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ARTICLE

What Factors Predict Prosocial Behavior during Social Crisis? A Cross-Sectional Study during the COVID-19 Pandemic in Spain

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ABSTRACT: Background: Prosocial behavior plays a crucial role in improving interpersonal relationships and social well-being, especially in times of crisis. The COVID-19 pandemic caused a severe humanitarian crisis, prompting governments to implement measures such as social confinement. The main objective of the study was to analyze the psychological and sociodemographic variables that may predict prosocial behavior during quarantine. **Methods:** The sample consisted of 172 participants from Spain, divided into two groups based on whether they reported an increase in prosocial behaviors during quarantine. An online survey was administered to analyze the psychological and sociodemographic variables. **Results:** Overall, results demonstrate that emotional regulation, morality and age may predict prosocial behavior. **Conclusions:** Understanding the predictors of prosocial behavior during social crises is crucial for devising effective policies aimed at fostering community resilience and support networks, with particular attention to factors such as the capacity to regulate emotions, morality, and age.

KEYWORDS: Prosocial behavior; social crises; emotional regulation; morality; COVID-19 pandemic

1 Introduction

Feelings, reasoning or empathy are some of the characteristics that differentiate human beings from other living beings; this becomes even more apparent when considering the ability to perform conscious actions whose sole purpose is the well-being of others [1]. This behavior is called prosocial behavior and refers to the set of intentional actions that are carried out for the benefit of others without expecting anything in return [2–4]. Research reveals that there are several types of prosocial behaviors: public, anonymous, altruistic, accommodating, emotional and emergency prosocial behaviors [5,6]. These behaviors help promote positive interpersonal relationships and provide greater personal and social well-being, notably in economic and health crises [2,4,7].

1.1 Prosocial Behavior and Sociodemographic Factors

In recent decades, researchers have focused on identifying the factors that determine prosocial behavior [8]. Numerous research studies show that sociodemographic and psychological factors influence prosocial behavior [9]. Regarding the sociodemographic factors, Auné et al. [10] found gender-related differences. Specifically, they established a positive correlation between female gender and donation behaviors and empathic behaviors. With regard to age, Nantel-Vivier et al. [11] concluded that prosocial behaviors were more common as age increased, especially during adulthood [12]. In terms of political ideology, the general trend suggests that a left-wing tendency is more associated with the expression of concern for others and issues of social equality. Furthermore, this political leaning correlates with greater empathy and a higher propensity for prosocial behaviors [13].

1.2 Prosocial Behavior and Psychological Factors

Numerous researches have highlighted the importance of psychological factors such as empathy, emotional regulation and morality as predictors of prosocial behavior [14–16]. Evidence suggests that empathy, comprising predicting, understanding and experiencing others' feelings [17], is an important motivating factor for prosocial behavior. Concretely, both abilities to understand others' points of view and feeling sympathy/concern for others were found to be strongly associated with altruistic spontaneous behaviors and planned to help such as charity or giving [18–21], especially during humanitarian crises.

The research proposes that the relationship between empathy and social behavior is not always direct [15] but rather modulated by emotional regulation [22]. Emotion regulation, defined as the capacity to exert control over an emotional response, may be a core component of empathic processing that can alter responses toward prosocial helping [23]. More precisely, adaptive emotion regulation strategies such as cognitive reappraisal have been found to modulate and sometimes even predict empathic concern (EC) and helping behavior [22,24], while the ability to reduce the ongoing emotion expression was found to be associated with reduced prosociality [24].

Furthermore, it should be mentioned that another variable related to prosocial behavior is the dimension of morality [25]. Concerning moral identity, defined as the importance of morality for our actions, has been positively related to a greater number of prosocial behaviors [25,26]. Likewise, specific moral disengagement mechanisms [27] have been identified as strongly related to violence justification [28]. Therefore, one of the main objectives of the present study is to determine if there is a relation between moral disengagement mechanisms and prosociality.

1.3 Prosocial Behavior during Social Crises

In addition to the factors mentioned before, prosocial behavior can be influenced by the social situation. Economic, environmental, or health crises can profoundly impact this behavior [29]. The literature on historical crises suggests that significant contextual changes require people to adopt a new mindset and adapt accordingly [7]. Specifically, the literature indicates two contrasting trends. One approach suggests that times of social crisis may promote negative or hostile responses and individualistic tendencies [7,30,31]. Conversely, another approach focusing on natural disasters has found that prosocial behaviors such as volunteering experience a significant increase during such crises [32].

