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The Role of the COVID-19 Impersonal Threat Strengthening the Associations of Right-wing Attitudes, Nationalism and Anti-immigrant Sentiments

--Manuscript Draft--

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Abstract:	Background: Literature showed that the link between right-wing attitudes and ethnocentric attitudes gets stronger under existential threats, but the role exerted by an impersonal threat – as COVID-19 – on right-wing attitudes is still unclear. Aim: This study aimed to highlight the role of anxiety exerted by the impersonal COVID-19 threat on the relationship between right-wing attitudes and ethnocentric attitudes, as nationalism and anti-immigrants' sentiments. Methods: As part of an international project to evaluate the impact of COVID-19, this study administered an online survey to a representative sample (n 1038). Results and Discussions: The anxiety generated by an impersonal threat as COVID-19 – thus not exerted by any outgroup – can moderate the relationship among personal Right-Wing Authoritarianism, social dominance orientation, and ethnocentric attitudes. Conclusion: This is the first study demonstrating that existential threat is effective also when exerted by an impersonal agent (as COVID-19) rather than by an outgroup. Second, these findings disclose useful implications for preventive psychological interventions and for social policy makers.
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Author Comments:	Dear Team of the Current Psychology Journal, please note that I was not able to re-order the attached files in the submission process. I would like them to be listed as follows: 1) authors' answers to the reviewers 2) title page 3) revised blinded manuscript 4) supplementary materials. It is not the first time I have this problem. Let me know if I can help anyway, Thank you very much for your comprehension. Best regards, Anna Panzeri
Response to Reviewers:	*** please see the attached file that is formatted better *** Response to the Editor and Reviewer's comments about the article titled "The Role of the COVID-19 Impersonal Threat Strengthening the Associations of Right-wing Attitudes, Nationalism and Anti-immigrant Sentiments" Authors wish to thank both the Editor, for considering our manuscript for publication and for sending it to peer-review, and the Reviewer for the insightful feedback provided and the time spent reviewing the manuscript. The valuable comments were useful to improve the manuscript. Detailed responses to all the major and minor points (listed in italics) raised by the Reviewer are listed below. Reviewer #1: Thanks for getting the chance to read and review the manuscript titled "The Role of the COVID-19 Impersonal Threat Strengthening the Associations of Rightwing Attitudes, Nationalism and Anti-immigrant Sentiments". The manuscript deals with the moderating effect of an impersonal threat on the relationships between right-wing attitudes and prejudicial attitudes. This is indeed a relevant topic in the current Italian context. In addition, the submitted manuscript is an interesting read and fits well into the scope of Current Psychology. However, there are a few points that need more attention to enhance the work. I will list those points below and hope they will help you to revise your manuscript. Thank you for the overall positive evaluation of the paper. Answers to all the specific points raised are reported below 1. Please correct all typos, language problems, and typesetting issues. Please follow the APA guidelines in your manuscript: (a) avoid paragraphs with less than three sentences, (b) use statistical notation as recommended, and (c) follow citation requirements. I suggest the authors to have the manuscript checked by a professional proofreader. Here are a few examples (not necessarily all). * Page 2, line 25: "an strong"; * Page 3, line 12: the citation "Adorno et al., 2019" is not in alphabetical order within parentheses; * Page 4, line 58: citations are not in alphabetical order; * Page 4, line 1: character size is different from the rest of the manuscript; * Page 4, line 43: "a pandemic threat" may have a misleading meaning in this context, if you refer to an existential threat caused by the pandemic. * Page 6, line 22: "Educational" * Page 11, line 13: "(β =.39 p = .099)" and similar errors in the following lines and

pages.

Authors wish to thank the Reviewer for such a thorough check of language and style points. The manuscript was checked and corrected to meet all the above-mentioned requirements.

2. Please check and correct the wrong correspondence between a reference and its doi link. Here is an example of inconsistency:
Page 18, line 30: R Core Team. (2018). R: A language and environment for statistical computing. In R Foundation for Statistical Computing.
https://doi.org/10.1017/CBO9781107415324.004
The doi link refers to a different work.

Thanks, the doi was fixed and the references were re-checked.

3. Theoretical background
I feel the lack of an introduction that put your study in a defined context and underline why your research questions are important. In the same way, a better introduction may specify an over-arching theory that places the constructs of interest in a common phenomenological space. I had the impression that there is a need to provide a rational for the variables selected and investigated in the current study.

Thanks for this comment which allowed us to better structure the section. Going through the introduction, the parts of the referring to these important points were highlighted by rephrasing them or by adding new parts.
About the over-arching theory, it is the Duckitt's dual-process motivational model (Duckitt, 2001, 2009). To make this clear the readers, in the introduction this part about the theory was moved above to gain saliency and the constructs are presented later. Also, explicit referrals to this theory were added throughout the introduction as well as for variables selection. For instance, the introduction was modified as follows:
Page 2, line 6: “Referring to the Duckitt's dual-process motivational model (Duckitt, 2001, 2009) as an overarching theory, […]”.

Page 4, line 11: “To this aim, the abovementioned Duckitt’s dual process model is considered as an overarching framework both for variable selection and for the interpretation of the results.”
Also, this part was added to underline why these research questions are important:
Page 4, line 23: “This research question is important because some contextual factors, independently from socio-psychological trait predispositions, may lead people to systematically shift toward right-wing attitudes. Importantly, to understand these phenomenological dynamics may represent a starting point to inform and realize interventions aimed to favor inclusive attitudes towards the outgroup to improve the social good (Bochicchio et al., 2021).”

About variable selection:
Page 5, line 1: “The variables were chosen in view of the Duckitt’s dual process as a theoretical framework, namely, RWA and SDO were considered as independent variables, and nationalism and anti-immigrant sentiments were the dependent variables. Also, COVID-19 anxiety was chosen to represent the existential threat..”

4. Methods and Materials
4.1. There are not indices of internal consistency of measures.

Thanks, the indices of internal consistency (Cronbach’s alpha) were calculated and added for each measure. All values are above the desired threshold and can be considered good.

4.2. I think that further information about the use and choice of statistical analyses would be useful.

Thanks for the suggestion. The statistical analysis section at page 8 was modified and extended by adding new parts to better outline the rationale behind. Please find it below for your convenience:
“First, the relationships among demographics, socio-political variables, and psychological constructs were explored through Spearman’s correlation coefficients, the associated p-values were adjusted controlling for the false discovery rate (Benjamini & Hochberg, 1995).
Second, the ordinary least squares linear regression was used to test the role of perceived COVID-19 anxiety threat (as a moderator) on the association between authoritarianism (i.e., RWA, independent variable) and political attitudes (dependent variables). So, three regression models were fitted, each with a different dependent variable: nationalism; anti-immigrant sentiments about the Economy; and anti-immigrant sentiments about Culture. The predictor variables were always RWA, SDO, COVID-19 anxiety, the interactions of COVID-19 anxiety with RWA and SDO. We will refer to these as the ‘unadjusted’ models as we did not include socio-political covariates. Notice that all variables used in the regression models were standardized through a rescaling from 0 to 1.
After, to control for the effect of the sociodemographic and political orientation covariates (e.g., age, gender, region, conservativism, conspiracy, political views), we estimated the same models by adding such covariates, we will call these the ‘adjusted’ models.
To test the region of the significance of the interaction, we used the Johnson-Neyman interval analysis (Johnson, & Neyman, 1936) to test for which values of the moderator the relationship between predictors and dependent variables was statistically significant.
The alpha level was set at .05, only results with an associated p-value below this threshold are commented as statistically significant – also other results not statistically significant results are described. All the p-values were adjusted for the false discovery rate (Benjamini & Hochberg, 1995), representing the expected proportion of false discoveries among the rejected hypotheses. The R Core Team Software was used for all the statistical analyses (R Core Team, 2018). The ggplot2 package was used for the graphs (Wickham, 2016).”

5. Results
5.1. Table 1 does not explain the meaning or utility of colors. Furthermore, in the Note of Table 1 you say that "* = p < .05" but there is not a "*" in the Table.

Thanks for the comment. In the note of Table 1 (at the bottom of page 9) was added a comment about the colors (red and blue) meaning and the stars about statistical significance were removed. Indeed, now the upper triangle of the table contains the exact p-values corrected with the Benjamini-Hochberg method. For readers convenience, the not significant values are reported in light-grey.

5.2. It is unclear if you centred the variables before the moderation analysis, please specify.
Thanks for the opportunity to make clearer a point that might not have been evident. A sentence was added also in the results section to underline the variables’ standardization process (rescaling from 0 to 1) – previously specified just in the methods section.
Page 6 line 15, methods, statistical analyses: “All variables used in the regression models were standardized through a rescaling from 0 to 1.”
Page 10 line 2, results: “All variables in the regression models were standardized with a rescaling from 0 to 1.”

5.3. You say that Table 2 reports regression results without covariates, but in that table you do report also the "adjusted" estimates (after the introduction of the sociodemographic and political orientation), which are the results with covariates. In fact, it seems to me that Table 2 and Table 3 are identical for the first eight rows of Table 3. If so, I suggest to remove Table 2.

