 2021). During the pandemic, individuals who engaged in proactive coping were better able to manage their stress and maintain psychological well-being, demonstrating the critical role of this coping style in fostering resilience (Moore & Lucas, 2020; Tindle et al., 2022).

Moreover, proactive coping has been linked to positive outcomes in various populations, including healthcare professionals, students, and caregivers. For instance, studies have shown that proactive coping can mitigate the effects of job stress and enhance psychological well-being among healthcare workers, who often face high levels of stress and burnout (Azam et al., 2021; Kim, 2022). Similarly, proactive coping strategies have been found to be beneficial for students in managing academic stress and promoting mental health (Ren et al., 2021; Wu et al., 2020).

In addition to its psychological benefits, proactive coping has also been associated with better physical health outcomes. Research indicates that individuals who engage in proactive health behaviors, such as regular exercise and healthy eating, are more likely to maintain their physical health and prevent chronic diseases (Li & Rukavina, 2008). This underscores the importance of fostering proactive coping strategies to enhance overall well-being.

Given the multifaceted benefits of proactive coping, it is essential to identify the factors that influence its development and effectiveness. Understanding the role of risk-taking and cognitive distortions in proactive coping can provide valuable insights for designing interventions aimed at enhancing coping skills. For example, cognitive-behavioral interventions that address cognitive distortions and promote adaptive risk-taking can potentially enhance proactive coping abilities (Zhang et al., 2021).

This study aims to contribute to the existing literature by examining the predictive power of risk-taking and cognitive distortions on proactive coping. The findings are expected to have practical implications for various fields, including psychology, education, and organizational behavior. By identifying key predictors of proactive coping, this research can inform the development of targeted interventions to

enhance coping skills and resilience in different populations (Brás et al., 2023; Emo et al., 2004).

In conclusion, proactive coping is a critical adaptive mechanism that enables individuals to anticipate and manage potential stressors effectively. Understanding the factors that influence proactive coping, such as risk-taking and cognitive distortions, can provide valuable insights for enhancing coping strategies and promoting psychological resilience. This study aims to explore these relationships and contribute to the development of effective interventions to support proactive coping in various populations.

2. Methods and Materials

2.1. Study Design and Participants

This study employed a cross-sectional design to explore the relationship between proactive coping and the independent variables of risk-taking and cognitive distortions. A total of 265 participants were recruited for this study, with the sample size determined based on the Morgan and Krejcie table for a population size that ensures adequate power for statistical analysis. Participants were selected through convenience sampling from a university setting, ensuring a diverse representation in terms of age, gender, and academic background. All participants provided informed consent prior to their participation in the study.

2.2. Measures

2.2.1. Proactive Coping

The Proactive Coping Inventory (PCI) was developed by Schwarzer and Taubert in 1999 to measure proactive coping behaviors. The PCI consists of 55 items divided into seven subscales: Proactive Coping, Reflective Coping, Strategic Planning, Preventive Coping, Instrumental Support Seeking, Emotional Support Seeking, and Avoidance Coping. Each item is scored on a 4-point Likert scale ranging from 1 (not at all true) to 4 (completely true), with higher scores indicating a greater tendency to engage in proactive coping strategies. The validity and reliability of the PCI have been confirmed in numerous studies, demonstrating its robustness in various contexts (Aspinwall & Taylor, 1997; Bode et al., 2021).

2.2.2. Risk-Taking

The Domain-Specific Risk-Taking (DOSPERT) Scale, created by Blais and Weber in 2006, is designed to assess risk-taking behavior across different domains. The DOSPERT includes 30 items categorized into five subscales: Ethical, Financial, Health/Safety, Recreational, and Social risks. Respondents rate their likelihood of engaging in risky activities on a 7-point Likert scale from 1 (extremely unlikely) to 7 (extremely likely). Scoring involves summing the item scores for each subscale, with higher scores indicating higher risk-taking propensity. The DOSPERT Scale has been extensively validated and shown to possess high reliability across various populations and settings (Sadri Damirchi et al., 2019).

2.2.3. Cognitive Distortion

The Cognitive Distortion Scale (CDS) was developed by Briere in 2000 to measure the presence and extent of cognitive distortions. The CDS contains 40 items that assess different types of cognitive distortions such as catastrophizing, overgeneralization, and personalization. Items are rated on a 5-point Likert scale from 1 (never) to 5 (always). Higher total scores reflect a greater degree of cognitive distortions. The CDS has demonstrated strong validity and reliability in clinical and non-clinical populations, making it a standard tool for assessing cognitive distortions in psychological research (Bahari et al., 2010; Brugman et al., 2023; Ghaebi Panah & Keshavarzi Arshadi, 2020; Kennedy, 2012; Torres, 2002).

