22 November 2024

Abstract

While at first the fear of COVID-19 disease spread was limited by the fact that the pandemic appeared to be confined to China, the growing emergency in Italy and the rapid escalation in positive cases and deaths have made the threat of this disease a national as well as global phenomenon. In the present research, a questionnaire was collected both before ($n = 396$) and after ($n = 250$) the outbreak of the pandemic in Italy. The aim of the research was to analyze the possible mediation of binding moral foundations on the relationship between concerns over COVID-19 and prejudice vis-à-vis immigrants. As hypothesized, the results show that concerns over COVID-19 increased greatly after the start of the Italian pandemic. Moreover, both before and during the pandemic the relationship between concerns over COVID-19 and prejudice toward immigrants is mediated by binding moral foundations.

Keywords: COVID-19; prejudice; moral foundation theory; pandemic; Italy

Concerns over COVID-19 and Prejudice: Pre- and During-Pandemic in Italy

The COVID-19 pandemic that has affected China since December 2019 has had a certain amount of media resonance in Italy. This has brought the topic of contagion and concerns about an eventual arrival of the disease in Italy into people's daily conversations (Emiliani et al., 2020). When the first cases developed in Italy at the beginning of February 2020 and whole regions had a very alarming increase in case numbers, the pandemic became a national case (Gozzi et al., 2020; Vicentini & Galanti, 2021), so that in a short time Italy became the country with the highest number of infected people and deaths (later overtaken by other nations). While at first people and government authorities were convinced that the disease affected only distant countries (so-called *normalization of the risk*, see Vicentini & Galanti, 2021), with the drastic and rapid escalation of cases in Italy, concerns about the COVID-19 pandemic increased greatly (Gozzi et al., 2020). This led the government to impose restrictions on the free movement of people, the first lockdown order in Europe and in the so-called Western countries (9 March 2020).

The interest of the present study is to investigate whether the concerns about the contagion and the spread of COVID-19 is related to attitudes of prejudice toward immigrants. As some studies have remarked (e.g. Bianco et al., 2021; Clissold et al., 2020; Giacomelli et al., 2020; Gordils et al., 2021; Hartman et al., 2021), concerns about an invisible enemy, such as a virus, can indeed lead to the emergence of feelings and behaviors of social exclusion by the political world, the media, and by people in their daily lives. In recent decades, Italy has been a destination, both temporary and permanent, for immigrants coming mainly from Africa and this has led to a re-surfacing of feelings, attitudes and behaviors openly hostile toward these minorities (Barisione, 2020; Passini & Villano, 2018). In Italy, as well as in other countries, the current pandemic seems to have exacerbated these feelings and increased discrimination against migrants (Bianco et al., 2021; Gordils et al., 2021). The aim of the

present research was to analyze whether concerns over COVID-19 are connected with prejudicial attitudes toward immigrants and whether individual moral foundations may explain this relationship. Concerns over COVID-19 were assessed by considering the fear of personal exposure to COVID-19. Recent studies have already examined the relationship between concerns over COVID-19 with moral foundations and prejudicial attitudes (e.g. Bianco et al., 2021). The added value of the present research is to have had the opportunity to analyze these relationships before the outbreak and during the pandemic in Italy. As many recent studies have been conducted during the pandemic, it is thought to be of interest to have data also related to when the pandemic had not yet reached Italy. In the next paragraph, the variables investigated will be briefly introduced.

Moral Foundations as Mediator between Threat and Prejudice

As many studies (e.g. Adam-Troian & Bagci, 2021; Van Bavel et al., 2020) have pointed out, the recent health emergency related to the spread of the COVID-19 virus represents a globally threatening event that may actually lead to changes in intergroup relations, as pandemics can breed feelings of threat, uncertainty and fear (Gordils et al., 2021). The psychosocial literature on threat perception (Adam-Troian & Bagci, 2021; Duckitt, 2013) has indeed emphasized how threatening events, both on a personal and collective level, can affect people's attitudes and behaviors and how feeling threatened or experiencing uncontrolled uncertainty can lead people to being more prejudiced against minorities. Studies (e.g. Adam-Troian & Bagci, 2021) have shown how events like natural disasters (e.g. earthquakes) as well as violent conflicts (e.g. terror attacks) can lead people to greater favoritism for in-group members and to the emergence of hostile feelings toward out-groups. Prejudice is classically defined as "an aversive or hostile attitude toward a person who belongs to a group, simply because he belongs to that group" (Allport, 1954, p. 7). Studies (e.g. Savun & Gineste, 2019) have shown that people often look for scapegoats to