Thanks for raising this point. The comment about the covariates is correct and, as suggested, the Table 2 was removed. Now the one called table 2 is the one previously called table 3 – the complete one.

5.4. Another unclear point is about the difference between unadjusted and adjusted estimates regarding the choice of control variables: if the difference between unadjusted and adjusted estimates is the covariances of "sociodemographic and political orientation", then why the Italian region covariates in the "unadjusted model"? Is not the region a sociodemographic information?

Thanks for the comment, despite the region is a socio-demographic information it was initially considered in the unadjusted models in order to account for any potential regional difference as a confounder. However, as suggested, the unadjusted models were re-estimated without the region. Their results – not showing relevant differences from the previous models with the region – were updated accordingly both in Table 2 and in all the sections of the manuscript (statistical analysis and results).

5.5. Be consistent with Notes of Tables: in Table 1 "* = p < .05", while in Table 2 "* p < .05". In the note of Table 2 "L/M-ed: Low/Moderate education." but I cannot see "L/M-ed" in the Table.

Thanks for noticing. About table 1 (page 9) reporting the correlations' results, it was changed by putting the exact p-values (with the BH correction) in the upper triangle – so any reference to * was removed.
About table 2, the inconsistencies about the 'Low/Mod-edu' variables, respectively corresponding to Low education and Moderate education, were fixed.

5.6. It is unclear why you choose to present in figure only the "unadjusted" moderation effects, while the "adjusted" would be more valid considering also the covariances of control variables.

Thanks, as suggested, the figure(s) (page 12) were changed to present the effects in the adjusted models with the covariates.

5.7. Figure 1 needs a more informative Note. It is not clear which regression line refers to a low or high level of the moderator. Furthermore, the presence of the name of "Covid anxiety" on the abscissa axis (which is traditionally used for the independent variable) and the presence of the name of "RWO" on the ordinate axis (which is traditionally used for the dependent variable) may be misleading without an explanation, since a reader could simply see that figure as the relationship between Covid anxiety and RWA.

Thanks for the comment. Accordingly, Figure 1 (page 12) has been replaced following these suggestions. Now figure 1 clearly shows the results of the adjusted regressions models (with covariates) in a conventional way. In each graph, on the x axis there is the independent variable that has an effect on the dependent variable on the y axis, such effect is moderated by the different levels of COVID-19 anxiety. The conditional

	effect of the moderator for its different values are represented with different colors in the line and associated confidence intervals. 5.8. I think you should choose one alpha level for all the result to gain clarity for the interpretation of what is significant and what is not. Furthermore, given the size of your sample, I would avoid an alpha level of .10. Thanks for the comment. As suggested, the alpha level of .10 was removed. In the statistical analysis section only the alpha level of .05 was chosen. Thus, only results with a p-value below .05 are commented as significant. With the aim to describe the results, some results with theoretical importance and with a p-value below .10 were commented and they are explicitly described as not statistically significant. In addition, as suggested in another comment, to explore for which values these interaction effects are significant, the Johnson-Neyman interval analysis was added. To address the point raised, in the statical analysis section, the sentence about the p-value was modified as follows: page 8., line 23: “The alpha level was set at .05, only results with an associated p-value below this threshold are commented as statistically significant – also other results not statistically significant results are described.” 5.9. In the Results section, I cannot find comments about the main effects of RWA, SDO, and Covid anxiety on the three outcome. In particular, significant main effects of Covid anxiety emerge from Table 2-3. I think you should comment this result, also because we can see in Table 1 that the correlation between Covid anxiety and Nationalism was not significant, while the main effect becomes significant in the regression model. Thanks for this comment. In the revised version of the manuscript the results of the correlations and all the regression models were commented in detail in the results’ section (please see page 9, lines 5-13) – as well as the newly added Johnson-Neyman analysis (at the bottom of page 12). Subsequently, the most important results are also discussed in the discussion section. 6. Discussion: the discussion is clear and highlights the crucial results and their consequences. Thanks for appreciating this section. As aforementioned, some slightly changes were made to match the results because of the revisions made. 6.1. In page 12, line 46-48 you say that "only when a perceived threat was high, SDO significantly predicted high levels of nationalism". This interpretation should be supported by the results of a simple slope analysis. In your Results section it is not presented the effect of SDO on Nationalism when Covid anxiety is low, therefore the reader cannot see if that conditional effect is not significant. The significant interaction effect says only that that effect is lower (not necessarily not significant) than the conditional effect when Covid anxiety is high. I suggest to present a simple slope analysis to support this interpretation or avoid the use of "only" in the discussion. Thanks for the comment. To this extent, the simple slope analysis with the Johnson-Neyman interval of significance was added. The sections of statistical analysis, results and discussions were modified accordingly. In particular, as suggested, in the results section was added a part about the effect of SDO on Nationalism when COVID-19 anxiety is low (please see the bottom of page 12). Also the Johnson-Neyman interval analysis was commented. These points were then integrated in the discussion section.

The Role of the COVID-19 Impersonal Threat Strengthening the Associations of Right-wing Attitudes, Nationalism and Anti-immigrant Sentiments

Abstract

Background: Literature showed that the link between right-wing attitudes and ethnocentric attitudes gets stronger under existential threats, but the role exerted by an impersonal threat – as COVID-19 – on right-wing attitudes is still unclear.

Aim: This study aimed to highlight the role of anxiety exerted by the impersonal COVID-19 threat on the relationship between right-wing attitudes and ethnocentric attitudes, as nationalism and anti-immigrants' sentiments.

Methods: As part of an international project to evaluate the impact of COVID-19, this study administered an online survey to a representative sample (n 1038).

Results and Discussions: The anxiety generated by an impersonal threat as COVID-19 – thus not exerted by any outgroup – can moderate the relationship among personal Right-Wing Authoritarianism, social dominance orientation, and ethnocentric attitudes.

Conclusion: This is the first study demonstrating that existential threat is effective also when exerted by an impersonal agent (as COVID-19) rather than by an outgroup. Second, these findings disclose useful implications for preventive psychological interventions and for social policy makers.

Keywords: Existential threat, Anxiety, Right-Wing Authoritarianism, Social Dominance Orientation, Health psychology

1. Introduction

Several studies in the scientific literature highlighted the link between the perception of an existential threat and conservative attitudes such as Right-Wing Authoritarianism (RWA) and Social Dominance Orientation (SDO; i.e., "*conservative shift*") (Sibley & Duckitt, 2008; Duckitt, 2013; Jost et al., 2017; Perry et al., 2013~~; Sibley & Duckitt, 2008~~).

Referr~~Accord~~ing to the Duckitt's dual-process motivational model (Duckitt, 2001, 2009) as an overarching theory, certain personality traits and the exposure to certain environmental contexts can affect a person's view of the world and strengthen RWA and SDO. ~~Indeed, RWA and SDO, rooted in two different worldviews, predict different attitudes and behaviors towards the outgroup.~~

According to Kossowska, RWA is an *"ideological response intended to reduce high levels of perceived threat and anxiety*" (2011, p. 247). RWA is an ideological belief system (Jedinger & Eisentraut, 2020) characterized by uncritical and unconditional submission to the authorities of one's group, aggression towards individuals or groups that violate the values and norms of the in-group, as well as by conventionalism and unconditional adherence to values and norms of own group (Altemeyer, 1981; Kossowska et al., 2011).

Differently, SDO goes beyond, it is characterized by a~~n~~ strong opposition to equality between social groups (i.e., anti-egalitarianism) and support for dominance by high-status groups towards low-status groups (Dominance; Ho et al., 2015).

Moreover, RWA and SDO, rooted in two different worldviews, predict different attitudes and behaviors towards the outgroup.

~~According to Duckitt's dual-process motivational model (Duckitt, 2001, 2009), certain personality traits and the exposure to certain environmental contexts can affect a person's view of the world and strengthen RWA and SDO. Indeed, RWA and SDO, rooted in two different worldviews, predict different attitudes and behaviors towards the outgroup.~~

The perception and belief of the world as a dangerous threat leads to RWA, and high levels of RWA predict high levels of prejudice towards dangerous social groups that threaten the health and survival of the in-group. Noteworthy, the level of RWA predicts less favorable attitudes towards the out-group only when this is perceived as an economic or cultural threat (Duckitt & Sibley, 2010).

Similarly, the view of the world as a competitive jungle leads to SDO (Perry et al., 2013; Sibley & Duckitt, 2008), and high levels of SDO are associated with negative attitudes towards out-groups that undermine the hierarchical order of social groups. Importantly, SDO predicts negative attitudes regardless of the perception of threat (Duckitt & Sibley, 2010).

The levels of RWA and SDO are considered rather stable over time, but they can vary in relation to certain situational factors: the perception of threat influences RWA, and competition between groups influences SDO (Duckitt, 2001, 2009; Duckitt et al., 2010; Duckitt & Sibley, 2009).

