

Helping After the 2020 Earthquake in Croatia: The Role of Men's and Women's National Identity

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The goal of this study was to investigate whether the association between national identity and providing direct aid to individuals impacted by the 2020 earthquake in Croatia differs depending on the gender. A convenience sample of 374 Croatian residents (70.1% women) between 18 and 64 years old completed a cross-sectional survey on-line. Participants, using valid questionnaires, self-reported their level of national identity and how much direct assistance they provided to people in earthquake-affected areas. The study employed a linear regression model to test the moderating effect of gender on the relationship between national identity and direct aid provision. The results showed that the interaction between national identity and gender significantly affected helping: higher levels of national identity predicted greater helping among men but not women. This suggests that men were more motivated than women to provide aid after the earthquake due to their sense of national identity and affiliation with the nation. These findings have significant implications for disaster relief efforts, as different motivations may be at play when providing aid during crises. Relief organizations can tailor their efforts to meet the needs and motivations of different groups, resulting in more effective relief efforts.

Keywords: national identity, gender, helping, earthquake

On December 29, 2020, an earthquake measuring 6.2 on the Richter scale struck the wider Petrinja region in Croatia, 50 km from the capital, Zagreb (Markušić et al., 2021). According to the International Federation of Red Cross and Red Crescent Societies (2021), the earthquake was the most powerful recorded in the country over the past 140 years, resulting in eight fatalities and injuring 36 individuals, ten of whom were severely wounded. The broader Petrinja area experienced significant physical destruction due to the earthquake, with around 22% of structures suffering extensive to severe harm and 65% enduring minor to moderate damage (Markušić et al., 2021). Many people in affected areas urgently required humanitarian assistance in the form of shelter, food, and household items. People and institutions across the country organized actions to collect money, food, clothing, and personal hygiene products to help those affected. Within 24 hours of the earthquake, volunteers from all over Croatia joined in search-and-rescue operations together with firefighters, police, civil protection personnel, and Croatian Red Cross workers. During the month after the earthquake, volunteers contributed to rescue operations, evacuation, distribution of food and household items and provision of psychological counseling (International Federation of Red Cross and Red Crescent Societies, 2021).

Television is widely recognized as a significant source of daily news consumption (Fatima, 2017), along with other traditional and digital media platforms such as newspapers and social media. In the aftermath of the earthquake, various media outlets covered extensively the motivations of volunteers who came forward to assist the earthquake victims. These stories were deemed newsworthy (Ullah & Jan, 2021) and often emphasized the volunteers' strong identification with and emotional connection to the people of Croatia. The coverage provided insight into the motivations and experiences of the volunteers and helped to raise awareness and understanding of the impact of the earthquake on the affected communities. This is consistent with the idea that natural disasters and other threats can lead one to identify strongly with one's group, which in turn can promote prosocial and other behaviors (e.g., Clarke, 2002; Drury, 2018; Fritz, 1996; Jencson, 2001; Jong et al., 2015; Paton & Irons, 2016; Solnit, 2009; Walker-Springett et al., 2017). In particular, terror management theory explains how identification with the nation can contribute to helping behavior in times of disasters and other deadly threats (e.g., Greenberg & Kosloff, 2008; Greenberg et al., 1992; Greenberg et al., 1997; Pyszczynski, 2004; Pyszczynski et al., 2015). In this paper, we draw on terror management theory to examine whether and how a sense of national identity influenced assistance to people affected by the 2020 earthquake in Croatia. Given previous findings within terror management theory that a heightened sense of mortality increases the accessibility of nationalistic thoughts among men but the accessibility of relational thoughts among women (Arndt et al., 2002), we tested whether gender moderated association between national identity and provision of direct help.