1.4 The Current Research

Given the above, it is essential to explore predictors of prosocial behavior during COVID-19 quarantine, as these behaviors were crucial to improving the well-being of citizens during this difficult period.

Therefore, the objective of the following study is to evaluate the different prosocial conducts and analyze the psychological and sociodemographic variables related to the performance of prosocial and helping behaviors during COVID-19 quarantine. For this purpose, we evaluated moral disengagement, empathy, and emotion regulation as factors that may predict prosocial behavior. Relative to previous literature, we hypothesise that the prosocial group will demonstrate a greater diversity of prosocial behaviors, higher scores in emotional regulation and empathy [20,22], lower employment of moral disengagement mechanisms [26], older age [12], and a left-wing political orientation [13]. Concerning the characteristics predicting prosocial behavior, we hypothesise that emotional and empathic skills would be characteristic of the prosocial group while reduced emotional regulation and empathic skills, along with moral disengagement mechanisms, would be characteristic of the non-prosocial group.

2 Methods

2.1 Participants

First, we calculated the sample size with formal power analysis G*Power software (latest ver. 3.1.9.7; Heinrich-Heine-Universität Düsseldorf, Düsseldorf, Germany). Based on a previous study that uncovered a medium effect size [33], an expected power of 0.8, and an assumed alpha-level of 0.05, the sample size should be of a minimum of 80 participants in total (40 per group). The sample was composed of 172 participants, with an average age of 34.21 (SD = 11.41) and an average educational level of 5.07 (SD = 1.38), corresponding to university studies. The sample was composed of 53 men and 118 women. As for political orientation, 107 people self-identified as left-wing (62.2%), 53 as centrist (30.8%) and 12 as right-wing (7.0%). All participated voluntarily and signed the informed consent in accordance with the Organic Law 3/2018 on the Protection of Personal Data and Guarantees of Digital Rights. The study was approved by the Research Ethics Committee of the University of Granada (number: 4576/CEIH/2024). All data collected were anonymized to protect the privacy of participants. The study was conducted in accordance with the Declaration of Helsinki.

3 Materials

3.1 Sociodemographic Variables

Age, educational level and nationality were collected. They were also asked to rank their political orientation on a 10-point scale (1 very left-wing and 10 very right-wing).

3.2 Psychological Assessment

3.2.1 Empathy

Interpersonal Reactivity Index (IRI) [34,35]. The scale measures empathy composed of four dimensions: (a) Fantasy Scale (FS), which assesses the tendency to imaginatively transpose oneself into the feelings of fictional characters (b) Perspective-Taking (PT) Scale, which measures the ability to understand the feelings and viewpoints of others (c) EC Scale, which evaluates feelings of compassion and concern for others and (d) Personal Distress (PD) Scale, which reflects personal feelings of discomfort in response to others' negative emotions. Cronbach's α coefficients were α = 0.70 for PT; α = 0.71 for FS, α = 0.67 for EC; α = 0.70 for PD.

3.2.2 Emotion Regulation

Cognitive Emotional Regulation Questionnaire (CERQ) [36]. This questionnaire measures nine cognitive strategies of emotional regulation (adaptive strategies and less adaptive strategies): (a) Self-blame, attributing negative events to oneself, (b) Acceptance, acknowledging the situation without trying to change it, (c) Rumination, repeatedly thinking about negative feelings or events, (d) Positive refocusing, focusing on

positive aspects of the situation, (e) Refocus on planning, thinking about ways to deal with the situation, (f) Positive reappraisal, finding meaning in the negative experience, (g) Putting into perspective, considering the event as less important, (h) Catastrophizing, exaggerating the negative aspects of the situation, and (i) Blaming others, attributing responsibility for the situation to others. Cronbach's α coefficients were α = 0.60 for Self-blame, α = 0.63 for Acceptance, α = 0.73 for Rumination, α = 0.89 for Positive refocusing, α = 0.79 for Refocus on planning, α = 0.86 for Positive reappraisal, α = for 0.82 Putting into perspective, α = for 0.71 Catastrophizing and α = 0.78 for Blaming others.