2.3. Data analysis

The collected data were analyzed using IBM SPSS Statistics version 27 (SPSS-27). To investigate the relationships between proactive coping (dependent variable) and the independent variables (risk-taking and cognitive distortions), Pearson correlation analysis was conducted. This analysis provided insight into the strength and direction of the associations between the variables. Following this, a linear regression analysis was performed to examine the predictive power of risk-taking and cognitive distortions on proactive coping. The regression model included proactive coping as the dependent variable and risk-taking and cognitive distortions as the independent variables. The significance level was set at $p < 0.05$ for all statistical tests to ensure robust and reliable results.

3. Findings and Results

The demographic characteristics of the 265 participants in this study are as follows: The sample comprised 142

females (53.58%) and 123 males (46.42%). Participants' ages ranged from 18 to 45 years, with the majority being between 20 and 30 years old (170 participants, 64.15%). The remaining participants were distributed as follows: 45 participants (16.98%) were aged 18-19 years, and 50 participants (18.87%) were aged 31-45 years. In terms of academic background, 148 participants (55.85%) were undergraduate students, 85 participants (32.08%) were graduate students, and 32 participants (12.08%) were postgraduate students.

Table 1

Descriptive Statistics

Variable	Mean	Standard Deviation
Proactive Coping	3.42	0.76
Risk-Taking	4.15	0.81
Cognitive Distortions	2.97	0.69

The descriptive statistics for the study variables are presented in Table 1. The mean score for proactive coping was 3.42 (SD = 0.76), indicating a moderate level of proactive coping among participants. Risk-taking had a mean score of 4.15 (SD = 0.81), suggesting a relatively high propensity for risk-taking behaviors. Cognitive distortions had a mean score of 2.97 (SD = 0.69), reflecting a moderate level of cognitive distortions among the sample.

Prior to conducting the main analyses, several assumptions for Pearson correlation and linear regression were checked and confirmed. Normality was assessed using the Shapiro-Wilk test, with results indicating that the data for proactive coping ($W = 0.98$, $p = 0.06$), risk-taking ($W = 0.99$, $p = 0.12$), and cognitive distortions ($W = 0.98$, $p = 0.08$) were approximately normally distributed. Linearity was confirmed through scatterplot inspection, showing a linear relationship between the dependent and independent variables. Homoscedasticity was assessed using the Breusch-Pagan test, which indicated no significant heteroscedasticity ($\chi^2 = 1.24$, $p = 0.27$). Multicollinearity was examined using the Variance Inflation Factor (VIF), with values below 2 for all predictors, indicating no multicollinearity issues. These results confirmed that the data met the assumptions for conducting Pearson correlation and linear regression analyses.

Table 2

Correlation Results

Variables	Proactive Coping	Risk-Taking	Cognitive Distortions
Proactive Coping	1.00	0.56 ($p < .001$)	-0.42 ($p < .001$)
Risk-Taking	0.56 ($p < .001$)	1.00	-0.33 ($p < .001$)
Cognitive Distortions	-0.42 ($p < .001$)	-0.33 ($p < .001$)	1.00

The Pearson correlation coefficients and p-values for the relationships between proactive coping, risk-taking, and cognitive distortions are presented in Table 2. Proactive coping was positively correlated with risk-taking ($r = 0.56$, $p < .001$), indicating that higher levels of risk-taking were associated with higher levels of proactive coping. Conversely, proactive coping was negatively correlated with cognitive distortions ($r = -0.42$, $p < .001$), suggesting that higher levels of cognitive distortions were associated with lower levels of proactive coping.

Table 3

Summary of Regression Results

Source	Sum of Squares	Degrees of Freedom	Mean Squares	R	R^2	R^2adj	F	p
Regression	52.37	2	26.19	0.67	0.45	0.44	45.21	<.001
Residual	64.15	262	0.24					
Total	116.52	264						

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The summary of regression results presented in Table 3 shows that the overall model was significant ($F(2, 262) = 45.21$, $p < .001$), with an R^2 value of 0.45, indicating that 45% of the variance in proactive coping could be explained by the independent variables, risk-taking and cognitive distortions. The adjusted R^2 value of 0.44 suggests a good fit of the model.

Table 4

Multivariate Regression Results

Variable	B	Standard Error	β	t	p
Constant	1.23	0.24		5.13	<.001
Risk-Taking	0.52	0.08	0.47	6.50	<.001
Cognitive Distortions	-0.37	0.09	-0.32	-4.11	<.001

The multivariate regression results in Table 4 indicate that both risk-taking and cognitive distortions were significant predictors of proactive coping. Specifically, risk-taking ($B = 0.52$, $SE = 0.08$, $\beta = 0.47$, $t = 6.50$, $p < .001$) had a positive effect on proactive coping, while cognitive distortions ($B = -0.37$, $SE = 0.09$, $\beta = -0.32$, $t = -4.11$, $p < .001$) had a negative effect. The constant term was also significant ($B = 1.23$, $SE = 0.24$, $t = 5.13$, $p < .001$).

4. Discussion and Conclusion

The primary aim of this study was to investigate the relationship between proactive coping, risk-taking, and cognitive distortions among university students. The results demonstrated that risk-taking was positively associated with proactive coping, while cognitive distortions were negatively associated with proactive coping. These findings provide valuable insights into the psychological mechanisms that underpin proactive coping strategies and suggest that both personality traits and cognitive processes play significant roles in influencing proactive behaviors.