Terror management theory

The term "disaster" typically refers to a significant event, whether caused by human actions or natural forces, that affects people and disrupts their lives and various resources on a large scale (Kaleem et al., 2016). During the occurrence of natural disasters, individuals are confronted with the risk of losing their homes, belongings, community ties, physical well-being, and, most gravely, their lives. In the realm of social psychology, the impact of the threat of death on human behavior is often elucidated through the lens of the terror management theory (TMT) framework (e.g., Greenberg et al., 1992).

This theory stipulates that threatening events can induce a paralyzing fear of one's own mortality, which people manage by adopting a cultural worldview that gives them a sense of meaning, order, and permanence (e.g., Greenberg et al., 1992). Cultural worldviews provide a set of standards for what is valued behavior („good“ vs. „evil“) and provide a foundation for believing that one's life has meaning even after death (Pyszczynski, 2004). Culture provides us a sense of immortality, not only by enabling belief in heaven or reincarnation, but also by allowing us to identify as part of something larger, more significant, and enduring than ourselves—a nation, ethnic group, profession, or family—that will continue to exist long after our death (Pyszczynski, 2004).

One of the tenets of terror management theory is that awareness of death increases one's solidarity with other members of one's group (Greenberg et al., 1992; Pyszczynski, 2004). Such solidarity reflects the personal meaning that one attaches to belonging to a group such as a nation (Leach et al., 2008). This may help explain social behavior. An earlier version of terror management theory (e.g., Greenberg et al., 1986) held that heightened awareness of death leads people to be more accepting of people similar to them and more hostile to those who are different (Pyszczynski, 2004). The theory was later revised to suggest that cultural worldviews can be sufficiently broad and tolerant to accept worldviews of other groups, even when the worldviews conflict (e.g., Greenberg et al., 1992). In any case, it seems clear that events that heighten one's

feeling of mortality lead one to identify more strongly with a group, which in turn strengthens one's motivation to help other members of that group (Levine et al., 2005).

Purpose of the study and the study hypothesis

Research supports the prediction of terror management theory that natural disasters or other potentially deadly threats strengthen one's national identity (e.g., Conte et al., 2022; Fokt, 2020; Maki et al., 2018). For example, patriotism among younger adults increased during the two months after the first Covid-19 lockdown in Italy (Conte et al., 2022). An increase in national identity was also observed among Chileans following the 2010 earthquake there (Maki et al., 2018).

Some studies have examined the relationship between one's national identity and one's engagement in relief efforts after natural disasters (Levine & Thompson, 2004; Maki et al., 2018). Levine and Thompson (2004) conducted an experiment at an English university where participants' British or European identity was made salient. They were asked to evaluate their willingness to provide financial help or political intervention for victims of a natural disaster in a fictitious place in either Europe or South America. When British identity was salient, intervention levels were similar for both locations as Europe and South America were perceived outside the nation's boundaries. However, when the disaster occurred on the European mainland and European identity was salient, participants were significantly more likely to intervene. Unlike Levine and Thompson (2004), Maki et al. (2018) focused on a real disaster and conducted surveys with individuals who were directly impacted by it. Their research expands upon previous studies in social psychology and theory regarding the consequences of natural disasters, such as the work done by Drury et al. (2016). Their findings align with Drury et al., (2016) as they discovered that a particular type of social identity, namely national Chilean identity, plays a significant role in motivating people to help in the aftermath of an earthquake. Therefore, their research emphasizes the importance of both general identification with others (as highlighted by Drury et al., 2016) and the specific form of identity associated with a particular geographic region in fostering social cohesion and contributing to relief efforts in times of disaster. The authors of the study also draw the conclusion that their findings have broader implications for theoretical models that explore the relationship between threatening events and social interactions, such as terror management theory (as demonstrated by Greenberg et al., 1990). Their research revealed that the most significant increases in helping motivations before and after the earthquake were related to both self-protection and social reasons. Therefore, their findings suggest that these motivations align with and support existing theoretical models that examine the impact of threatening events on social behavior.

