Assessment of the Effects of Health and Financial Threat on Prosocial and Antisocial Responses During the COVID-19 Pandemic: The Mediating Role of Empathic Concern

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Abstract

This research aims to elucidate the connection of perceived health and financial threat linked to the COVID-19 pandemic with the willingness to engage in prosocial and antisocial behaviors, while also testing the potential mediating role of empathic concern. During the lockdown period, a sample of Spanish community members (*N*=702) filled in a multi-measure online survey. Our results revealed that (a) COVID-19 health (but not financial) threat predicted a greater tendency to express prosocial actions, (b) none of these forms of COVID-19 threat predicted antisocial inclinations, and (c) empathic concern mediated the effects of COVID-19 health threat on both prosocial and antisocial tendencies. Findings speak to the ongoing debate about whether individuals most psychologically impacted by the pandemic would tend to respond in a more prosocial or antisocial manner.

Keywords: COVID-19; threat; prosocial tendencies; antisocial tendencies; empathic concern.

1.Introduction

The SARS-Coronavirus-2 disease (COVID-19), formally characterized as a pandemic by the World Health Organization (WHO) on March 11th, 2020, is by far one of the most significant challenges that citizens of present-day societies have encountered. On November 20th, a total of 57,274,018 cases had been detected, and 1,368,000 COVID-19-related deaths had been reported globally (WHO, 2020). Given the magnitude of the unfolding COVID-19 pandemic and intending to advance our understanding of individuals' responses to this threat, it is imperative to gather essential information on its wide-ranging psychosocial consequences.

Psychological functions can be deteriorated due to COVID-19; for instance, after the declaration of the outbreak of COVID-19, a significant increase in levels of anxiety and depression, and a decrease of satisfaction of life and happiness, were observed among Chinese individuals (Li et al., 2020). However, there is conflicting evidence on the predominant nature (prosocial vs. antisocial) of the social responses triggered by the COVID-19 pandemic crisis. Day-to-day representative cases of other-beneficial prosocial behavior (e.g., making protective equipment against COVID-19) and antisocial behavior (e.g., ignoring the quarantine restrictions) appear under this adverse context (Goitia, 2020; Martín, 2020). Our research should shed light on the linkage between the COVID-19 crisis threat and the willingness to engage in prosocial and antisocial behaviors.

1.1. COVID-19 crisis-related perceived impact and prosocial/antisocial tendencies

Are individuals most threatened by the COVID-19 global crisis more or less willing to exhibit prosocial and antisocial responses? One way to articulate a response to such a question is to draw on Taylor's (2006) tend-and-befriend model's biobehavioral bases. This model suggests that the unpleasant psychological and biological responses arising from stressful and threatening conditions can be dampened through other-oriented responses.

Rather than antisocial responses, the expression of prosocial behaviors represents a better strategy to handle potentially threatening events.

Findings from recent research examining human social behavior in a financial crisis context are aligned with the formulations described above. Concretely, Alonso-Ferres et al. (2020) found that a higher perceived threat related to the Spanish economic crisis promoted a greater inclination to engage in helping behavior. Additionally, preliminary evidence on the psychosocial effects of the COVID-19 threat keeps with that reasoning. For instance, Kachanoff et al. (2020) showed that the COVID-19 psychological threat correlates positively with support and adherence to public health initiatives aimed at preventing the spread of the virus—a representative example of other-oriented response. Considering that the pandemic's repercussions go beyond health, it has sparked a widespread economic meltdown that has increased citizens' financial strain; we will analyze whether both perceived health and financial threat related to COVID-19 may be associated with increased prosocial and diminished antisocial inclinations (Hypothesis 1).

We will also investigate empathic concern as a potential mechanism underlying the COVID-19 health/financial threat-prosocial/antisocial linkage. This notion is supported by earlier research suggesting that exposure to threatening environments make individuals more sensitive to others' needs (Alonso-Ferres et al., 2020) and that a greater emotional sensitivity toward others' suffering relates to increased prosocial acts and diminished antisocial tendencies (Carlo et al., 2010; Davis et al., 2018). Therefore, we reasoned that a higher perceived health and financial threat linked to the pandemic prompt prosocial responses and undermined antisocial inclinations by enhancing feelings of concern and sympathy toward others in need (Hypothesis 2).

2.Method

2.1.Participants

The sample consisted of 702 participants (460 females; M_{age} = 28.41, SD_{age} = 11.97) residing in Spain during the COVID-19 lockdown period (see sociodemographics in Supplemental Material S1).

