The Association between Gratitude, Intolerance of Uncertainty, Prosocial Behaviors, and Coping during a Pandemic

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Introduction

• Gratitude is associated with many positive aspects of well-being, including happiness, strong interpersonal relationships, self-acceptance, and fewer symptoms of mental health disorders (Algoe et al., 2016; Chopik et al., 2019; Kauser et al., 2018; Li et al., 2012; Vernon et al., 2009; Wood t al., 2009).
• Gratitude is associated with positive coping mechanisms (Lin et al., 2016; Mofidi et al., 2014; Wood et al., 2007) and prosocial behavior (Tsang et al., 2019).
• Little research has been done on how gratitude and prosocial behaviors and attitudes are related to coping with the Covid-19 pandemic.
• Intolerance of uncertainty is associated with maladaptive coping strategies and psychological distress during the Covid-19 pandemic (Rettie et al., 2020). This finding should be retested and examined in college students.
• **It was hypothesized that those who show high levels of gratitude, low levels of intolerance of uncertainty, and more prosocial behaviors and attitudes are more likely to actively try to cope with the pandemic in positive ways.**

Methods

• Eighty-three Alma College students in psychology courses completed scales of general gratitude levels, intolerance of uncertainty levels, coping style during the pandemic, and prosocial behaviors and beliefs during the pandemic in an online questionnaire.
• The *Gratitude Resentment and Appreciation Test (GRAT)- Short Form* was used to measure general tendencies toward feeling gratitude, resentment, and appreciation (Watkins et al., 2003).
• The *brief COPE Inventory* is a self-report measure used to determine the participant's positive and negative coping styles and abilities (Carver, 1997). Carver's instructions are to use the data to determine how to code the measure, which is how we decided which items to use for the greatest reliability. Items were separated into categories of positive and negative coping mechanisms.
• . *The Intolerance of Uncertainty Scale-Short Form* measures participants' responses to uncertainty, ambiguous situations, and the future (Carleton et al., 2007).
• The Prosocial Behaviors and Attitudes Measure is a likert scale created for this study in order to measure Covid-19 pandemic-related variables such as wearing a mask in public, social distancing, and respecting government quarantine orders. This measure had a Cronbach's α of 0.95, meaning it has high internal consistency and scale reliability.
• These measures were analyzed with a multiple linear regression.

Results

Descriptives

	Age	GRAT	Prosocial	IntoleranceOfUncertainty	PositiveCoping	NegativeCoping
Mean	19.8	109	74.0	33.8	41.8	14.5
Standard deviation	2.42	17.0	16.6	9.47	7.63	4.79

Fig. 1: Descriptive analysis shows the mean and standard variation for the scores on each variable measure as well as age of participants.

Correlation Matrix

	GRAT	Prosocial	IntoleranceOfUncertainty	PositiveCoping	NegativeCoping
GRAT	—				
Prosocial	0.148	—			
IntoleranceOfUncertainty	−0.108	0.163	—		
PositiveCoping	0.222 *	0.302 **	0.431 ***	—	
NegativeCoping	−0.154	0.203	0.522 ***	0.250 *	—

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

Fig. 2: This correlation matrix shows the strength of the correlation between each variable in the study.

Univariate Tests

	Dependent Variable	Sum of Squares	df	Mean Square	F	p
GRAT	PositiveCoping	235.26	1	235.26	5.52	0.021
	NegativeCoping	44.66	1	44.66	2.68	0.106
Prosocial	PositiveCoping	353.30	1	353.30	8.29	0.005
	NegativeCoping	98.21	1	98.21	5.89	0.018
IOU	PositiveCoping	823.78	1	823.78	19.34	<.001
	NegativeCoping	424.42	1	424.42	25.45	<.001
Residuals	PositiveCoping	3365.75	79	42.60		
	NegativeCoping	1317.31	79	16.67		

Fig. 3: This multiple linear regression analysis predicts to both positive and negative coping as criterion variables. Gratitude, prosocial behaviors and attitudes, and intolerance of uncertainty are predictive variables.

Discussion

• This is an exploratory, correlational study. Causation cannot be inferred.
• Analyses revealed that high levels of gratitude and prosocial behaviors and attitudes are correlated with positive coping mechanisms during the pandemic.
  • Interestingly, prosocial behaviors and attitudes also predict negative coping mechanisms. Therefore, it is possible that prosocial behaviors and attitudes are generally related to making more efforts to cope in both positive and negative ways. Anxiety may play a role in this relationship.
  • As predicted, gratitude is not correlated with negative coping.
• Intolerance of uncertainty is highly correlated with both positive and negative coping mechanisms during the pandemic.
  • It is possible that those who have difficulty tolerating uncertainty make especially big efforts to cope in any way they can (both positive and negative) in the face of great uncertainty. Anxiety may play a role in this relationship as well.
  • This correlation should be studied in other populations, which may not be as high in anxiety or as inclined to negative coping mechanisms such as substance abuse.
• The hypothesis was supported in that gratitude and prosocial behaviors and attitudes are correlated with positive coping during the pandemic. However, the relationship between intolerance of uncertainty and positive coping, while strong, was the opposite of what we expected. Furthermore, intolerance of uncertainty and prosocial behaviors were also positively correlated with negative coping, which was unexpected.

Conclusions

• Future research should include a larger sample size and a more diverse population, as this study focused mostly on a relatively small number of white, young adult college students in psychology courses.
• The relationships between these variables should be investigated further to determine causality.
• The correlation between intolerance of uncertainty and coping was surprising and did not fit with previous findings. This relationship should be studied further, and it should be determined if anxiety plays a role. Similarly, the relationship between the prosocial variable and coping should be further explored, including the possibility that those who are more concerned for people's welfare may be more inclined to look for ways to cope (both positively and negatively).
• This research may contribute to our knowledge of at-risk populations during crises and provide insight into factors that are associated with resilience and altruism. The data suggests that gratitude may be especially relevant to positive coping.