blame for unknown threats or the perception of national insecurity. Some research has

specifically analyzed how perceiving a disease threat – such as a potential avian influenza

pandemic (Green et al., 2010) or the recent COVID-19 pandemic (Roberto et al., 2020) – is

connected with prejudicial attitudes toward immigrants. Many studies (e.g. Bianco et al.,

2021; Gordils et al., 2021; Tabri et al., 2020) have shown that concern about the coronavirus

is related to negative attitudes toward Chinese migrants as well as other minorities.

The relationship between threat perception and prejudice was classically addressed by

analyzing the mediating effect of several variables (see Duckitt, 2013; Riek et al., 2006).

Among these, individual foundations related to morality play a relevant role. The moral

system is defined as an interconnected set of virtues, values, and norms that regulate

individuals' social life (Haidt & Graham, 2007). At first the literature on how individuals

judge morally focused on the individual-based concerns of harm and fairness. Today, instead,

research has led to broadening the field to other moral domains beyond these (Graham et al.,

2011). Specifically, moral foundations theory (MFT) identifies five moral foundations (Haidt

& Graham, 2007), each of these related to a sensitivity to a specific domain of social behavior

(Tamborini et al., 2017): care for the suffering of others; fairness with equal treatment;

ingroup with commitment and favoritism toward ingroup members; authority with deference

to traditions and hierarchies; and purity through disgust mechanisms. The first two, namely

care and fairness, are individualizing foundations according to which emphasis is placed on

protecting individuals from harm or unfair treatment by other individuals and institutions.

The other three, namely ingroup, authority, and purity, are binding foundations according to

which emphasis is placed on binding people into those roles, duties, and mutual obligations

established and prescribed by institutions (Graham et al., 2011).

Several studies have considered the effect of these moral foundation on prejudicial

attitudes. Binding foundations are generally predictive of anti-immigrant attitudes, whereas

individualizing foundations are negatively correlated (e.g. Baldner & Pierro, 2019; Hadarics & Kende, 2018). As Hadarics and Kende (2018, p. 737) pointed out, "binding morality serves as a moral base for negative attitudes toward groups that are perceived as a threat to the ingroup's norms, values and institutions that bind people together." Thus, in particular, studies have emphasized that the possession of binding moral foundations leads to perceive culturally different social groups as a threat and to be more prejudiced against migrants (Bianco et al., 2021). In the present research, the mediation of moral foundations on the relationship between concern over COVID-19 and prejudice toward immigrants was investigated by considering data collected before and during the pandemic that has seriously affected Italy. Some studies have already shown how binding moral foundations mediate the effect of threat perception on prejudice, while the same effect was not found as concerns individualizing foundations. For instance, some studies (Hadarics & Kende, 2018; Tamborini et al., 2017) have pointed out that the accessibility of binding moral intuitions and foundations may explain the influence of threatening news and fear on biased attitudes toward minorities and social groups already labelled negatively, as these groups are seen as a threat to the core values that bond the ingroup. By specifically analyzing the current pandemic situation, Bianco and colleagues (2021) have shown how it is morality in regard to authority that mediates the effect of concerns over COVID-19 on prejudice. The issue that binding foundations mainly mediate the threat-prejudice relationship is related to the fact that the individuals who attach particular importance to such morality are those most sensitive to social threats and most convinced that the external threat can be fought with total confidence in the institutions and in their ethical and moral dictates (Bianco et al., 2021; Van Leeuwen & Park, 2009).

In the present study it was hypothesized that the levels of concern over COVID-19 pandemic would highly increase after the pandemic was officially announced in Italy.