2.2.Measures

Prosocial and antisocial tendencies. Drawing from various sources (e.g., Goitia, 2020), we developed an *ad hoc* measure to assess prosocial and antisocial inclinations during the COVID-19 lockdown period. Participants were asked to rate on a 5-point Likert scale (1 = *not-at-all*, 5 = *absolutely*) their willingness to engage in 20 COVID-19-related social behaviors. An exploratory factor analysis with Oblimin rotation was performed. Using principal axis factoring as the extraction method and following Kaiser's criterion, a two-factor solution was confirmed, explaining 29.5% of total variance (TLI = .89; RMSEA = .05, 90%CI [0.04, 0.06]). The first factor included 10 items that assessed prosocial tendencies (e.g., "To spend part of your working time performing actions for the common good"; α = .75 [M = 4.24, SD = 0.56]), and the second factor comprised 9 items (one item was removed; discrimination index was -.08) that evaluated antisocial tendencies (e.g., "To organize home parties or friend meetings"; α = .73 [M = 1.61, SD = 0.55]).

Empathic concern. Level of agreement (8 items; e.g., "I am often quite touched by things that I see happen") included in the Interpersonal Reactivity Index (Davis, 1980) was provided on a 5-point Likert scale (1 = *totally-disagree*, 5 = *total-agree*; α = .71 [M = 4.02, SD = 0.59]).

Perceived health and financial threats. The Financial Threat Scale (Marjanovic et al., 2013) was adapted (i.e., "Considering the COVID-19 pandemic situation in Spain, please indicate how you feel about your [financial/health] situation"). Five items assessed perceived health threat (e.g., "How insecure do you feel"; α = .90 [M = 2.88, SD = 1.06]), and 5 items

evaluated perceived financial threat (e.g., "How much do you think about it"; α = .84 [*M* = 3.18, *SD* = 0.96]) on a 5-point Likert scale (1 = *not-at-all*, 5 = *a-great-deal*).

Demographics. Age, gender, marital status, employment status, education, income, and subjective social class were controlled for regression and mediation analyses.

2.3.Procedure

From March 30th to April 28th, 2020—coinciding with Spain's lockdown period—the sample was recruited via online advertisements on university networks and social media (i.e., incidental sampling). Individuals were provided with a brief description of the study and the estimated duration (15-20 minutes); anonymity and confidentiality were also ensured. Then, participants provided informed consent and filled out the online measures. This study was developed following the ethical standards of the local university and the Declaration of Helsinki. Data are available at OSF.

3.Results

3.1.Correlational analyses

Perceived health and financial threat were both associated with greater scores on prosocial tendencies (r = .16, p < .001; r = .12, p = .002, respectively). However, only perceived health threat was significantly related to antisocial tendencies (r = -.09, p = .018). Empathic concern was positively associated with prosocial tendencies (r = .47, p < .001) and negatively correlated with antisocial tendencies (r = -.30, p < .001).

3.2.The contribution of COVID-19-related threats to prosocial and antisocial tendencies

Two hierarchical regression analyses tested whether the two forms of COVID-19-related threat (i.e., perceived health and financial threat) predicted antisocial and prosocial