Difficulties in Emotion Regulation Scale (DERS) [37]. This scale assesses different features of the emotion regulation process that may have several difficulties associated, including (a) non-acceptance, non-acceptance of emotional responses, (b) goals, difficulties in goal-directed behaviors when distressed, (c) impulse, difficulties in controlling impulsive behaviors when the person is distressed, (d) strategies, limited access to emotion regulation strategies perceived as effective, (e) awareness, lack of emotional awareness, and (f) clarity, lack of emotional clarity. Cronbach's α coefficients were α = 0.93 for total, α = 0.80 for impulse, α = 0.88 for strategies, α = 0.87 for non-acceptance; α = 0.81 for goals, α = 0.68 for awareness, α = 0.78 for clarity.

3.2.3 Morality

Moral disengagement questionnaire [38,39] in its Spanish version was validated by Rubio-Garay et al. [40]. It is a questionnaire composed of 36 items that measures the inclination to use the different moral disengagement mechanisms established by Bandura [39]: moral justification ("It is right to come to blows in order to protect friends"), euphemistic language ("Pushing is just a way of joking"), advantageous comparison ("Stealing a little money is not at all serious if you think of the large sums of money that others steal"), displacement of responsibility ("When young people live in a dangerous neighbourhood you can't reproach them for being aggressive"), diffusion of responsibility ("You can't blame a gang member for the damage caused by the gang"), distortion of consequences ("Telling small lies is not so serious since they don't hurt anyone"), attribution of blame ("People who neglect their things are to blame if they are stolen") and dehumanisation of the victim ("Some people deserve to be treated like animals"). Cronbach's α coefficients ranged from 0.82 to 0.93.

3.2.4 Prosocial Assessment

Prosocial behavior during quarantine. Participants had to answer the following questions: "Has your support for citizenship increased during the COVID-19 crisis?" (Yes/No). If they answered Yes, they were asked, "In what ways has your support for citizenship increased?" If they answered No, they were asked: "Why has your support for citizenship not increased?".

The Prosocial Tendencies Measure (PTM) [41]. This is a 23-item self-report that assesses six different prosocial behaviors: compliant (Helping others when directly requested or when complying with a social norm: "When people ask me to help them, I don't hesitate"), public (Helping others in situations where the helping act is visible to others, and there is public recognition involved: "I can help others best when people are watching me"), anonymous (Helping others without revealing one's identity, often in situations where no recognition is expected or given: "I tend to help needy others most when they do not know who helped them"), dire (Helping others in urgent or emergency situations where immediate assistance is required: "I tend to help people who hurt themselves badly"), emotional (Helping others in response to their emotional distress or suffering: "I tend to help others particularly when they are emotionally distressed"), and altruistic (Helping others with no expectation of personal gain, driven by a sense of moral or selfless motivation: "I think that one of the best things about helping others is that it makes me look good"). The scoring is according

to a 5 Likert scale from 1 (Does not describe me at all) to 5 (Describes me greatly). Cronbach's α coefficients ranged from 0.61 to 0.80.

Prosociality Scale [42]. This scale consists of 16 items and allows measuring prosocial behaviors in adolescents and adults by means of a total score. This questionnaire also allows discriminating subjects who are mostly prosocial from those who are not. The scale measures prosocialness as a trait. It includes items such as "I help immediately those who are in need" and "I am willing to make my knowledge and abilities available to others." Cronbach's α was 0.91.

3.3 Procedure

Due to the emergence of the pandemic and the declaration of the State of Alert by the Spanish Government, the sample was assessed through the Google form application. Questionnaires were administered during the second month of quarantine in Spain (from 1st April to 1st May, 2020), which was distributed via social media. The total duration to complete the tests was approximately 30 min. Regarding the order in the administration of the tests, participants filled out sociodemographic data first, followed by an empathy test, emotional regulation tests, morality and prosocial behavior tests.