Further, Maki et al. (2018) showed that higher Chilean national identity predicted only some types of prosocial behavior after the 2010 Chilean earthquake. More specifically, it was shown that national identity predicted general money donations (i.e., donating money to people in the streets, donating spare change to charities, and donating money for national collections), as well as donating money to help with disasters in general and donating goods and money after the earthquake. However, national identity did not predict participation in the reconstruction effort. This finding suggests that national identity may influence the way people provide aid after natural disasters.

As can be seen, Maki et al., (2018) in their study measured different types of helping. According to Dovidio et al., (2006), helping can be defined as an action that benefits or improves the well-being of another person, and which can be divided into different categories. One category refers to whether it is indirect help, such as donating to the earthquake victims, or direct

help to the person in need, such as distributing humanitarian aid in the form of food and household items to the earthquake victims.

In this paper, we focused on direct aid to earthquake victims. Research on the determinants of direct forms of aid after disasters is of paramount importance because direct aid is what is most needed at the time of the disaster. Specifically, this study analyzes the direct help provided after an earthquake in Croatia and aims to explore how gender influences the relationship between Croatian national identity and direct aid to earthquake victims. Gender is commonly studied as a moderator in research related to a heightened sense of mortality, as highlighted by Burke et al., (2020). The 2010 meta-analysis by Burke et al. showed that gender moderates the effects of increased mortality salience in some contexts but not in others. This meta-analysis suggests that men and women may respond differently to the threat of death depending on the specific circumstances or dependent variables in the studies. Moreover, previous research conducted by Arndt et al., (2002) revealed that mortality salience increases the accessibility of nationalistic words for men and relational words for women. This finding provides a rationale for investigating whether gender acts as a moderator between national identity and post-earthquake assistance. This approach aligns with the existing understanding of gender differences in terms of two types of interdependence, as described by Brewer and Gardner's (1996) distinction between collective and relational interdependence. Collective interdependence refers to the aspect of self defined by membership in important groups (e.g., nation), while relational interdependence pertains to the aspect of self defined by roles in close relationships (e.g., sister, husband). Gardner and Gabriel (2004) have stated that, overall, there are no differences in the level of interdependence between women and men. However, women tend to have a stronger relational sense of self compared to men, whereas men tend to have a stronger collective sense of self compared to women.

Consequently, the hypothesis put forth in this study is that stronger national identity will predict greater involvement in post-earthquake assistance, but specifically among men.

Method

Participants

The study involved 374 Croatian adults, consisting of 262 women (70.1%) and 112 men (29.9%), who were between 18 and 64 years old ($M = 35.03$, $SD = 11.449$). They were living in five counties affected by the earthquake: Sisačko-Moslavačka County ($n = 43$, 11.5%), City of Zagreb ($n = 236$, 63.1%), Zagreb County ($n = 48$, 12.8%), Karlovac County ($n = 10$, 2.7%), and Krapinsko-Zagorska County ($n = 37$, 9.9%).

Procedure

The research received ethical approval from the Ethics Committee of the Catholic University of Croatia and was carried out utilizing SoSci Survey (Leiner, 2019). The link to the on-line survey was made available to participants via social networks. The first part of the survey informed potential participants about the purpose of the study, and it explained that responses would remain anonymous and that one could withdraw from the study at any stage without repercussions. Those who provided consent after reading the first part of the survey were then given access to the questions. Each questionnaire had separate instructions to ensure clarity and participants' comprehension. The online survey included a large number of closed statement items, with only 12 of them being used in this study. Data collection session lasted 20 minutes on average. Data were collected between June and September 2021.

Measures

This study collected data on participants' gender, strength of national identity and amount of direct help to earthquake-affected people.

National identity

Participants answered the 10 items of the Group Identification Scale (Brown et al., 1986), half of which were affirmative (e.g., "I am a person who identifies with my nation") and half were negative (e.g., "I am a person who tries to hide belonging to my nation"). Responses were on a five-point scale: 1, "never"; 2, "seldom"; 3, "sometimes"; 4, "often"; and 5, "very often". After reverse-coding the negative items, responses on all items were summed, with higher scores indicating stronger national identity. Cronbach α for this measure was .857.