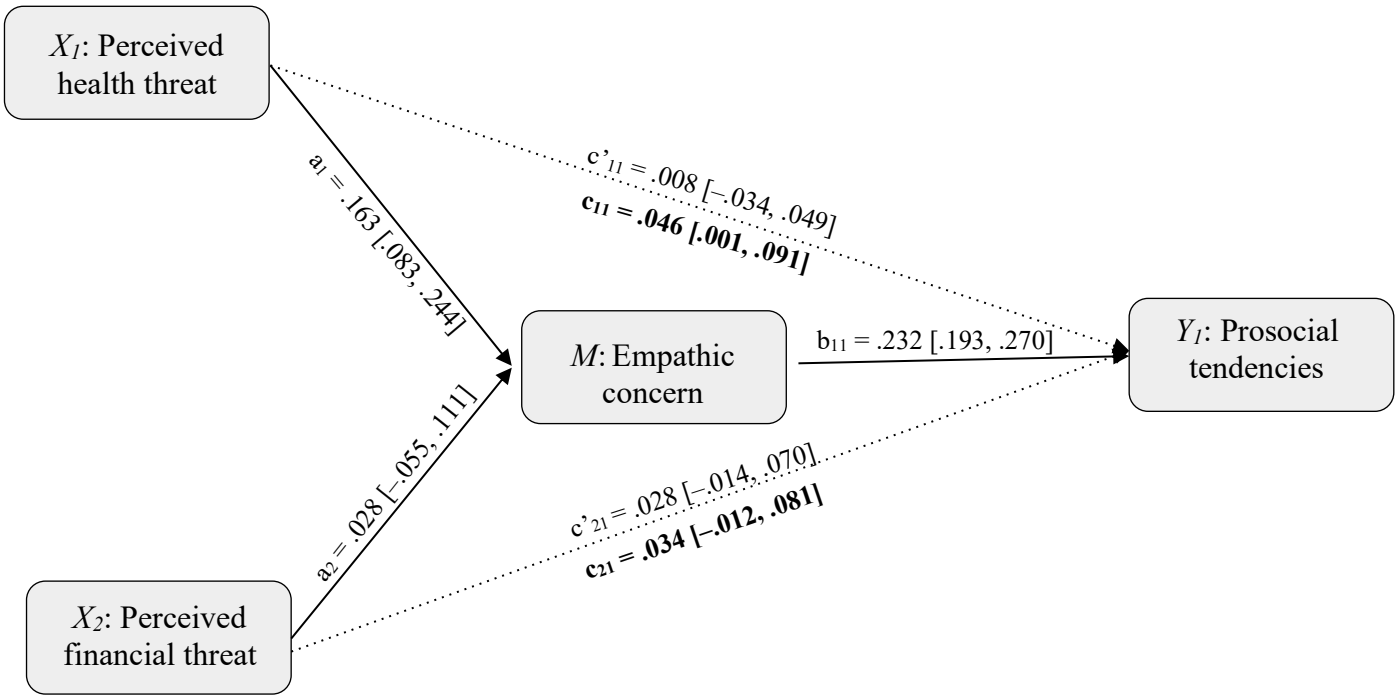
tendencies. Sociodemographics were entered in Step 1 and COVID-19-related threats in Step 2.

Among COVID-19 threats (Supplemental Material S2), only elevated perceived health threat predicted greater prosocial tendencies (b = .046, p = .046, 95%CI [0.001, 0.091]). This effect was sustained even after controlling for sociodemographics. The addition of the COVID-19 threat measures in Step 2 significantly accounted for unique criterion variance (1.4%), $\Delta F(2, 678) = 5.33$, p = .005. None of the COVID-19 threat measures predicted antisocial tendencies.

3.3.The mediating role of empathic concern

As Figure 1 (Panel A) shows, the associations between perceived health threat and empathic concern and prosocial tendencies and empathic concern were significant. Moreover, results showed that perceived health threat was indirectly linked to prosocial tendencies (b = .038, SE = .010, 95% CI [0.019, 0.059]) via its effect on empathic concern. Empathic concern did not mediate the association between perceived financial threat and prosocial tendencies, b = .007, SE = .010, 95%CI [-0.013, 0.025].