Moreover, both before and during the pandemic it was hypothesized that the relationship between concern over COVID-19 and prejudice toward immigrants would be mediated by binding moral foundations.

Method

Participants

The participants were contacted online, using an Internet questionnaire constructed using Limesurvey, a survey-generating tool (http://www.limesurvey.org). The participants were recruited by means of a *snowballing* procedure. Specifically, graduate students were asked to recruit adult individuals. Respondents were advised that their participation was voluntary and that their responses would remain anonymous and confidential. No fee was offered. The questionnaire was drafted in Italian. The subject's IP address was monitored in order to make sure no one re-entered the survey site. The research was conducted in agreement with the ethical norms laid down by the Italian National Psychological Association.

The data were collected in two distinct periods and samples. The first data were gathered after the Chinese pandemic and before Italian lockdown (January 2020, pre-pandemic): 396 people (70.2% women) with age ranged from 18 to 75 years ($M = 30.81$, $SD = 12.66$). The second ones were collected after the Italian pandemic and subsequent national lockdown (February and March 2020, during-pandemic): 250 people (59.6% women) with age ranged from 18 to 75 years ($M = 30.48$, $SD = 10.61$).

Measures

All measures employed a seven-point response scale (ranging from 1 = *not at all* to 7 = *very much*). Scale reliabilities are shown in Table 1.

Concerns over COVID-19. Participants were asked to respond to four questions related to their concerns about the COVID-19 pandemic, created specifically for the present

research: "How worried are you about the coronavirus," "How often do you think about the coronavirus," "How often do you talk about the coronavirus" and "How much attention do you pay to the coronavirus information in the media. These four items were aggregated using the mean to compute a unique index (COVID-19). The unidimensionality of the construct was confirmed by means of a parallel analysis. One thousand random datasets that parallel aspects of the empirical data (i.e., sample size and number of items) were simulated. The number of factors extracted was indicated by whether eigenvalues from the actual dataset exceed the 95th percentile of simulated eigenvalues. Results showed that just the first factor in the real data set (2.98, 0.46, …) had an eigenvalue larger than the one from the simulated data sets (1.12, 1.04, …), as an indication for unidimensionality.

Moral foundations. The short 20-item version of the Moral Foundations Questionnaire (MFQ) by Graham et al. (2011) was used to assess moral foundation endorsement. Italian items validated by Bobbio and colleagues (2011) were used. Designed to identify the foundations used by the respondent as bases for moral judgments, the MFQ consists of five moral foundations (i.e., harm, fairness, ingroup, authority, purity), each of which was assessed with four items divided into two parts (i.e. moral relevancy and moral judgment). Moral relevancy focuses on how relevant certain items are to respondents' perceptions of morality on a 7-point scale (e.g. "whether or not someone suffered emotionally," harm subscale). Moral judgment (10 items) is centered on how much participants agree with different items relevant to a given moral domain on a 7-point scale (e.g. "people should be loyal to their family members, even when they have done something wrong," ingroup subscale).

Prejudice. The Italian version of the 10 items subtle-blatant prejudice scale by Pettigrew and Meertens (1995) was used with reference to immigrants. This scale was

validated by Arcuri and Boca (1996) for the Italian context. As Gattino and colleagues (2008) discussed, the division between subtle and manifest is subject to various theoretical and methodological limitations. The unidimensionality of the construct was confirmed by means of a parallel analysis. Results showed that just the first factor in the real data set (5.39, 0.97, …) had an eigenvalue larger than the one from the simulated data sets (1.16, 1.11, …). Hence, only one component was extracted. An exploratory factor analysis with Maximum Likelihood extraction was then computed, using the "EFAtools" package in R. Fit indices were acceptable: $\chi2$ (35) = 211.41, *RMSEA* = .08, *CFI* = .97. A general prejudice index was then computed. Sample items are: "immigrants have jobs that the Italian should have" and "most immigrants living here who receive support from welfare could get along without it if they tried."

Political affiliation. Participants indicated their ideological affiliation (from 1 = *far Left* to 10 = *far Right*).