3.4 Statistical Analyzes

Data were analyzed using Statistical Package for the Social Sciences, version 25 (SPSS; Armonk, NY, USA). First, a descriptive analysis of the sociodemographic, psychological, and prosocial behavior-quarantine variables of the sample was performed. Second, all participants were divided into two groups according to the item: "Prosocial behavior during quarantine". To check whether there were differences between the prosocial group and the non-prosocial group, a student's *t*-test analysis of means difference was performed, in which dependent variables were psychological and sociodemographic test, and the independent variable was the performance of prosocial behaviors during quarantine (Yes/No). Finally, to identify whether psychological variables predicted prosocial behavior during COVID-19 quarantine, we conducted a direct discriminant analysis method. The dependent variable was the performance of prosocial behaviors during quarantine (Yes/No). The independent variables were included based on the results of the student's *t*-test. To optimize the prediction with the least number of variables. Wilks's lambda was used to test the significance of the discriminant model. Coefficients were produced for all predictors, and the higher the coefficient, the more that item contributed to discriminating prosocial-non-prosocial participants. A *p*-value less than 0.05 was considered as statistical significance.

4 Results

4.1 Characteristics of Prosocial Behaviors

Descriptive analysis (Table 1) revealed that the types of prosocial behavior performed during the quarantine were: Generating awareness (20.5%), Supporting the close circle (19.7%), Supporting the distant circle (22.2%), Volunteering (9.4%); Donations (21.4%), and Not specified (6.8%). On the other hand, the reasons why the non-prosocial group did not carry out prosocial behaviors during the quarantine were the perception of not being able to help (52.7%), Low mood (25.5%), and Not specified (21.8%).

4.2 Between-Group Differences in Sociodemographic and Psychological Variables

The student's *t*-test means analysis revealed significant differences (Table 2) between groups in age ($p = 0.002$), anonymous prosocial behaviors ($p = 0.008$), moral disengagement mechanism of responsibility displacement ($p = 0.034$); adaptive emotional regulation strategies ($p = 0.041$); and difficulties to access

emotional regulation strategies ($p = 0.003$). Specifically, the prosocial group was characterised by being older than the non-prosocial group. In addition, the prosocial group used more adaptive emotional regulation strategies, a moral disengagement mechanism of responsibility displacement, and prosocial behavior from anonymity to a greater extent.

Table 1: Characteristics of the samples

Variables	Prosocial group (n = 117) Mean (± SD)	Non-prosocial group (n = 55) Mean (± SD)	*p*-value
Demographic variables			
Age	35.89 ± 11.86	30.64 ± 9.54	0.005*
Years of education	5.85 ± 1.72	5.64 ± 1.90	0.472
Political orientation	3.90 ± 1.65	4.15 ± 1.83	0.376
Prosocial information	Types of prosocial behaviors during quarantine % (n)	Reasons no prosocial behaviors % (n)	
	Supporting to the distant circle 22.2% (26)	Perception of not being able to help 52.7% (29)	
	Donations 21.4% (25)	Low mood 25.5% (14)	
	Generating awareness 20.5% (24)	Not specified 21.8% (12)	
	Supporting to the close circle 19.7% (23)		
	Volunteering 9.4% (11)		
	Not specified 6.8% (8)		

Note: SD, standard deviation. *$p < 0.05$.

Table 2: Statistically significant differences in sociodemographic and psychological characteristics between groups

Variables	Prosocial group (n = 117) Mean (± SD)	Non prosocial group (n = 55) Mean (± SD)	η^2	*p*-value
Age	35.89 ± (11.86)	30.64 ± (9.54)	0.98	0.002**
Displacement of responsibility	8.02 ± (2.56)	7.16 ± (2.25)	0.95	0.034*
Difficulties in emotional regulation strategies	18.03 ± (6.78)	21.44 ± (7.08)	0.98	0.003**
Putting into perspective	12.02 ± (2.11)	11.11 ± (2.52)	0.97	0.023*
Adaptive emotional regulation strategies	55.95 ± (7.28)	53.33 ± (8.73)	0.94	0.041*
Anonymous prosocial behaviors	8.87 ± (1.17)	8.58 ± (1.38)	0.98	0.008**

Note: Mean (± SD) is presented for each variable. *$p < 0.05$, **$p < 0.01$; η^2, eta-squared. Eta-squared (η^2) was used to provide estimates of effect sizes proposed by Cohen [43,44] where 0.01–0.06 was determined as a small effect, 0.06–0.14 as a medium effect and greater of 0.14 as a large effect.