Scientific ~~L~~literature highlighted a complex relation among perceived threats and authoritarianism, ethnocentrism, and prejudice (Adorno et al., 2019; Altemeyer, 1998; Bizumic & Duckitt, 2012; Duckitt, 2020; Osborne et al., 2017). Importantly,

~~First,~~ different types of threats may influence authoritarianism (Butler, 2013) and influence RWA levels (Duckitt & Fisher, 2003; Sales & Friend, 1973).

Regarding the characteristics of threat, the threats towards the in-group are those able to strongly predict higher levels of authoritarianism (Feldman, 2013; Shaffer & Duckitt, 2013).

~~-~~Moreover, the existential threat has a greater impact on right-wing attitudes rather than threats related to economic resources (Merolla & Zechmeister, 2009). According to some studies, a perceived existential threat strengthens (i.e., *moderates*) the association between RWA and prejudicial attitudes towards the out-group (Caricati et al., 2017; Echebarria-Echabe & Fernández-Guede, 2006; Mancini et al., 2020; Mirisola et al., 2014).

Interestingly, the threat versus the in-group can be both realistic (i.e., a threat to physical health, material and/or economic resources) or symbolic (i.e., a threat to moral beliefs or in-group values) (Jedinger & Eisentraut, 2020; Stephan et al., 2009).

In recent years, in Italy several studies have been conducted ~~in Italy~~ on the role of RWA on inter-group attitudes (Boin et al., 2020; Caricati et al., 2017; Chirumbolo et al., 2016; Manganelli Rattazzi et al., 2007; Roccato et al., 2021), showing how people with high levels of RWA are more likely to believe that immigrants represent a threat to their in-group (Mancini et al., 2020) and have less positive attitudes towards out-group members (Mirisola et al., 2014; Passini, 2017).

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Recently, the pandemic had a considerable negative impact for ~~the~~ individual and public health, as well as on~~for~~ the stability of the economic system and social order (Cerami et al., 2020; ~~Ferrario, Panzeri, Cerutti, & Sacco, 2021;~~ Mignemi et al., 2022; Panzeri & Rossi Ferrario, 2020; Panzeri, Rossi Ferrario, Cerutti, 2021; Roccato et al., 2021; Rossi et al., 2021; Rossi Ferrario, Panzeri, Cerutti, & Sacco, 2021~~; Rossi Ferrario et al., 2021~~).

Considering the abovementioned reasons, the unexpected COVID-19 pandemic represents a very serious and persistent existential threat, with an important impact on intergroup dynamics, attitudes, and behaviors.

Notably, the pandemic is a generic impersonal threat not exerted by any out-group (Hartman et al., 2021; Kossowska et al., 2011), it represents an unprecedented scenario to study the psychological effects of an impersonal existential threat. Indeed, to date, literature has highlighted the association between the existential threat exerted by a group, political ideology (i.e., RWA and SDO), and intergroup attitudes (i.e., ingroup favoritism and outgroup derogation; Duckitt, 2020; Feldman, 2003), but little is known about a generic impersonal threat not referable to any specific social group (i.e., COVID-19).

To this aim, the abovementioned Duckitt's dual process model is considered as an overarching framework both for variable selection and for the interpretation of the results.

Few studies from different countries (e.g., UK, Ireland, Canada, and Japan) suggested how the current pandemic may have a negative effect on attitudes toward~~s~~ immigrants (Esses & Hamilton, 2021; Hartman et al., 2020; Newbold, 2020; Yamagata et al., 2020~~; Hartman et al., 2020~~). However, to date, no studies have been carried out in Italy on the role of RWA and the pandemic threat in predicting attitudes toward~~s~~ immigrants. Literature still lacks clear evidence explaining how the perception of the health threat linked to COVID-19 plays a role in determining high levels of prejudice towards the out-group in Italy.

~~In view of~~Given this background, the present study explores for the first time the role of an existential threat caused by the pandemic~~a pandemic threat~~ in moderating the relationship between individual-level right-wing (RWA and SDO) and prejudicial attitudes towards immigrants in the Italian context.

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This research question is important because some contextual factors, independently from socio-psychological trait predispositions, may lead people to systematically shift toward right-wing attitudes. Importantly, understanding these phenomenological dynamics may represent a starting point to inform and realize interventions aimed to favor inclusive attitudes towards the outgroup to improve the social good (Bochicchio et al., 2021).

The variables were chosen in view of the Duckitt's dual process model as a theoretical framework, namely, RWA and SDO were considered as independent variables, and nationalism and anti-immigrant sentiments were the dependent variables. Also, COVID-19 anxiety was chosen to represent the existential threat.

It is possible to hypothesize that high levels of a perceived impersonal threat (not attributable to a social group) as COVID-19 may interact with RWA in predicting stronger ethnocentric attitudes (i.e., nationalism and anti-immigrant sentiments) in the Italian general population.

2. Methods and Materials

This study is part of the international 'COVID-19 Psychological Research Consortium' (C19PRC), a project launched in March 2020 in the United Kingdom (UK) (McBride et al., 2020a) to understand the psychosocial impact of COVID-19 across several countries (Shevlin et al., 2022). As part of an international consortium sharing the same aims, the survey of the Italian branch (https://osf.io/qy65b/) of the Consortium ~~survey~~ was in line with the surveys from other countries (McBride et al., 2020b).

2.1 Study Plan

The present study relied on an online survey administered in four Italian regions – Campania, Lazio, Lombardia, and Veneto. The inclusion criteria were living in one of the 4 selected regions and being at least 18 years old. A stratified quota sampling was used to guarantee that the sample was representative of the Italian population (gender, age, household income, and region). All participants provided informed consent before completing the survey. Ethical approval was provided by the Ethical Committee for Psychological Research of the University of *[blinded for review]* (protocol number~~.~~ 3818).

Data were collected from July 13th to July 28th, 2020, after the contagion peak (end of March) and after the end of the strict national lockdown (May 18th). At that time, in Italy, a total of 243,230 cases of COVID-19 had been registered, with almost 35,000 deaths. Lombardia and Veneto, in the north of the country, were the regions with the highest number of contagions while in the center (e.g., Lazio) and south (e.g., Campania) the outbreak was more contained.

2.2 Participants

Data from 1038 adult participants were recruited for this study via Qualtrics from an online research panel. The median time of completion of the survey was 41 min.

The mean age of the total sample was 49.94 years (median = 51, SD = 16.14, range = 18–87), and 51.15% were female (n = 531). Participants were enrolled from the 4 selected regions based on their population size: Campania (n = 227), Lazio (n = 234), Lombardia (n = 391), Veneto (n = 186). Most of them were Italian (96.61%, n = 1003) and with Caucasian ethnicity (74.66%, n = 775). Nearly half of the sample had completed at least high school (48.74%, n = 506) with a further 42.97% having a higher level of education. Less than half were fully employed (44.41%, n = 461), with 24.18% retired (n = 251).

Only 14 participants reported that they had tested positive for COVID-19 (1.35%), and 10.50% said they were mourning a loss due to confirmed cases of COVID-19. Further information about demographics and variables is available in the supplementary materials (S1, Table S1-S20).

2.3 Materials

The measures relevant to the present analysis are listed and described below. The full list is available as supplementary material. The whole survey was in Italian.

Sociodemographic variables: we collected the same information as the original C19PRC-UK study: gender, age, educational level, income, and previous health issues. We integrated these with further information (region, losses due to COVID-19, perceived risk to contract COVID-19).

E*ducational* level was rescaled and dummy coded in low/moderate levels through the median-split procedure. Gross household *income* was kept continuous and rescaled from 0 to 1. The exact wording

for these and other psychological measures and the complete Italian survey (Bruno et al., 2020), as well as descriptive statistics, are available in the Supplemental Appendix.

Nationalism: in line with the original study, Italian nationalism was assessed by two items adapted from Davidov (2011) on a 5-point Likert scale: (1) *"The world would be a better place if people from other countries were more like the Italian"* and (2) *"Generally speaking, Italy is a better country than most other countries"*. The items were combined and rescaled from 0 to 1 (1 = higher nationalism). The standardized Cronbach's alpha was .76.

Anti-immigrant sentiment: two items from the British Social Attitudes Survey (2015) were translated to assess attitudes toward migrants on a 10-point scale: (1) "Would you say it is generally bad or good for Italian's economy that migrants come to Italy from other countries?" and (2) "Would you say that Italian's cultural life is generally undermined or enriched by migrants coming to live here from other countries?". The two items were reverse coded and rescaled from 0 to 1 (1 = higher anti-immigrant sentiment). The standardized Cronbach's alpha was .88.

RWA: The six-item Very Short Authoritarianism Scale (Bizumic & Duckitt, 2018) was used to assess participants' levels of RWA. Responses were collected on a 5-point Likert scale. These six items were combined and rescaled from 0 to 1 (1 = higher authoritarianism). The reliability was satisfactory with a value of .67.

SDO: The 8-item Social Dominance Orientation scale (Aiello et al., 2019; Ho et al., 2015) was used to assess participants' levels of social dominance. Responses were collected on a 5-point Likert scale. These eight items were combined and rescaled from 0 to 1 (1 = higher social dominance). The Cronbach's alpha was good with .75.