Helping

Participants indicated how much they engaged in the following forms of direct help to earthquake-affected people, based on the the scale by Barraket et al. (2013) for measuring spontaneous volunteering during natural disasters: counselling, distributing donations, health work, building and reconstruction, general clean-up, transportation, food catering, fundraising, and organizational work (such as volunteering in a call center). Participants indicated the amount of each behavior using an 8-point scale: "0", not involved; "1", one day; "2", two-three days; "3", four-seven days; "4", more than one week to two weeks; "5", more than two weeks to four weeks; "6", more than four weeks; or "7", still involved. Responses on all items were summed to give an overall score, such that higher scores indicated greater amounts of direct help. Cronbach α for this measure was .986.

Demographic data

Participants were asked to indicate their age and gender; the latter was coded as 0 for female or 1 for male.

Data analysis

The 'stats' package in R 4.1.1 (R Core Team, 2021) was used to generate descriptive statistics and analyze correlations and moderation. Before moderation analysis, the variable "national identity" was mean-centered using the 'jtools' package (Long, 2020). Standardized regression coefficients were obtained using the 'lm.beta' package (Behrendt, 2014), while simple slope coefficients and interaction plots were calculated using the 'interactions' package (Long, 2019).

Results

Table 1 contains descriptive statistics for study variables and correlations among them. On average, participants' level of direct helping after the earthquake was low, while their level of national identity was high. The relationship between gender and post-earthquake direct assistance was statistically significant but very weak, with male participants providing more direct assistance to people affected by the earthquake. In contrast, the relationship between gender and national identity and between national identity and direct aid to earthquake-affected people was not statistically significant.

Table 1

Descriptive Statistics for Study Variables and Correlations Among Them

	1.	2.	3.
1. Gender	-	.07	.12*
2. National Identity		-	.08
3. Helping			-
<i>M</i>	-	38.49	5.52
<i>SD</i>	-	6.71	9.88
<i>Min - Max</i>	-	14-50	0-63

Note. Observed minimum and maximum values are presented. * $p < .05$

To test whether gender moderates the effect of national identity on helping after the earthquake, linear regression was performed in which national identity, gender, and their interaction were treated as predictor variables. The overall model was significant [$F(3,370) = 6.05, p < .001$], and it explained around 5% of the observed variance in the amount of helping ($R^2 = 0.047$).

Table 2

Linear Regression to Assess National Identity, Gender, and Their Interaction as Predictors of Helping After the Earthquake

Variable	<i>b</i>	β	<i>SE</i>	<i>t</i>	<i>p</i>
National Identity	-0.06	-0.04	0.09	-0.67	.504
Gender	2.25	0.10	1.10	2.05	.040
National Identity \times Gender	0.53	0.20	0.16	3.28	.001

Table 2 shows that gender, but not national identity, significantly affected the amount of helping. Men in the sample were more inclined to help after the earthquake than women were. The interaction between national identity and gender also significantly affected helping: higher levels of national identity predicted greater helping among men but not women (Table 3, Figure 1).

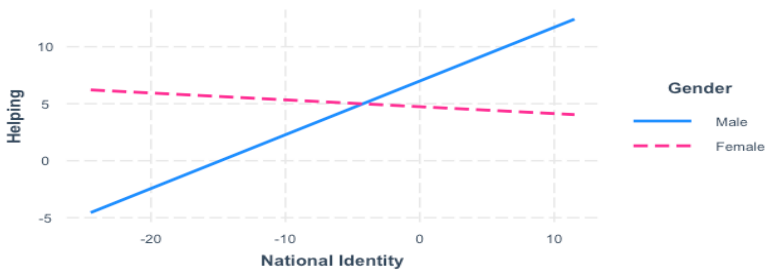
Table 3

Simple Slope Effects of National Identity on Helping After the Earthquake by Men and Women