4.3 Discrimination Analysis

In relation to discriminant analysis, Wilks' was significant (χ^2 [6] = 27,692; $p < 0.001$), showing that the comparison groups have different averages in the discriminant variables, i.e., the independent variables have discriminant power between the groups. According to Wilks' Lambda, all predictor variables were statistically significant ($p < 0.05$). To determine which variables contributed to explaining prosocial behavior during quarantine, we analyzed the standardised canonical discriminant function coefficients (Table 3). The variables with the highest discriminant power are: difficulties in accessing emotional regulation strategies (−0.545), followed by putting into perspective (0.475), anonymity (0.408), age (0.405), displacement of responsibility (0.345) and adaptive strategies (−0.144). In relation to the Structure matrix (Table 3), results showed, on one hand, that there was a direct correlation between prosocial behavior during quarantine and age, anonymous prosocial behavior, displacement of responsibility, and adaptive emotional regulation strategies. On the other hand, an inverse correlation was found between difficulties in accessing emotional regulation strategies and prosocial behavior. Therefore, the variables with the highest discriminant power are the emotional variables.

Table 3: Discriminant analysis results

Discriminant function	Canonical discriminant standardized coefficient	Structure matrix
Age	0.405	0.519
Displacement of responsibility	0.345	0.387
Difficulties in emotional regulation strategies	−0.545	−0.548
Putting into perspective	0.475	0.447
Adaptive emotional regulation strategies	−0.144	0.373
Anonymous prosocial behaviors	0.408	0.487

With regard to the location of group centroids from discriminant function analysis, the results indicated that, on average, the non-prosocial group is located in the negative scores of the independent variables (−0.616), and the prosocial group is located in the positive scores (0.289). Hence, it can be indicated that the independent variables have the ability to classify between the prosocial group and the non-prosocial group according to the score on the test.

Finally, the analyzes in the accuracy of the function to discriminate both groups (Table 4) indicated that 70.9% of the sample has been correctly classified: 74.5% of the non-prosocial group, as well as 69.2% of the prosocial group. Consequently, the variables used as predictors could be useful to discriminate between people who will carry out prosocial behavior during health/economic crises and people who won't.

Table 4: Group classification results

Classification results		Group	Predicted group membership		
			Non-prosocial	Prosocial	Total
Original	Count (N)	Non-prosocial	41	14	55
		Prosocial	36	81	117
	Percentage (%)	Non-prosocial	74.5	25.5	100.0

(Continued)

Table 4 (continued)

Classification results	Group	Predicted group membership		
		Non-prosocial	Prosocial	Total
	Prosocial	30.8	69.2	100.0

Note: 70.9% of original cases were correctly classified.

5 Discussion

The main objective was to study the psychological and sociodemographic variables (age, morality, emotional regulation, empathy) related to prosocial behavior. Unlike other previous crises, the COVID-19 pandemic was characterized by prolonged isolation due to mandatory lockdowns, pervasive media coverage highlighting infection rates and death tolls, and stress related to the rapid development and unequal distribution of vaccines [45–48]. These single factors in combination probably influenced prosocial behavior. [49,50].

The results indicated that age, anonymous prosocial behaviors, moral disengagement mechanism of responsibility displacement, and adaptive emotional regulation strategies showed a higher discriminant saturation in the prosocial group. Likewise, the non-prosocial group presented a higher discriminant saturation in difficulties in accessing emotional regulation strategies.

Results indicate that the majority of the evaluated sample engaged in performing prosocial behavior during the quarantine, demonstrating an increase in prosocial behaviors during social crises [32]. Prosocial behaviors performed were focused on donations (medical supply, economic, food), generating awareness (compliance with rules, showing empathy and solidarity in various contexts in the face of the pandemic situation and generating social awareness in social networks), supporting the distant circle (emotional/economic support to neighbours and vulnerable populations), supporting the close circle (emotional support to family and/or friends) and volunteering (support to associations, charity canteens, Non-Governmental Organizations (NGOs) or companies regardless of the professional word performed.

Concerning the psychological differences between groups, the results indicate that compared to the non-prosocial group, the prosocial group showed less difficulty in using emotional regulation strategies, greater use of the adaptive strategy of putting into perspective, greater tendency to help from anonymity, higher age, greater score in displacement of responsibility, and greater number of adaptive emotional regulation strategies.

According to age, it is presented as a good predictor variable of prosocial behavior. Our results are in line with previous studies [51–53]. Studies revealed that prosocial behavior in terms of financial generosity is higher in older adults than in younger adults [51], and that this increase in prosocial behavior was associated with raised emotional empathy [54].