Results

In order to compare pre- and during-pandemic variables, an ANOVA was computed. Although it should be considered that the participants were not the same in the two waves, the results (See Table 1) showed that concerns over COVID-19 were higher during-pandemic. Moreover, as concerns morality, all the dimensions were higher except for fairness. Prejudice was significantly higher as well, while political affiliation was not significantly different. A sensitivity power analysis using G*Power (Faul et al., 2007) indicated that the sample size had 80% power to detect a small effect size of F = 0.11, with α = 0.05.

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Bivariate correlations (see Table 1) showed that both pre- and during-pandemic concerns over COVID-19 were positively correlated to ingroup, authority, and purity moral

foundations, to prejudice and political affiliation. Moreover, during-pandemic they were positively correlated to harm and fairness as well. A sensitivity power analysis indicated that both pre- and during-pandemic samples had 80% power with α = 0.05 to detect $r > |0.14|$ and $r > |0.18|$, respectively. Comparing correlation coefficients pre- and during-pandemic, via R pack cocor (Diedenhofen & Musch, 2015), only COVID-19 with fairness (z = -2.01, p = .04) was significantly different.

Next, the effects of COVID-19 on prejudice and the mediation effects of moral foundations on this relationship was investigated, both pre- and during-pandemic. The analysis was carried out using the PROCESS procedure for SPSS (Hayes, 2013). The mediation procedure was based on 10,000 bootstrap samples. Statistical power was estimated thorough Monte Carlo power analysis for indirect effect tool (Schoemann et al., 2017). Sobel test was used to assess the significance of the mediation (Preacher & Hayes, 2004). Results (see Table 2) showed that pre-pandemic the total effect of COVID-19 on prejudice (β = .15, p = .002) was significantly mediated by ingroup (sobel test z = 2.56, statistical power = 0.86), authority (z = 3.57, statistical power = 1.00), and purity (z = 1.95, statistical power = 0.93), leaving a non-significant direct effect of β = .04, p = .40 (see Figure 1). Almost the same results were found during-pandemic: the total effect of COVID-19 on prejudice (β = .16, p = .01) was significantly mediated by fairness (z = -2.49, statistical power = 0.89), ingroup (z = 2.15, statistical power = 0.95) and authority (z = 2.78, statistical power = 0.99), leaving a non-significant direct effect of β = .08, p = .15 (see Figure 2).

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Discussion

The results confirm the hypotheses. Predictably, concerns about the COVID-19 emergency dramatically increased at the outbreak of the pandemic. Although the respondents were not the same, and therefore the result should be taken with caution, this increase follows a trend observed on a daily and media level. Indeed, there was an escalation in the media news on the pandemic to the point that news focused only about that (Vicentini & Galanti, 2021). It is worthwhile noting that there was also a significant increase in the other variables, except for fairness and political affiliation. While we cannot be sure that these differences can be put down to the pandemic situation, it is interesting to observe that it is primarily the moral foundations related to the ingroup and authority that increased significantly. Although this is just a conjecture, it could be assumed that the pandemic has led to a greater emphasis on those foundations that bind people to a certain loyalty to their group and to authority. Moreover, as Bianco and colleagues (2021) have pointed out, these foundations are related to an emphasis on obedience to authority and norms, all characteristics that were demanded of people during the pandemic. This result is in line with other studies (e.g. Henderson & Schnall, 2021).

The main interest of the research, however, was to see how concerns over COVID-19 could be connected with negative attitudes toward immigrants and the possible mediation of moral foundations on this relationship. First, both before and during the pandemic, the greater concerns over COVID-19 were, the higher the biased attitudes were. Although the correlations are not high in either case, at a time of great internal solidarity and national unity, it is relevant how feelings of hostility toward some minorities emerge, almost as if they were blamed for the emergency they were experiencing (see Roberto et al., 2020 for a similar effect as concerns Chinese people). This illusory (actually non-existent) relation between contagion and immigration has often been espoused by political leaders and the media (Hartman et al., 2021) in order to strengthen the majority's solidarity and to convey feelings

of anxiety and fear against other social groups rather than against the uncertainties and the at times ineffective policies of the institutions.