Political and ideological orientation: As in the original study, three 10-point scale questions were adapted from the 2014 to 2023 British Election Study (2017). The focus was on the self-description of (i) participants' political orientation (10 = right-wing), (ii) ideological orientation toward fiscal issues (e.g., taxes; 10 = very conservative) and (iii) ideological orientation toward social issues (e.g., abortion; 10 = very conservative). Each question was rescaled ranging from 0 to 1. The standardized Cronbach's Alpha was .78.

Conspiracy beliefs related to COVID-19: 5 visual analog scales (VAS) from 0 (= 'I do not believe it at all') to 100 (= 'I believe it totally') were used to measure the adherence of each participant to conspiracy beliefs related to COVID-19. An example of an item was *'The 5G networks are the real responsible for the current pandemic'*. The standardized Cronbach's alpha was acceptable with a value equal to .71.

COVID-19-related anxiety: was measured as a single item, 'How anxious are you about the coronavirus COVID-19 pandemic?' and rated on a continuous scale from 0 to 100. The item was rescaled from 0 to 1 (1 = higher COVID-19 related anxiety).

2.4 Statistical Analyses

First, the relationships among demographics, socio-political variables, and psychological constructs were explored through Spearman's correlations coefficients, the associated p-values were adjusted controlling for the false discovery rate (Benjamini & Hochberg, 1995) ~~explored the associations among all variables~~.

Second, the ordinary least squares linear regression was used to test the role of perceived COVID-19 anxiety threat (as a moderator) on the association between authoritarianism (i.e., RWA, independent variable) and political attitudes (dependent variables) ~~the ordinary least squares linear regression was used~~. So, ~~T~~three regression models were fitted, each with a different dependent variable: nationalism; anti-immigrant sentiments about the Economy; and anti-immigrant sentiments about Culture. The predictor variables were always RWA, SDO, COVID-19 anxiety, the interactions of COVID-19 anxiety with ~~also in interaction with~~ RWA and SDO ~~and region.~~. We will refer to these as the 'unadjusted' models as we did not include socio-political covariates. All variables used in the regression models were standardized through a rescaling from 0 to 1.

After, ~~Both "unadjusted" and "adjusted" estimates~~ to control~~ling~~ for the effect of the sociodemographic and political orientation covariates (e.g., age, gender, region, conservativism, conspiracy, political views), ~~we~~ we estimated the same models by adding such covariates, we will call these the 'adjusted' models. ~~were reported.~~

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To test the region of the significance of the interaction, we used the Johnson-Neyman interval analysis (Johnson, & Neyman, 1936) to test for which values of the moderator the relationship between predictors and dependent variables was statistically significant.

The alpha level was set at .05, only results with an associated p-value below this threshold are commented as statistically significant – also other results not statistically significant results are described~~9.5%~~ All the p-values were adjusted for the false discovery rate (Benjamini & Hochberg, 1995), representing the expected proportion of false discoveries among the rejected hypotheses. ~~, some results significant at the 90% level were still reported.~~ The R Core Team Software was used for all the statistical analyses (R Core Team, 2018). The *ggplot2* package was used for the graphs (Wickham, 2016).

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3. Results

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Table 1 shows the Spearman's *r* correlations among all variables, the ~~correlations~~ p-values are adjusted to control~~ling~~ for the false discovery rate (Benjamini & Hochberg, 1995). Right-wing political orientation, social and fiscal conservatism, authoritarianism, and social dominance were positively and significantly correlated with nationalism, as well as with anti-immigrant sentiment related to the internal economy and national culture. Interestingly, COVID-19 conspiracy beliefs showed a positive and significant correlation with conservative orientation and right-wing ideology. We can see that COVID-19 anxiety has very small and not statistically significant associations with Nationalism (r = .02, p = ,582), Economy (r = -.05, p = ,200), Culture (r = -.05, p = ,135), RWA (r = .03, ,476), and SDO (r = .02, p = ,667).

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Table 1.

Spearman's Correlations

	Nat	Economy	Culture	RWA	SDO	C19 Anx	Left-Right	S-cons	EF-cons	Consp	Age	Male	Low-edu	Mod-edu	Income
Nat	-	.001	<.001	<.001	<.001	.582	<.001	<.001	<.001	<.001	<.001	.106	.219	.510	.299
Economy	.11	-	<.001	<.001	<.001	.200	<.001	<.001	<.001	<.001	.463	.120	.058	.151	.007
Culture	.14	.78	-	<.001	<.001	.135	<.001	<.001	<.001	<.001	.151	.120	.075	.219	.280
RWA	.25	.33	.35	-	<.001	.476	<.001	<.001	<.001	<.001	<.001	.313	.002	.013	.552
SDO	.16	.19	.26	.26	-	.667	<.001	<.001	<.001	<.001	.030	.480	.227	.510	.227
C19 Anx	.02	-.05	-.05	.03	.02	-	.340	.465	.675	.002	<.001	<.001	.319	.938	.120
Left-Right	.15	.43	.50	.36	.36	-.03	-	<.001	<.001	<.001	.784	.938	.113	.029	.413
S-cons	.18	.26	.31	.39	.28	.03	.44	-	<.001	<.001	.005	.015	.011	.413	.363
E-cons	.12	.23	.28	.30	.30	.02	.45	.64	-	<.001	.757	.965	.071	.302	.907
Consp	.20	.17	.22	.20	.26	.10	.26	.27	.23	-	.784	.120	.063	.566	.024
Age	.15	.03	.05	.18	-.07	-.13	-.01	.09	-.01	.01	-	<.001	<.001	<.001	.966
Male	.06	-.06	.05	.04	-.03	-.20	0	.08	0	-.06	.19	-	.576	.829	<.001
Low-edu	.04	.07	.06	.10	.04	.04	.06	.09	.06	.07	.15	.02	-	<.001	<.001
Mod-edu	.02	.05	.04	.08	-.02	0	.08	.03	.04	.02	.13	-.01	-.34	-	<.001
Income	.04	-.09	-.04	.02	.04	-.06	-.03	-.03	0	-.08	0	.12	-.16	-.26	-

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~~*Note.*~~ The lower triangle contains the correlation index. The blue color indicates positive correlations and the red color indicates negative correlations. More intense colors indicate a stronger correlation. The upper triangle contains the p-value adjusted for the Benjamini-Hochberg method. The light-grey cells contain the non-significant p-values.

Note. Nat = Nationalism; ~~Eco = Economy; Cult =Culture;~~ RWA = Right-wing authoritarianism; SDO = Social dominance orientation; C19Anx = COVID-19 anxiety; Left-Right = Left-Right political view; S/EF-cons = Social/EFconomic~~iscal~~ conservatism; Consp = Conspiracy; Low/Mod-edu = Low/Moderate education. ~~* = p < .05 (adjusted for the false discovery rate).~~

Then, ordinary least squares regression was chosen to test the role of perceived COVID-19 anxiety threat on the association between authoritarianism and political attitudes. All variables in the regression models were standardized with a rescaling from 0 to 1. Nationalism and anti-immigrant sentiments (on Economy and Culture) were separately regressed on RWA, SDO, COVID-19 anxiety – and its interaction with RWA and SDO – and the Italian regions.

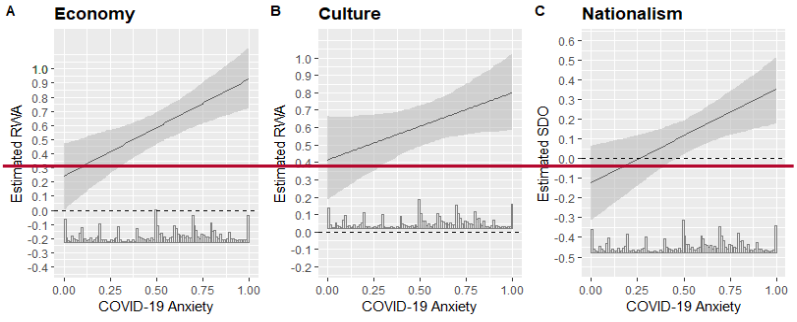
~~-~~Table 2 shows the ~~main~~ results of ~~these~~ regression models, reporting both ~~"~~"unadjusted"~~"~~ and ~~"~~"adjusted"~~"~~ estimates ~~–~~ (after the introduction of the socio-demographic and political orientation as covariates)~~.Table 3 shows the complete model also including the covariates. Figure 1 depicts the results of the regressions.~~

Table 2. Ordinary Least Squares regression results without covariates.