In relation to the moral disengagement mechanism of displacement of responsibility (the act of concealing, not assuming or minimising the behavior performed through the attribution of responsibility to other people or a legitimate authority) [55], it has been found that it also has predictive power in prosocial behavior. Nevertheless, this result does not support previous literature or our hypothesis. Displacement of responsibility has been related to the justification of violence in aggressive individuals thus far [56,57]. Specifically, cyber-aggression or cyberbullying, bullying, intimate partner violence, etc. [28,58–60]. Likewise, it is connected with a reduced likelihood of performing prosocial behaviors [61].

In contrast to prior literature and in a novel way, the displacement of responsibility predicted prosocial behavior in the present global pandemic social crises. This is a situation of vulnerability that affects everyone equally and negatively in all aspects (health, economy, education, work, etc). We consider that the increase in prosocial behavior in catastrophic situations or disasters may be understood as a sense of social responsibility in the face of disaster and vulnerability [62]. Moreover, in these cases, prosocial behavior is promoted by governmental institutions and organized social groups [63], through the mass media every day during COVID-19. Thus, it has an evident role in promoting and directing prosocial behavior. Besides, our results could be explained in relation to the people's psychological state during quarantine: People received massive information through television and social networks about the suffering caused by COVID-19 worldwide, added to the death of family and friends [64–67]. In this way, such moral disengagement could be related to the condition of vulnerability in which we found ourselves during quarantine: 1) arousing greater empathy towards disadvantaged people in the prosocial group [68] and, 2) orienting help to others who find themselves in emotionally evocative circumstances [41].

On the other hand, uncertainty, hopelessness, or helplessness during quarantine [67,69] would be related to the perception expressed by the non-prosocial group as "not being able to do anything about the situation". This is the most frequent reason for not performing prosocial behaviors during the quarantine. These results may be related to the absence of differences in some variables between one group and the other. However, according to the objectives of this study, we found variables that had a very strong impact and predicted prosocial behavior or may inhibit it. At the same time, and as we have mentioned above, the press coverage during the pandemic has had a very strong impact on the population. Alarmism and sensationalism have been common, coinciding with an explosion in the number of infections and causing fear [70–72]. This is the cause of catastrophism in crises that can demobilize the actions of a large part of the population [72,73].

Regarding the variables related to emotional dysregulation, the results would suggest that individuals with difficulties in accessing emotional regulation strategies did not carry out prosocial behaviors during quarantine. These findings are supported by the study of Lockwood et al. [22], where they found that a maladaptive regulation strategy (expressive suppression) is negatively associated with prosocial inclinations. In addition, Park et al. [74] found that emotional dissonance was related to less sympathy for the feelings of others and less willingness to help people. Similar to the moral disengagement mechanism, the influence of social media during the lockdown may have played a role in this dynamic; while it provided a platform for maintaining connections and could positively affect prosocial behavior [75], the potential for negative emotional contagion in digital contexts might have further hindered the ability of individuals to engage in prosocial actions [76].

Also, these findings on emotional regulation as a motivating factor for prosocial behavior are in consonance with the theory of Eisenberg et al. [77], who defend the predictive power of the capacity to regulate emotions in prosocial behavior. On the other hand, people with low emotional regulation are more likely to exhibit antisocial rather than prosocial behavior in an emotional situation.

This last point underscores the need to explore both prosocial and antisocial responses in crisis contexts. Recent research has shown that antisocial behaviors can increase during crises due to perceived threats (e.g., health, economic threats) [78]. More concretely, studies have shown that individuals with antisocial tendencies, including low empathy and high levels of dark triad traits, are less likely to comply with COVID-19 containment measures and engage in fewer prosocial behaviors [79–81]. These findings suggest that antisocial tendencies are crucial for understanding how individuals behave during social crises and that they might be mediated by variables such as empathy or emotion regulation.

In turn, our results indicate that another predictor of prosocial behavior related to emotional regulation strategies is the mechanism of putting into perspective, which is focused on re-evaluation, diminishing

and relativizing the severity of the event. This specific result could be related to studies about hope in the presence of catastrophe [82–84], which would involve experiencing positive effects to keep engagement and motivation in overwhelming situations [82,83].