Gender	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>
Female	-0.06	0.09	-0.67	.504
Male	0.47	0.13	3.49	.000

Figure 1

Plot of Simple Slope Effects of National Identity on Helping After the Earthquake by Men and Women



Discussion

In this study, we investigated whether gender moderates the influence of national identity on direct helping after an earthquake. The results are consistent with our hypothesis that stronger national identity in men, but not women, would be associated with greater direct aid to earthquake victims. These findings add to the body of knowledge about the role of gender in terror management theory. Gender is one of the most commonly studied moderators of heightened awareness of mortality (Burke et al., 2010; Passalacqua, 2016), and it seems to act as a moderator in some contexts but not others (Burke et al., 2010). This suggests that men and women differ in their strategies to avert death in some contexts but not others. Given the differences between men and women in collective and relational interdependence and differences in how deadly threats affect the two genders (Arndt et al., 2002; Gabriel & Gardner, 1999; Gardner & Gabriel, 2004), we suggest that gender should be explored more deeply for its moderating effects on national identity in the context of terror management theory.

Our results suggest that campaigns that reinforce a sense of national identity may indeed be effective in motivating men to participate in direct assistance to disaster victims. Future research should investigate whether this strategy is indeed effective in encouraging citizens to help those affected by the disaster indirectly, such as through monetary donations. Asking citizens to donate money to a public fund that would benefit earthquake victims (Šarčević, 2021) was the main goal of the humanitarian campaign launched by public television in Croatia two days after the massive earthquake in Croatia in December 2020. This campaign ran under the slogan "You are not alone with us" ("Uz nas niste sami"). As part of the campaign, the patriotic song "I give you my heart, my homeland" ("Dajem ti srce zemljo moja") by singer Doris Dragović was broadcast, accompanied by dramatic footage from the earthquake-affected areas and heroic acts of mainly male individuals who directly helped the earthquake victims.

This is, to our knowledge, the first study to examine the role of gender in the relationship between national identity and helping behavior after an earthquake, so further studies are needed to validate and extend our results. Our findings should be interpreted with caution because our sample was nearly 70% women, and all came from regions of the country directly affected by the earthquake. Both of these factors threaten the generalizability of our findings. Future studies should examine the difference in the association between national identity and helping behavior among participants living near and far from the epicenter of the earthquake. Our study was conducted only with participants from the five regions where the earthquake was felt. Future studies should investigate what kind of help people from regions far from the earthquake center provide to people affected by the earthquake and whether Croatian national identity is related to this kind of help. In a study by Maki et al., (2018), national identity was shown to predict indirect aid (e.g., monetary donations) but not direct aid through participation in reconstruction. The researchers in that study observed that the proximity to the earthquake's epicenter could potentially impact the findings. They discovered that participants residing in the region closest to the epicenter exhibited the strongest sense of national identity and showed greater willingness to engage in reconstruction endeavors. From the perspective of terror management theory (e.g., Greenberg et al., 1986; Greenberg et al., 1992), this could be explained by the fact that participants in the closest region faced a greater threat of death than participants living in the farthest region. And finally, we surveyed the participants only once at 5-8 months after the earthquake, yet national identity is inherently dynamic (Windari, 2021). Thus, we cannot exclude that our findings might have been different if we had surveyed the participants sooner or later after the earthquake.

This study uses terror management theory to predict the provision of direct aid to earthquake victims after the earthquake in Croatia. The findings may also deepen our understanding of relief efforts after other types of disasters, which is particularly important given the risk that natural disasters will become more frequent and intense due to global climate change (Shaw et al., 2010). Therefore, these findings have practical implications for emergency planners and professional responders who need to understand the factors that promote relief behavior after a disaster.

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