	Dependent variables					
	Nationalism		**Economy**		**Culture**	
Predictors	***Unadj. est.***	***Adj. est.***	***Unadj. est.***	***Adj. est.***	***Unadj. est.***	***Adj. est.***
RWA	.28*	.18	.24·	.05	.42*	.16
	[.11, .46]	[.00, .36]	[.00, .48]	[-.18, .28]	[.18, .65]	[-.06, .39]
	p < .001	*p = .15*	*p = .08*	*p = .89*	*p < .001*	*p = .28*
SDO	-.13	-.10	.35*	.25·	.29·	.18
	[-.31, .06]	[-.29, .08]	[.10, .60]	[.01, .49]	[.04, .54]	[-.06, .41]
	p = .34	*p = .57*	*p = .01*	*p = .09*	*p = .05*	*p = .26*
C19 anxiety	-.19·	-.16*	-.32*	-.27·	-.31*	-.20·
	[-.35, -.03]	[-.31, .00]	[-.54, -.11]	[-.47, .06]	[-.52, -.09]	[-.40, -.01]
	p = .05	*p< .001*	*p = .01*	*p = .03*	*p = .01*	*p = .24*
Region: Lazio	.01	.01	.03	.04	-.02	.03
	[-.03, .05]	[-.03, .05]	[-.03, .08]	[-.01, .09]	[-.03, .08]	[-.02, .08]
	p = .76	*p = .96*	*p = .39*	*p = .29*	*p = .47*	*p = .30*
Reg: Lombardia	.01	.00	.02	.03	.04	-.01
	[-.03, .04]	[-.03, .04]	[-.03, .07]	[-.02, .07]	[-.01, .09]	[-.07, .04]
	p = .86	*p = .97*	*p = .41*	*p = .46*	*p = .16*	*p = .25*
Reg: Veneto	.00	.00	.02	.01	.01	.01
	[-.05, .04]	[-.04, .04]	[-.03, .08]	[-.05, .06]	[-.05, .06]	[-.07, .04]
	p = .88	*p = .97*	*p = .41*	*p = .89*	*p = .84*	*p = .76*
RWA: C19 anxiety	.09	.13	.68*	.65*	.39·	.36
	[-.20, .39]	[-.16, .42]	[.29, 1.08]	[.28, 1.02]	[-.01, .78]	[-.01, .72]
	p = .76	*p = .66*	*p < .001*	*p < .001*	*p = .09*	*p = .25*
SDO: C19 anxiety	.48*	.35	-.26	-.40 ·	.10	-.09
	[.17, .78]	[.05, .65]	[-.67, .14]	[-.79, -.02]	[-.31, .51]	[-.48, .29]
	p < .001	*p = .11*	*p = .30*	*p = .09*	*p = .71*	*p = .76*
F	13.32·	9.50*	21.62·	20.06	27.00·	26.45*
Adjusted R²	0.09	0.12	0.14	0.24	0.17	0.29

Note. * p < .05; · p < .10 (adjusted controlling the false discovery rate). In each cell (i) the unstandardized estimates, (ii) the 95% confidence intervals in brackets, and (iii) the rounded p-value are reported. Abbreviations: RWA: Right-wing authoritarianism; SDO: Social dominance orientation; L/M-ed: Low/Moderate education.

Figure 1. Results of the regressions without covariates.



Note: the conditional effect of right-wing authoritarianism (RWA) on anti-immigrant sentiment related to the internal economy (A) and national culture (B) at different levels of COVID-19 anxiety. (C) the conditional effect of social dominance orientation (SDO) on nationalism at different levels of COVID-19 anxiety. Each plot shows the estimated conditional effect on each outcome at different levels of anxiety on the unadjusted estimates (models without covariates).

Table 2.3

Results of the Ordinary least Squares regressions models.with covariates.

	Dependent variables					
	Nationalism		**Economy**		**Culture**	
	Estimates		*Estimates*		*Estimates*	
Predictors	*Unadj.*	*Adj.*	*Unadj.*	*Adj.*	*Unadj.*	*Adj.*
RWA	.28* [.11, .46] *p* < .01	.18 [.00, .36] *p* = .15	.24 [.00, .48] *p* = .059	.05 [-.18, .28] *p* = .89	.402* [.178, .645] *p* < .01	.16 [-.06, .39] *p* = .29
SDO	-.13 [-.31, .06] *p* = .234	-.10 [-.29, .08] *p* = .57	.35* [.10, .60] *p* = .012	.25· [.01, .49] *p* = .09	.30*29· [.054, .554] *p* = .035	.18 [-.06, .41] *p* = .29
C19 anxiety	-.19** [-.35, -.03] *p* = .035	-.16* [-.31, .00] *p* < .001	-.32* [-.54, -.11] *p* = .01	-.27*[-.47, -.06] *p* = .04	-.31* [-.532, -.1009] *p* = .012	-.20· [-.40, -.01] *p* = .25
RWA: C19 anxiety	.10 [-.20, .39] *p* = .52	.13 [-.16, .42] *p* = .66	.68* [.29, 1.07] *p* < .002	.65* [.28, 1.02] *p* < .003	.40 [.01, .79] *p* = .06	.36 [-.01, .72] *p* = .25
SDO: C19 anxiety	.47* [.17, .78] *p* < .01	.35 [.05, .65] *p* = .11	-.26 [-.67, .14] *p* = .21	-.40· [-.79, -.02] *p* = .09	.08 [-.32, .50] *p* = .66	-.09 [-.48, .29] *p* = .76
***Region* Lazio**	.01[-.03, .05] *p* = .77	.01[-.03, .05] *p* = .96	-.03[-.03, .08] *p* = .39	.04 [-.01, .09] *p* = .29	-.02[-.03, .08] *p* = .48	.03[-.02, .08] *p* = .31
***Region* Lombardia**	.01 [-.03, .04] *p* = .86	.00 [-.03, .04] *p* = .98	-.02 [-.03, .07] *p* = .42	.03 [-.02, .07] *p* = .46	-.04 [-.01, .09] *p* = .16	.04 [-.00, .09] *p* = .25
***Region* Veneto**	.00 [-.05, .04] *p* = .88	.00 [-.04, .04] *p* = .98	-.02 [-.03, .08] *p* = .42	.01 [-.05, .06] *p* = .89	-.01 [-.05, .06] *p* = .85	-.01 [-.07, .04] *p* = .76
Societal Conservatorism	//	.00 [-.01, .01] *p* = .98	//	.01 [-.00, .01] *p* = .31	//	.01 [-.00, .01] *p* = .29
Economic Conservatorism	//	.00 [-.01, .01] *p* = .97	//	-.00 [-.01, .01] *p* = .62	//	-.00 [-.00, .01] *p* = .76
Conspiracy	//	.19* [.12, .26] *p* < .001	//	-.00 [-.09, .09] *p* = .99	//	.05 [-.04, .14] *p* = .39
***Political views* (1 = right, 0 = left)**	//	.00 [-.00, .01] *p* = .96	//	.04* [.03, .05] *p* < .001	//	.05* [.04, .05] *p* < .001
Age	//	.11* [.05, .17] *p* = .001	//	-.01 [-.09, .07] *p* = .89	//	.01 [-.06, .09] *p* = .83
Male	//	.02 [-.01, .04] *p* = .46	//	-.04 [-.08, -.01] *p* = .07	//	.03 [-.01, .06] *p* = .29
Income	//	.03 [-.01, .07] p = .46		-.08 * [-.13, -.03] p = .02	//	-.05 [-.10, .00] p = .25
Low Educational Level	//	-.00 [-.05, .05] *p* = .98	//	.01 [-.06, -.07] *p* = .89	//	-.01 [-.07, .06] *p* = .88
Mod Educational Level	//	.00 [-.03, .03] p = .98		-.01 [-.04, -.03] p = .89	//	-.01 [-.04, .03] .83
F	21.26*13.32·	9.50*	34.41*21.62·	20.06	42.52*27.00·	26.45*
Adjusted R²	0.09	0.12	0.14	0.24	0.17	0.30

Note: * = p < .05; · p < .10 (all p values are adjusted controlling the false discovery rate).
The Unadj. columns refer to the models without the socio-political covariates, the Adj. models refer to the models adjusted including the socio-political covariates.
In each cell (i) the unstandardized estimates, (ii) the 95% confidence intervals in brackets, and (iii) the rounded p-value are reported.
Abbreviations: RWA: Right-wing authoritarianism; SDO: Social dominance orientation.

As reported in Table 2, the main regressions' results are the following. RWA has a significant effect on nationalism (unadj: B = .28, p < .01), and anti-immigrant sentiments about culture (unadj: B = .402, p <.01). SDO has a significant effect on the anti-immigrant sentiments about economy (unadj: B = .35, p = .012) and the anti-immigrant sentiments about culture (unadj: B = .30, p = .03). COVID-19 anxiety has a significant main effect on Nnationalism (unadj: b = -.19, p = .03; adj: B = -.16, p <.001), anti-immigrant sentiments about eEconomy (unadj: B = -.32, p = .01; adj: B = -.27, p = .04), and anti-immigrant sentiments about culture (unadj: B = -.31, p = .012). The geographical region doesn't have any significant effect.