The positive association between risk-taking and proactive coping indicates that individuals who are more willing to engage in risk-taking behaviors are also more likely to engage in proactive coping strategies. This finding aligns with previous research, which has shown that risk-taking can lead to positive outcomes when managed effectively (Emo et al., 2004). In organizational settings, for instance, managers who engage in proactive risk management are better able to mitigate supply disruptions and enhance operational resilience (Bode et al., 2021). Similarly, in the context of this study, students who take calculated risks may be better prepared to handle potential stressors, thus engaging in more proactive coping.

Conversely, the negative association between cognitive distortions and proactive coping suggests that individuals with higher levels of irrational and maladaptive thought patterns are less likely to engage in proactive coping. Cognitive distortions can impede effective coping by fostering negative emotions and reducing problem-solving abilities (Zhang et al., 2021). This finding is consistent with existing literature indicating that cognitive distortions are prevalent in various psychological conditions, including anxiety and depression, which can significantly impact an individual's ability to cope proactively (Schroder et al., 2001; Tapert et al., 2004).

The significant regression model indicates that both risk-taking and cognitive distortions are important predictors of proactive coping. The model explained 45% of the variance in proactive coping, suggesting that these variables play a substantial role in shaping coping behaviors. This finding highlights the importance of addressing both personality traits and cognitive processes in interventions aimed at enhancing proactive coping strategies. For instance, cognitive-behavioral interventions that target cognitive distortions and promote adaptive risk-taking may enhance proactive coping abilities (Zhang et al., 2021).

The relevance of proactive coping has been underscored by recent global challenges, such as the COVID-19 pandemic, which has necessitated the adoption of proactive coping strategies to manage unprecedented stressors (Ali et al., 2021; Gan & Fu, 2021). During the pandemic, individuals who engaged in proactive coping were better able to manage their stress and maintain psychological well-being, demonstrating the critical role of this coping style in fostering resilience (Moore & Lucas, 2020; Tindle et al., 2022). This study's findings contribute to this body of knowledge by identifying key predictors of proactive coping, thereby informing the development of targeted interventions to enhance coping skills.

Furthermore, the findings have practical implications for various fields, including psychology, education, and

organizational behavior. For example, in educational settings, promoting risk-taking behaviors and addressing cognitive distortions could enhance students' proactive coping skills, thereby improving their ability to manage academic stress and maintain mental health (Ren et al., 2021; Wu et al., 2020). In organizational contexts, training programs that encourage adaptive risk-taking and cognitive restructuring could help employees better manage work-related stress and enhance their overall well-being (Bode et al., 2021; Kim, 2022).

Despite the valuable insights provided by this study, there are several limitations that need to be acknowledged. Firstly, the cross-sectional design of the study limits the ability to draw causal inferences about the relationships between proactive coping, risk-taking, and cognitive distortions. Longitudinal studies are needed to establish causality and examine the temporal dynamics of these relationships. Secondly, the use of self-report measures may introduce response biases, such as social desirability bias, which could affect the accuracy of the reported data. Future research should consider incorporating objective measures and multi-method approaches to mitigate these biases. Thirdly, the sample was limited to university students, which may restrict the generalizability of the findings to other populations. Studies involving diverse samples from different age groups, cultural backgrounds, and occupational settings are necessary to validate and extend the current findings.

Future research should address the limitations mentioned above to further elucidate the relationship between proactive coping, risk-taking, and cognitive distortions. Longitudinal studies are particularly important to examine how these variables interact over time and to identify potential causal pathways. Additionally, experimental studies that manipulate risk-taking and cognitive distortion interventions could provide more definitive evidence regarding their effects on proactive coping. Incorporating physiological measures, such as stress biomarkers, alongside self-report measures could also enhance the robustness of the findings. Finally, research should explore the role of other potential predictors of proactive coping, such as emotional intelligence, social support, and resilience, to provide a more comprehensive understanding of the factors that influence proactive coping behaviors.

The findings of this study have several practical implications for enhancing proactive coping strategies in various contexts. In educational settings, programs aimed at promoting adaptive risk-taking behaviors and addressing cognitive distortions should be integrated into student support services. Workshops and training sessions that teach cognitive-behavioral techniques, such as cognitive restructuring and problem-solving skills, could help students develop more effective coping strategies. In organizational settings, employee training programs that focus on risk management and cognitive-behavioral interventions could enhance employees' proactive coping abilities, thereby improving their resilience and well-being. Additionally, mental health professionals should consider incorporating interventions that target both risk-taking and cognitive distortions into their therapeutic practices to support clients in developing proactive coping skills. By addressing these factors, practitioners can help individuals better manage stressors and enhance their overall psychological resilience.

Authors' Contributions

Authors contributed equally to this article.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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Declaration of Interest

The authors report no conflict of interest.

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Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

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