Panel A



Panel B

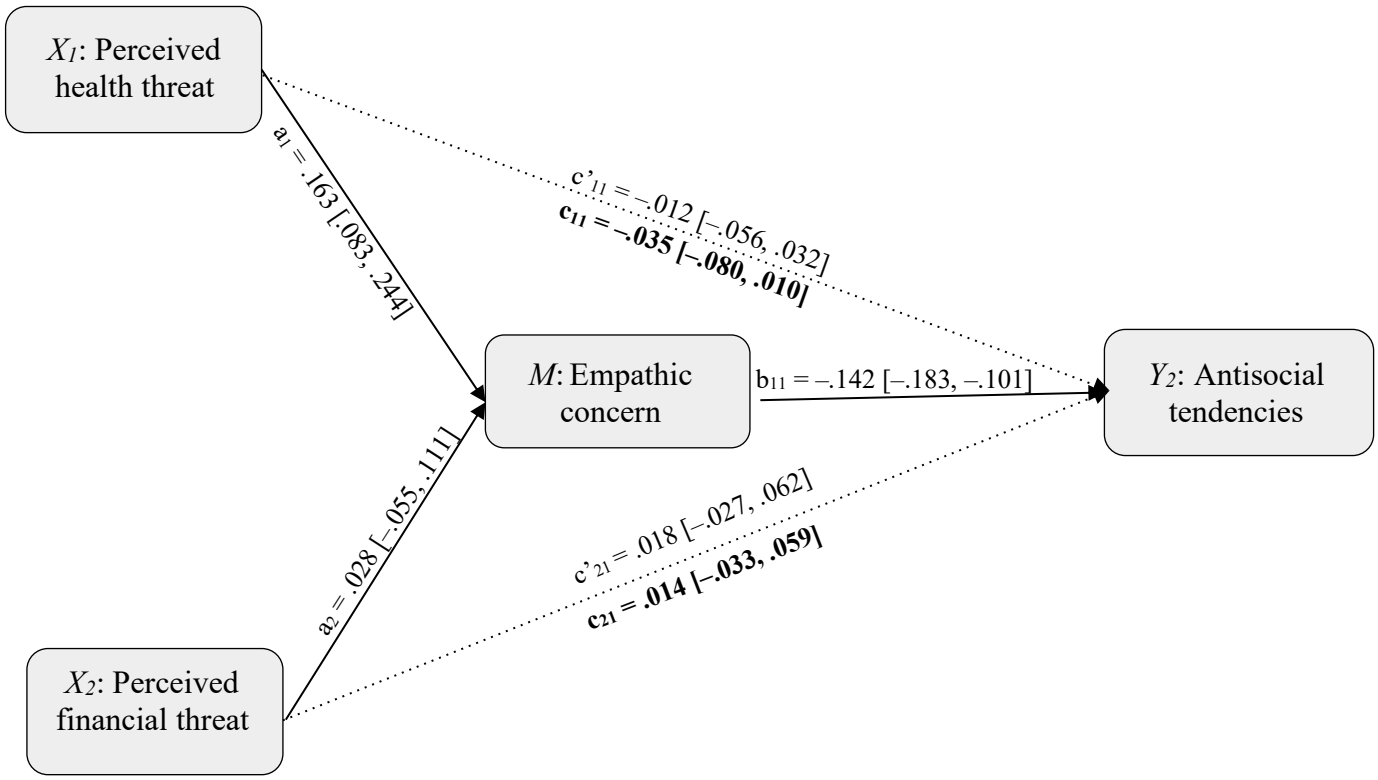


Figure 1. Mediation model displaying the indirect effects of perceived health and financial threat on prosocial tendencies (Panel A) and antisocial tendencies (Panel B) via empathic concern. Unstandardized estimates, with 95%CI reported between brackets. Total effects appear in bold text. The bootstrap sample size was 5,000.

Furthermore, Figure 1 (Panel B) indicates that perceived health threat was related to increased empathic concern, which diminished antisocial tendencies. Results confirmed that the perceived health threat-antisocial tendencies connection was driven by enhanced empathic concern, b = -.023, SE = .007, 95% CI [-0.041, -0.012]. Finally, as with prosocial tendencies, results did not yield an indirect effect of perceived financial threat on antisocial tendencies through empathic concern, b = -.004, SE = .006, 95%C I [-0.061, 0.007].

4.Discussion

In this research, we tested whether (a) higher pandemic-related health and financial threat relate to increased prosocial tendencies and diminished antisocial inclinations, and (b) empathic concern helps explain such associations.

Correlational analysis showed that both forms of COVID-19-related threat were associated with greater prosocial inclinations. These data corroborate prior work positing that personal exposure to adversity (e.g., crises) might be conducive to higher prosocial responses (Alonso-Ferres et al., 2020). However, only perceived health threat was negatively correlated with antisocial responses, suggesting that the underlying nature of these types of COVID-19-related threats might contribute differently to social motivation during the lockdown. Consistent with this idea, but contrary to our expectations, hierarchical regression analyses found perceived health threat linked to COVID-19—and not financial threat—to be predictive of prosocial tendencies. Thus, the more individuals perceived their health (rather than their financial situation) as threatened due to the COVID-19 pandemic, the more they would respond in a prosocial manner. An explanation may come from the notion of *threat imminence*. Vieira et al. (2020) indicated that, in the context of the current pandemic, prosocial responses vary along a threat imminence continuum, with situations of higher imminence and salience being particularly predictive of other-oriented outcomes. Therefore,

during the peak of the COVID-19 crisis in Spain, the disease's rapid spread could have made people perceive contracting the virus as an upcoming threat (Dryhurst et al., 2020). Conversely, our results excluded the utility of both perceived health and perceived financial threats in predicting antisocial inclinations.

Such findings revealed that people principally engage in prosocial behavior when perceiving their health threatened during the early stage of the COVID-19 pandemic. Rather than selfish or antisocial motivations, the promotion of other-oriented tendencies seems to be an adaptive strategy to adequately face the threatening feelings (Alonso-Ferres et al., 2020). Further investigations should ascertain whether this prosocial motivation—partly facilitated by feelings of threat—might be at the basis of the creation of cooperative networks allowing for more efficient community coping.