Second, concerns over COVID-19 are positively related to binding moral foundations both before and during the pandemic. In line with other studies (Bianco et al., 2021; Hadarics & Kende, 2018), being concerned about an external threat is related to a morality more focused on community ethics, where far greater emphasis is placed on virtues and institutions that bind people to mutual roles, duties, and obligations (Graham et al., 2011). It noteworthy that in the data collected during the pandemic in Italy, concerns also correlated with individual foundations. Concerns over the coronavirus also seem to be connected with a morality related to the individual, in terms of justice and care, which might be expected since the latter theme especially appeared constantly in everyday discourse and the media (Emiliani et al., 2020).

Concerning the mediating model, both before and during the pandemic the relationship between threat and prejudice is explained by the application of binding moral foundations instead of individualizing ones (with the exception of a negative indirect effect of fairness during the pandemic), as a confirmation of previous studies (e.g. Hadarics & Kende, 2018; Tamborini et al., 2017). The presence of already negatively labelled groups has probably been considered, in a moment of emergency and difficulty, as constituting a threat to the unity of the ingroup. Or, as has already happened in times of economic crisis (such as the crisis caused by the pandemic) an exclusive and restricted solidarity has been applied, so that the nationalist priority (with slogans such as "Italians first") has prevailed over a sense of common and inclusive support. In view of the global economic crisis that is following what is hopefully the end of the pandemic, the risk of an exacerbation of intergroup conflicts, fueled by parties and leaders already previously xenophobic and nationalist, could put at risk the fate of democracy in Italy and Europe (Faulkner et al., 2004; Hartman et al., 2021). As

Moghaddam (2016) has pointed out, the democratic level of a society is rooted on the defense of minority rights. Where this principle is endangered, there is a risk of an authoritarian drift.

The present research has some limitations. As previously mentioned, the biggest limit is that of not being able to have pre-during pandemic data on the same participants. A longitudinal comparison would certainly have added further support to the results found. Secondly, because the data are correlational, causality can only be inferred. However, the proposed model follows some previous studies that have already shown how moral foundations can be considered as mediators of the relationship between perceived threat and attitudes toward outgroups. That said, the strength of this research is having confirmed those studies within a real and, at least for the Italian context of the last century, unique and unexpected emergency situation. Indeed, COVID-19 was the most exceptional recent historical event for its potential in altering our societies (Roberto et al., 2020). For at least the two months of the lockdown phase, but even during the following summer, the daily conversations among friends as well as on TV and among experts, concerned the fear of the disease, but also our lack of readiness, as well as the doubts about the future of the country and the world. Certainly, although the data presented are tendential, the fact that fear of an external factor like contagion will lead to a higher level of nationalism and ethnocentrism can undermine the levels of tolerance and democracy achieved with a great deal of effort (we should bear in mind that Italy was a dictatorship for twenty years until the Second World War). This makes us reflect on how important it is to try to break down those tendencies to seek scapegoats in other social groups to escape our fears and our sense of insecurity. Moreover, as the perception of threat can affect the salience of group-centric moral intuitions and, in turn, decrease solidarity toward outgroup members (Tamborini et al., 2017), it may be relevant to discuss the relevance and priority of individualizing over morally binding foundations. Although abiding by specific rules of hygiene and distancing imposed by the

Italian government has favored the gradual emergence from the pandemic and has received

worldwide praise, protecting the community from individual egoism and defeating

environmental and virus threats should also be achieved by attaching importance to those

rules consisting in not harming other people and respecting everyone's rights (i.e.,

individualizing moral foundations; Hadarics & Kende, 2018).

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Table 1.

ANOVA Pre- and During-Pandemic and Pearson Correlation Coefficients among all the Variables.