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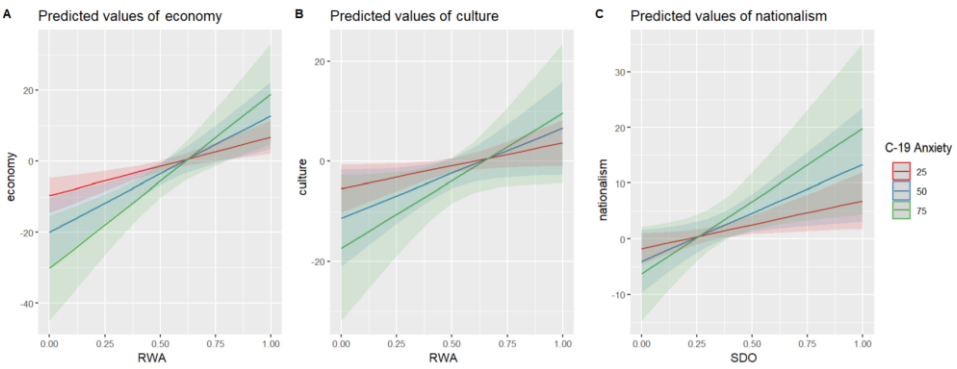
About the interactions, the interaction of COVID-19 anxiety and RWA has a significant effect on anti-immigrant sentiments about the economy ~~has a significant effect on economy~~ both in the model without covariates (unadj: B = .68, p = 001) ~~(unadj: B = .68, p < .003)~~ and with covariates (adj: B = .65, p < .003) – and ~~the~~ its effect on anti-immigrant sentiments about culture ~~has~~ is~~a~~ positive ~~effect~~ but not significant (unadj: B = .40~~39~~, p = .055; adj: B = .36, p = .25~~99~~). The interaction of COVID-19 anxiety and SDO has a significant effect on nationalism (unadj: B = .47~~8~~, p < .01).

About the socio-political covariates in the adjusted models, both societal and economic ~~conservatorism~~ conservativism do not have a significant eff~~e~~ect on the dependent variables. Nor the geographical region doesn't have any significant effect. ~~–~~Conspiracy has a significant effect on nationalism (adj: B = .19, p < .001). The (right) political views have a small positive effect on anti-immigrant sentiments about the economy (adj: B = .04, p < .001) and culture (~~-~~adj: B = .05, p < .001). Age has a significant positive effect on nationalism (adj: B = .11, p = .001). The income has a significant negative effect on anti-immigrant sentiments about the economy (adj: B = -.08, p = .02). The educational level does not have an effect on the dependent variables.

Figure 1.

Interactions in the regression models with covariates. On the x-axis the independent variable that influences the dependent variable on the y-axis, such effect is moderated by the levels of COVID-19 anxiety.



Note: the conditional effect of right-wing authoritarianism (RWA) on anti-immigrant sentiments related to the internal economy (A) and national culture (B) at different levels of COVID-19 anxiety. (C) the conditional effect of social dominance orientation (SDO) on nationalism at different levels of COVID-19 anxiety. Each plot shows the estimated conditional effect on each outcome at different levels of anxiety on the adjusted estimates (models with covariates).

Relying on these regressions, Figure 1 shows some interactions of COVID-19 anxiety with RWA and SDO in the models adjusted with covariates. It is possible to observe that the COVID-19 anxiety moderates the relationships between RWA and anti-immigrant sentiments about the economy, RWA and anti-immigrant sentiments about culture, and SDO and nationalism. In other words, at different levels of the moderator, the independent variables have a different effect on the dependent variables.

To deepen the moderation effect of COVID-19 anxiety in the models with covariates, the Johnson-Neyman interval was calculated to test at which values of the moderator – COVID-19 anxiety, with observed values ranging from 0 to 1 – the slope of the predictor on the predicted variable is statistically significant.

The slope of RWA on anti-immigrant sentiments about the economy is statistically significant (with $p < .05$) when COVID-19 anxiety is above .19. The slope of RWA on anti-immigrant sentiments about culture is statistically significant (with $p < .05$), when COVID-19 anxiety is above .10. The slope of SDO on Nationalism is statistically significant (with $p < .05$), when COVID-19

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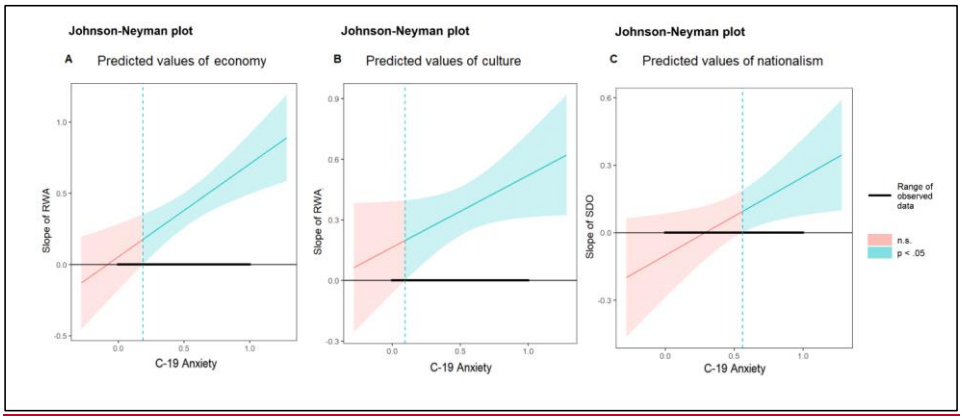
anxiety is above .56. Figure 2 shows the Johnson-Neyman plot for anti-immigrant sentiments about the economy, anti-immigrant sentiments about culture, and nationalism, respectively.

Figure 2.

Graph of the Johnson-Neyman region of significance for the interaction effects.



Summarizing these ~~R~~results, they show that in the Italian context COVID-19 anxiety strengthens the association between RWA and anti-immigrant sentiments. The interaction between COVID-19 anxiety ~~-~~and RWA is~~results~~ statistically significant ~~at the .05 level~~ on anti-immigrant sentiment towards the national economy (unadj: ~~β~~B = .68, $p < .00$2~~3~~, adj: B = .65, $p < .003$), but is not statistically significant~~and at the .10 level~~ on the negative impact of immigrants on Italian culture (unadj: ~~β~~B = .50~~39~~ $p = .0$55, adj: B = .36, p = .25~~99; Figure 1~~).

In terms of social dominance, when nationalism is set as the dependent variable the estimated effect of SDO, while its main effect is absent ~~as the main effect~~, increases in conjunction with COVID-19 perceived anxiety ~~when nationalism is set as the dependent variable~~ (unadj: ~~β~~B = .4~~8~~ p <= .0~~106, see Figure 1~~). When the covariates are added into the adjusted regression model, t~~T~~he statistical significance of SDO in interaction with COVID-19 anxiety is no longer achieved ~~when the covariates are added into the regression model~~ (adj: ~~β~~B = .35 p = .1~~08~~).

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When anti-immigrant sentiments about the internal economy and national culture are set as dependent variables in the adjusted regression models, ~~The same~~the interaction of SDO and COVID-19 anxiety ~~result, but~~was in the inverse direction, namely negative (as anxiety increases, the coefficients for SDO decreases)~~:, was observed when anti-immigrant sentiments about the internal economy and national culture are set as dependent variables in each own adjusted regression model. Nonetheless~~still, ~~, this effect is~~it had a not significant effect ~~significant only~~ on the internal economy ~~and at the .10 level~~ (adj: ~~β~~B = .40 p = .09~~3~~) nor on culture.

Considering the complete models (i.e., 'adjusted')~~,~~ with the introduction of sociodemographic and political covariates,~~),~~ higher levels of nationalism were observed in older inhabitants (adj: ~~β~~B = .11 *p* = .001) and with higher scores of conspiracy beliefs related to COVID-19 (adj: ~~β~~B = .19 *p* < .001). Stronger anti-immigrant sentiments towards the internal economy distinguished people with lower income (adj: ~~β~~B = -0.8 *p* = .02~~16~~) and with a political ideology relatively on the right (adj: ~~β~~B = .04, *p* < .001). A more right-wing political position also characterized people who believe in the negative impact of immigrants on ~~the~~ Italian culture (adj: ~~β~~B = .05 *p* < .001). Interestingly, no differences were observed between Italian regions in none of the ~~computed~~ regression models.

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4. Discussions

In the context of the COVID-19 pandemic, this study explore~~d~~s the relationship between threat perception and political attitudes in Italy. We highlight the role of existential pandemic-related threats in fostering Right-wing political attitudes and ethnocentric attitudes. In line with Hartman et al. (2020), the COVID-19 perceived anxiety appears to moderate the association between Right-Wing ideological predispositions (i.e., RWA and SDO) and ethnocentric political attitudes (i.e., nationalism and anti-immigrant sentiments). In an Italian representative sample, we found that both RWA and SDO had a positive and significant association with nationalism and anti-immigrant sentiments.

Despite at first glance the bivariate associations of COVID-19 anxiety with RWA, SDO, and anti-immigrant sentiments were low, the regression models by considering more variables together allowed to disentangle the association of COVID-19 anxiety and the aforementioned constructs.

Despite in the regressions with covariates (i.e., sociodemographic and political orientation) ~~T~~the main effects of RWA and SDO on anti-immigrant sentiments ~~the latter~~ were statistically non-significant ~~in regressions with covariates (i.e., sociodemographic and political orientation)~~, considering RWA and SDO in conjunction with COVID-19 related anxiety allowed some ~~but~~ significant ~~results~~ associations to emerge~~d considering RWA and SDO in conjunction with COVID-19 related anxiety~~.