Mediation analysis illuminated the mechanism (i.e., empathic concern) behind the effects of perceived health threat on prosocial/antisocial inclinations. Hence, feeling threatened in terms of health during the lockdown period in Spain was conducive to higher levels of concern for those most in need, which, in turn, could trigger greater prosocial (and lower antisocial) responses. These findings (a) underline the relevant role of empathic concern in promoting prosocial tendencies (Davis et al., 2018), this time in response to perceived health threat in the context of a pandemic, and (b) advance our understanding of the absence of perceived health threat's (direct) effect on antisocial inclinations. Our data highlight that greater perceived health threat is only associated with lower antisocial tendencies indirectly via higher empathic concern, suggesting that empathic concern might also be crucial in inhibiting antisocial responses under high-perceived threat conditions.

Using a cross-sectional design in a unique country could challenge our results' generalizability and between-country comparability, even if other countries show similar

social, health, and economic conditions to Spain. Multicountry research with a multilevel approach is needed to test the global scope of our findings. Furthermore, though this study systematically analyzed the contribution of various forms of psychological threat to social responses during the pandemic, future research on the role of threat in social behavior should also control negative emotions stemming from certain factors relevant to COVID-19, such as misinformation or isolation. Notwithstanding the above, this research (a) complements recent investigations on the effects of various forms of perceived threat or risk-related measures linked to the COVID-19 crisis on psychosocial criteria (Dryhurst et al., 2020; Kachanoff et al., 2020; Viera et al., 2020) and (b) offers valuable insight into the psychosocial effects of the COVID-19 pandemic during the confinement period in Spain by confirming the relevance of perceived (health) threat in motivating prosocial inclinations and unveiling the explanatory role of empathic concern.

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The following are the supplementary data related to this article:

Table S1.

Sociodemographic information of participants.

Variable	*n*	%
Civil status		
Single	285	40.6
Married	108	15.4
Divorced	22	3.2
Involved in a relationship (dating or cohabiting)	286	40.7
Widowed	1	0.1
Currrent employment situation		
Student	446	63.5
Full-time job	171	24.4
Part-time job	37	5.3
Retired	7	1.0
Un-employed	41	5.8
Family income level		
< 1000€	108	15.4
1000€ - 2000€	281	40.0
2000€ - 3000€	182	25.9
3000€ - 4000€	84	12.0
4000€ - 5000€	25	3.6
> 5000€	22	3.1
Educational attainment		
No education	2	0.3

Primary school	14	2.0
Secondary education	14	2.0
Vocational training	43	6.1
Bachelor	26	3.7
University not completed	358	51.0
University completed	88	12.5
Master	117	16.7
Doctorate	40	5.7

Table S2

Hierarchical regression analysis predicting prosocial and antisocial tendencies

		Prosocial Tendencies			**Antisocial Tendencies**	
	R^2	*b*	CI (95%)	R^2	*b*	CI (95%)
Step 1: *Demographics*	.101***			.053***		
Age		.074**	[0.029, 0.118]		–.028	[–0.073, –0.016]
Gender		–.356***	[–0.447, –0.269]		.218***	[0.130, 0.307]
Marital status		.093*	[0.009, 0.178]		–.097*	[–0.181, –0.014]
Employment		–.070	[–0.247, 0.106]		.034	[–0.142, 0.209]
Income		–.002	[–0.046, 0.042]		.019	[–0.025, 0.063]
Education		–.024	[–0.066, 0.018]		.008	[–0.034, 0.050]
Subjective social class		.007	[–0.037, 0.052]		.043	[–0.002, 0.087]
	ΔR^2			ΔR^2		
Step 2: *Covid-19 threat measures*	.014**			.003		
Age		.070**	[0.025, 0.115]		–.024	[–0.069, 0.021]
Gender		–.339***	[–0.447, –0.269]		.213***	[0.123, 0.302]
Marital status		.085*	[0.001, 0.169]		–.099*	[–0.183, –0.021]
Employment		–.074	[–0.20, 0.102]		.029	[–0.147, 0.205]
Income		.004	[–0.041, 0.048]		.019	[–0.025, 0.063]
Education		–.020	[–0.062, 0.022]		.005	[–0.037, 0.047]
Subjective social class		.011	[–0.034, 0.055]		.044	[0.000, 0.088]
Health threat		.046*	[0.001, 0.091]		–.035	[–0.080, 0.010]
Financial threat		.034	[–0.012, 0.081]		.013	[–0.033, 0.060]
$\boldsymbol{R^2}$		.115			.056	

Note. Gender (1 = female, 2 = male); Marital Status (1 = non-involved in a relationship, 2 = involved in a romantic relationship); Employment status (1 = non-unemployed, 2 = unemployed).

All Variance Inflation Factors are lower or equal to 1.32

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