Measures	ANOVA			Correlations							
	M (SD) pre	*M (SD) during*	*F*	1	2	3	4	5	6	7	8
1. COVID-19	3.32 (1.20)	5.03 (1.09)	335.38***	*.84/.79*	.20**	.22***	.22***	.27***	.27***	.16**	.20**
2. MFQ-Harm	4.66 (0.84)	4.81 (0.77)	5.16*	.10	*.61/.57*	.49***	.30***	.17**	.27***	-.09	-.08
3. MFQ-Fairness	5.07 (0.70)	5.14 (0.62)	1.77	.06	.45***	*.61/.56*	.25***	.10	.27***	-.18**	-.17**
4. MFQ-Ingroup	3.59 (0.99)	4.08 (0.96)	37.53***	.15**	.30***	.25***	*.66/.62*	.58***	.51***	.34***	.18**
5. MFQ-Authority	3.55 (0.95)	3.79 (0.94)	10.00**	.26***	.16**	.18***	.56***	*.62/.66*	.56***	.44***	.39***
6. MFQ-Purity	3.94 (1.01)	4.12 (0.95)	4.67*	.17***	.37***	.34***	.50***	.56***	*.66/.66*	.30***	.27***
7. Prejudice	2.43 (1.03)	2.67 (1.01)	8.15**	.15**	-.01	-.14**	.40***	.45***	.32***	*.85/.83*	.51***
8. Pol. affiliation	4.54 (1.85)	4.76 (1.93)	2.00	.16***	-.04	-.07	.29***	.43***	.26***	.51***	–

Note. MFQ = Moral Foundations Questionnaire. Pol. = Political. All the variables extended from 1 to 7 except for political affiliation (from 1 to 10). Values below the diagonal are pre-pandemic. Values above the diagonal are during-pandemic. Cronbach's α in italics on the diagonal.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 2.

Regression Coefficients of the Mediation Models Pre- and During-Pandemic.

Path	pre-pandemic				during-pandemic			
	β	*p*	*LLCI*	*ULCI*	β	*p*	*LLCI*	*ULCI*
Direct effects								
COVID-19 → Harm	.10	.04	.01	.20	.19	.002	.07	.32
COVID-19 → Fairness	.06	.26	-.04	.16	.22	< .001	.09	.34
COVID-19 → Ingroup	.15	.002	.06	.25	.22	< .001	.10	.35
COVID-19 → Authority	.26	< .001	.17	.36	.27	< .001	.15	.39
COVID-19 → Purity	.17	< .001	.07	.27	.27	< .001	.15	.39
Harm → Prejudice	-.06	.23	-.15	.04	-.12	.05	-.25	.00
Fairness → Prejudice	-.27	< .001	-.37	-.18	-.24	< .001	-.37	-.11
Ingroup → Prejudice	.26	< .001	.16	.37	.20	.006	.06	.34
Authority → Prejudice	.27	< .001	.16	.38	.28	< .001	.13	.42
Purity → Prejudice	.13	.01	.03	.25	.12	.10	-.02	.25
COVID-19 → Prejudice	.04	.40	-.05	.12	.08	.15	-.03	.20
Indirect effects								
COVID-19 → Harm → Prejudice	-.01	.33	-.02	.00	-.02	.11	-.07	.00
COVID-19 → Fairness → Prejudice	-.02	.27	-.05	.01	-.05	.01	-.10	-.02
COVID-19 → Ingroup → Prejudice	.04	.01	.01	.07	.04	.03	.02	.09
COVID-19 → Authority → Prejudice	.07	.00	.04	.12	.07	.005	.04	.13
COVID-19 → Purity → Prejudice	.02	.05	.01	.06	.03	.13	.00	.08
Indirect total	.11	–	.06	.17	.07	–	.00	.15
Total effect	.15	.002	.05	.25	.16	.01	.03	.28

Note. LLCI = Lower Level of Confidence Interval. ULCI = Upper Level of Confidence Interval.

Figure Caption

Figure 1. Mediation model of COVID-19 on prejudice, mediated by moral foundations (pre-pandemic). *Note.* * $p < .05$. ** $p < .01$. *** $p < .001$.

Figure 2. Mediation model of COVID-19 on prejudice, mediated by moral foundations (during-pandemic). *Note.* * $p < .05$. ** $p < .01$. *** $p <$

.001.