~~-~~Interestingly, considering the economy-related field, there was a statistically significant interaction of RWA and the perceived anxiety of COVID-19 (impersonal existential threat) in predicting higher anti-immigrant sentiments. Thus, as predicted on the basis of preexisting literature, the different levels of COVID-19 perceived anxiety changed the relationship between authoritarianism (RWA) and anti-immigrant sentiments. In other words, the higher participants' perceived threat levels predicted higher RWA anti-immigrant sentiments concerning the economic aspects. Also, the interval of significance of this moderation was for values of COVID-19 anxiety above .19. Contrary to the pattern emerged in the Republic of Ireland ~~pattern~~, the perceived threat of COVID-19 did not moderate the effect of RWA on nationalism and anti-immigrant sentiments concerning cultural aspects, as well as in the UK study (Hartman et al., 2021). Furthermore, in the Italian sample, the perceived pandemic threat (expressed by COVID-19 anxiety) moderated the relationship between SDO and Right-wing attitudes as well, indeed, high levels of perceived threat were predictive of a close relationship between SDO and nationalism. In particular, the association of SDO and nationalism was significantly moderated by COVID-19 anxiety when the latter showed levels above .56. ~~Specifically~~In other words, ~~only~~ when ~~a~~ the perceived threat reflected by COVID-19 anxiety was moderate-to-high, SDO significantly predicted higher levels of nationalism.

~~-~~These findings suggest the~~a~~ role of existential threat in enhancing out-group prejudice in the Italian pandemic context. In particular, the present research showed how the anxiety generated by the impersonal COVID-19 threat can have serious consequences for ~~the~~ inter-group dynamics by strengthening the right-wing attitudes that could generate outgroup derogation up to exclusion and violent and aggressive behaviors. For instance, during the COVID-19 pandemic, several episodes of violence toward~~s~~ immigrants occurred in Italy (Devakumar et al., 2020; Esses & Hamilton, 2021). Interestingly, the focus of this study was on a generic impersonal threat, and this suggests that even

a threat not exerted by any out-group (e.g., illness, catastrophe, crisis) can influence inter-group attitudes (Hartman et al., 2021).

In a way, the findings of this study are consistent with those in the literature focused on the existential threat, mortality salience, and *conservative shift* (Burke et al., 2010, 2013; Greenberg et al., 1992; Jost et al., 2017). Uncertain and threatening situational factors (Freeston et al.,2020) might enhance anxiety, authoritarianism, prejudice, and suspicion as well. This hypothesis seems consistent with the significant positive association between conspiracy beliefs related to COVID-19 and nationalism that this study found in the Italian population.

This study has some limitations that should be considered. The cross-sectional study design did not allow to draw any causal inference. Further studies should, therefore, test the direction of influence among variables through experimental and/or longitudinal designs ~~with the aim~~ to understand whether perceived threat moderates the effect of RWA or SDO on ethnocentric political attitudes or, vice versa, personal predispositions (i.e., RWA and SDO) moderate the effect between perceived threat and nationalism and anti-immigrant attitudes. Moreover, the existential pandemic-related threat was measured using a single proxy of COVID-19 perceived anxiety, future studies should use a more precise measure with more items to confirm these results.

Future research may try to replicate these findings by using a longitudinal design to observe the evolutions of constructs over time (Bennett et al., 2023).

Regarding the strengths of this study, it was one of the first studies highlighting the RWA and SDO dynamics in the Italian context during the COVID-19 pandemic (Bochicchio et al., 2021; Roccato et al., 2021). Furthermore, much of the literature about the impact of COVID-19 focused on the (intra)individual psychological issues, this study is one of the few highlighting its impact on ~~the~~ inter-individual relationships and within the whole society. Given the relevance of such issues and the role some situational-impersonal factors might have in shaping political attitudes and intergroup behaviors), further studies are needed to understand the generality of this phenomenon and to understand the role that contextual factors play in intergroup relations.

Noteworthy, understanding these complex individual, inter-individual, and social dynamics from a theoretical point of view is the first step to plan and actualize interventions to

improve the overall well-being of ~~the~~ society and ~~the~~ individuals (Bochicchio et al., 2021). Indeed, the findings of this study may be useful to inform psychological interventions to reduce and manage the distressing symptoms (as the anxious ones) triggered by a perceived threat, thus indirectly favoring more inclusive attitudes towards the outgroup. Various approaches can be used to elaborate on and accept the threatening situation (Consoli et al., 2020; Sun et al., 2020). For example, according to the Terror Management Theory (Greenberg et al., 1992; Pyszczynski et al., 2004), the buffering effect of self-esteem may be used to hinder the adverse effects of symptoms (e.g., anxious, traumatic~~ety~~) triggered by the impersonal COVID-19 threat (Rossi et al., 2022). Since this kind of psychosocial phenomenon can have serious relapses for society and its components, interventions should be large-scaled to reach a large part of the population. but it is also important to encourage people to seek professional psychological help (Mannarini, Rossi, Munari, 2020; Rossi & Mannarini, 2019; Schnyder et al., 2017~~; Mannarini, Rossi, Munari, 2020~~). In particular, the categories most at-risk for adverse psychological outcomes – as people with previous psychological difficulties (Bottesi et al., 2018; Rossi, Panzeri & Mannarini, 2023) and/or physical issues (~~(Bottesi et al., 2018,~~ Ferrario et al., 2021; Panzeri & Ferrario, 2020;~~ Rossi, Panzeri & Mannarini, 2023~~), elderlies (Panzeri et al., 2021), and healthcare ~~-~~workers (Panzeri et al., 2021) – should be supported by favoring their access to psycho-social support, both in terms of connection with the social community and through psychological interventions (Panzeri et al., 2022; Ratti et al., 2017).

Among the methodological strengths of this study, in particular, the stratified sampling allowed to gain a sample representative of the Italian population from north to south. Moreover, the replication of the research design used in other countries allowed us to compare the results within the same framework and with fewer confounding factors (Hartman et al., 2021; McBride et al., 2020).

In conclusion, overall, the findings of this study results might be useful for ~~both~~ researchers, clinicians, and policymakers. Only a real dialogue between the academic field and governance can debunk some authoritarian drifts and hostile climates still present in many contexts.

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The Role of the COVID-19 Impersonal Threat Strengthening the Associations of Right-wing Attitudes, Nationalism and Anti-immigrant Sentiments

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Response to the Editor and Reviewer's comments

about the article titled *"The Role of the COVID-19 Impersonal Threat Strengthening the Associations of Right-wing Attitudes, Nationalism and Anti-immigrant Sentiments"*

Authors wish to thank both the Editor, for considering our manuscript for publication and for sending it to peer-review, and the Reviewer for the insightful feedback provided and the time spent reviewing the manuscript. The valuable comments were useful to improve the manuscript.
Detailed responses to all the major and minor points (listed in italics) raised by the Reviewer are listed below.

Reviewer #1:

Thanks for getting the chance to read and review the manuscript titled "The Role of the COVID-19 Impersonal Threat Strengthening the Associations of Rightwing Attitudes, Nationalism and Anti-immigrant Sentiments". The manuscript deals with the moderating effect of an impersonal threat on the relationships between right-wing attitudes and prejudicial attitudes. This is indeed a relevant topic in the current Italian context. In addition, the submitted manuscript is an interesting read and fits well into the scope of Current Psychology. However, there are a few points that need more attention to enhance the work. I will list those points below and hope they will help you to revise your manuscript.

Thank you for the overall positive evaluation of the paper. Answers to all the specific points raised are reported below

1. Please correct all typos, language problems, and typesetting issues.
Please follow the APA guidelines in your manuscript:
(a) avoid paragraphs with less than three sentences,
(b) use statistical notation as recommended, and
(c) follow citation requirements.
I suggest the authors to have the manuscript checked by a professional proofreader. Here are a few examples (not necessarily all).
** Page 2, line 25: "an strong";*
** Page 3, line 12: the citation "Adorno et al., 2019" is not in alphabetical order within parentheses;*
** Page 4, line 58: citations are not in alphabetical order;*
** Page 4, line 1: character size is different from the rest of the manuscript;*
** Page 4, line 43: "a pandemic threat" may have a misleading meaning in this context, if you refer to an existential threat caused by the pandemic.*
** Page 6, line 22: "Educational"*
** Page 11, line 13: "(β =.39 p = .099)" and similar errors in the following lines and pages.*

Authors wish to thank the Reviewer for such a thorough check of language and style points. The manuscript was checked and corrected to meet all the above-mentioned requirements.

2. Please check and correct the wrong correspondence between a reference and its doi link. Here is an example of inconsistency:
Page 18, line 30: R Core Team. (2018). R: A language and environment for statistical computing. In R Foundation for Statistical Computing. https://doi.org/10.1017/CBO9781107415324.004
The doi link refers to a different work.

Thanks, the doi was fixed and the references were re-checked.

3. Theoretical background
I feel the lack of an introduction that put your study in a defined context and underline why your research questions are important. In the same way, a better introduction may specify an over-arching theory that places the constructs of interest in a common phenomenological space. I had the impression that there is a need to provide a rational for the variables selected and investigated in the current study.