Finally, regarding anonymous prosocial behavior, referring to the prosocial motivation or tendency based on helping others without anyone knowing about the help [41], the results indicate that it is a good predictor of prosocial behavior. The literature supports this result, indicating that this prosocial propensity is related to empathy, being understanding and socially responsible, being motivated by the sympathy of others and internalised norms [85]. Along the same line, other studies showed that more altruistic individuals under the anonymity condition offered higher amounts of money [86,87]. Our outcomes, along with previous literature, evidence that individual altruistic acts cannot be fully explained by the possibility of reciprocity. Moreover, altruistic motivation from anonymity may be related to the avoidance of criticism [88] and to avoid being seen as seeking the approval or respect of others when engaging in prosocial behavior [41].

6 Limitations and Implications

This study has several limitations. Firstly, it was carried out with a Spanish population, so the generalizability of the results could be limited to other cultures and countries. However, we consider that they could be generalizable since the findings replicate the results found in previous studies from different countries [22,89,90]. Second, self-report measures have been used, which may lead to social desirability bias [91,92]. Nevertheless, the instruments selected in our study count with literature supporting their psychometric validity. Thirdly, this study is cross-sectional, providing differences in prosocial behavior during a specific point in time, which makes it difficult to perform causal relationships between variables. In addition, this could be the reason why we have not found a relationship between prosocial behavior and other variables such as political orientation and empathy. Fourth, the political orientation variable may have been limited, as the literature shows it is associated with other variables related to socioeconomic status (SES), such as educational level, income, access to resources, and environmental characteristics, among others, which were not considered in this study. Fifth, the majority of the sample is composed of women, which may limit the generalizability of the results. Bearing this in mind and although it would be desirable to know more predictor variables, we consider our results a good approximation. However, it would be relevant to replicate these results in other health/economic crises, as well as to perform longitudinal studies to analyze whether changes in prosocial behavior and associated psychological variables are observed in crisis times. Therefore, future studies could develop emotion regulation and empathy tests specifically related to catastrophic situations [82–84]. Despite this limitation, the present study used the emotional regulation and empathy tests most commonly employed in the literature as a preliminary approach, given that studies focused on adults and prosocial behavior are very scarce, with the majority focusing on children and adolescents [93]. In addition, future studies should explore the influence of SES, along with political orientation, on prosocial behavior in greater depth, both individually and collectively. Lastly, future studies should examine the interaction between gender and prosocial behavior, as well as the related variables.

Despite these limitations, this study has several implications. At the psychological level, emotional support during social crises is needed, particularly in the promotion of adaptive emotional regulation strategies. We have shown that the non-prosocial group showed difficulties in emotional regulation, which may have been the reason why they did not engage in prosocial behaviors. At the educational and social level, it would be necessary to incorporate workshops in schools and colleges to promote emotional skills related to prosocial behavior, taking age into account. A relevant example is the Virtual Hero Program, which improved emotional regulation and promoted prosocial behavior in Colombian adolescents during

COVID-19 isolation [94]. Its success highlights the potential of structured interventions to enhance well-being, solidarity, and prosocial actions in crisis contexts. Taking into account the findings of this study and the existing literature, it is evident that improving prosocial behaviors requires focusing on empathy [95], secure attachment [96], and emotional regulation [97]. Based on this, we propose designing an intervention program targeting these aspects, alongside the development of public policies that prioritize mental health, emotional education, and community solidarity to effectively promote prosocial behavior.

7 Conclusions

Predictors of prosocial behavior have been found to be age, displacement of responsibility, adaptive strategies of emotional regulation, and anonymous prosocial motivation. The findings would indicate that there has been a significant increase in prosocial behaviors during quarantine. At the same time, prosocial behavior can be encouraged and trained through the psychological variables found. Studies showed that prosocial behavior and altruism are essential aspects of facing the current social crisis caused by COVID-19. It is relevant to highlight that disasters can hardly be predicted, but moral and emotional education can be worked on. To enhance the effectiveness of educational and community programs aimed at promoting prosocial behavior, it is essential to integrate various predictive factors, such as age, adaptive emotional regulation strategies, and prosocial motivation. In particular, it is important to consider and adapt the intervention to the age of the participants and their levels of emotional regulation and moral characteristics. By personalizing the intervention in this way, we can ensure its effectiveness across various demographic groups.

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