Thanks for this comment which allowed us to better structure the section. Going through the introduction, the parts of the referring to these important points were highlighted by rephrasing them or by adding new parts.
About the over-arching theory, it is the Duckitt's dual-process motivational model (Duckitt, 2001, 2009). To make this clear the readers, in the introduction this part about the theory was moved above to gain saliency and the constructs are presented later. Also, explicit referrals to this theory were added throughout the introduction as well as for variables selection. For instance, the introduction was modified as follows:

> Page 2, line 6: *"Referring to the Duckitt's dual-process motivational model (Duckitt, 2001, 2009) as an overarching theory,* […]".
>
> Page 4, line 11: *"To this aim, the abovementioned Duckitt's dual process model is considered as an overarching framework both for variable selection and for the interpretation of the results."*

Also, this part was added to underline why these research questions are important:

> Page 4, line 23: *"This research question is important because some contextual factors, independently from socio-psychological trait predispositions, may lead people to systematically shift toward right-wing attitudes. Importantly, to understand these phenomenological dynamics may represent a starting point to inform and realize interventions aimed to favor inclusive attitudes towards the outgroup to improve the social good (Bochicchio et al., 2021)."*

About variable selection:

> Page 5, line 1: *"The variables were chosen in view of the Duckitt's dual process as a theoretical framework, namely, RWA and SDO were considered as independent variables, and nationalism and anti-immigrant sentiments were the dependent variables. Also, COVID-19 anxiety was chosen to represent the existential threat.."*

4. Methods and Materials
4.1. There are not indices of internal consistency of measures.

Thanks, the indices of internal consistency (Cronbach's alpha) were calculated and added for each measure. All values are above the desired threshold and can be considered good.

4.2. I think that further information about the use and choice of statistical analyses would be useful.

Thanks for the suggestion. The statistical analysis section at page 8 was modified and extended by adding new parts to better outline the rationale behind. Please find it below for your convenience:

> "First, the relationships among demographics, socio-political variables, and psychological constructs were explored through Spearman's correlation coefficients, the associated p-values were adjusted controlling for the false discovery rate (Benjamini & Hochberg, 1995).
>
> Second, the ordinary least squares linear regression was used to test the role of perceived COVID-19 anxiety threat (as a moderator) on the association between authoritarianism (i.e., RWA, independent variable) and political attitudes (dependent variables). So, three regression models were fitted, each with a different dependent variable: nationalism; anti-immigrant sentiments about the Economy; and anti-immigrant sentiments about Culture. The predictor variables were always RWA, SDO, COVID-19 anxiety, the interactions of COVID-19 anxiety with RWA and SDO. We will refer to these as the 'unadjusted' models as we did not include socio-political covariates. Notice that all variables used in the regression models were standardized through a rescaling from 0 to 1.
>
> After, to control for the effect of the sociodemographic and political orientation covariates (e.g., age, gender, region, conservativism, conspiracy, political views), we estimated the same models by adding such covariates, we will call these the 'adjusted' models.
>
> To test the region of the significance of the interaction, we used the Johnson-Neyman interval analysis (Johnson, & Neyman, 1936) to test for which values of the moderator the relationship between predictors and dependent variables was statistically significant.
>
> The alpha level was set at .05, only results with an associated p-value below this threshold are commented as statistically significant – also other results not statistically significant results are described. All the p-values were adjusted for the false discovery rate (Benjamini & Hochberg, 1995), representing the expected proportion of false discoveries among the rejected hypotheses. The R Core Team Software was used for all the statistical analyses (R Core Team, 2018). The ggplot2 package was used for the graphs (Wickham, 2016)."

5. Results

5.1. Table 1 does not explain the meaning or utility of colors. Furthermore, in the Note of Table 1 you say that " = p < .05" but there is not a "*" in the Table.*

Thanks for the comment. In the note of Table 1 (at the bottom of page 9) was added a comment about the colors (red and blue) meaning and the stars about statistical significance were removed. Indeed, now the upper triangle of the table contains the exact p-values corrected with the Benjamini-Hochberg method. For readers convenience, the not significant values are reported in light-grey.

5.2. It is unclear if you centred the variables before the moderation analysis, please specify.

Thanks for the opportunity to make clearer a point that might not have been evident. A sentence was added also in the results section to underline the variables' standardization process (rescaling from 0 to 1) – previously specified just in the methods section.

Page 6 line 15, methods, statistical analyses: "All variables used in the regression models were standardized through a rescaling from 0 to 1."

Page 10 line 2, results: "All variables in the regression models were standardized with a rescaling from 0 to 1."

5.3. You say that Table 2 reports regression results without covariates, but in that table you do report also the "adjusted" estimates (after the introduction of the sociodemographic and political orientation), which are the results with covariates. In fact, it seems to me that Table 2 and Table 3 are identical for the first eight rows of Table 3. If so, I suggest to remove Table 2.

Thanks for raising this point. The comment about the covariates is correct and, as suggested, the Table 2 was removed. Now the one called table 2 is the one previously called table 3 – the complete one.

5.4. Another unclear point is about the difference between unadjusted and adjusted estimates regarding the choice of control variables: if the difference between unadjusted and adjusted estimates is the covariances of "sociodemographic and political orientation", then why the Italian region covariates in the "unadjusted model"? Is not the region a sociodemographic information?

Thanks for the comment, despite the region is a socio-demographic information it was initially considered in the unadjusted models in order to account for any potential regional difference as a confounder. However, as suggested, the unadjusted models were re-estimated without the region. Their results – not showing relevant differences from the previous models with the region – were updated accordingly both in Table 2 and in all the sections of the manuscript (statistical analysis and results).

5.5. Be consistent with Notes of Tables: in Table 1 " = p < .05", while in Table 2 "* p < .05". In the note of Table 2 "L/M-ed: Low/Moderate education." but I cannot see "L/M-ed" in the Table.*

Thanks for noticing. About table 1 (page 9) reporting the correlations' results, it was changed by putting the exact p-values (with the BH correction) in the upper triangle – so any reference to * was removed.
About table 2, the inconsistencies about the 'Low/Mod-edu' variables, respectively corresponding to Low education and Moderate education, were fixed.

5.6. It is unclear why you choose to present in figure only the "unadjusted" moderation effects, while the "adjusted" would be more valid considering also the covariances of control variables.

Thanks, as suggested, the figure(s) (page 12) were changed to present the effects in the adjusted models with the covariates.

5.7. Figure 1 needs a more informative Note. It is not clear which regression line refers to a low or high level of the moderator. Furthermore, the presence of the name of "Covid anxiety" on the abscissa axis (which is traditionally used for the independent variable) and the presence of the name of "RWO" on the ordinate axis (which is traditionally used for the dependent variable) may be misleading without an explanation, since a reader could simply see that figure as the relationship between Covid anxiety and RWA.

Thanks for the comment. Accordingly, Figure 1 (page 12) has been replaced following these suggestions. Now figure 1 clearly shows the results of the adjusted regressions models (with covariates) in a conventional way. In each graph, on the x axis there is the independent variable that has an effect on the dependent variable on the y axis, such effect is moderated by the different levels of COVID-19 anxiety. The conditional effect of the moderator for its different values are represented with different colors in the line and associated confidence intervals.

5.8. I think you should choose one alpha level for all the result to gain clarity for the interpretation of what is significant and what is not. Furthermore, given the size of your sample, I would avoid an alpha level of .10.

Thanks for the comment. As suggested, the alpha level of .10 was removed. In the statistical analysis section only the alpha level of .05 was chosen. Thus, only results with a p-value below .05 are commented as significant. With the aim to describe the results, some results with theoretical importance and with a p-value below .10 were commented and they are explicitly described as not statistically significant. In addition, as suggested in another comment, to explore for which values these interaction effects are significant, the Johnson-Neyman interval analysis was added.
To address the point raised, in the statical analysis section, the sentence about the p-value was modified as follows:

> page 8., line 23: "The alpha level was set at .05, only results with an associated p-value below this threshold are commented as statistically significant – also other results not statistically significant results are described."

5.9. In the Results section, I cannot find comments about the main effects of RWA, SDO, and Covid anxiety on the three outcome. In particular, significant main effects of Covid anxiety emerge from Table 2-3. I think you should comment this result, also because we can see in Table 1 that the correlation between Covid anxiety and Nationalism was not significant, while the main effect becomes significant in the regression model.

Thanks for this comment. In the revised version of the manuscript the results of the correlations and all the regression models were commented in detail in the results' section (please see page 9, lines 5-13) – as well as the newly added Johnson-Neyman analysis (at the bottom of page 12). Subsequently, the most important results are also discussed in the discussion section.

6. Discussion: the discussion is clear and highlights the crucial results and their consequences.

Thanks for appreciating this section. As aforementioned, some slightly changes were made to match the results because of the revisions made.

6.1. In page 12, line 46-48 you say that "only when a perceived threat was high, SDO significantly predicted high levels of nationalism". This interpretation should be supported by the results of a simple slope analysis. In your Results section it is not presented the effect of SDO on Nationalism when Covid anxiety is low, therefore the reader cannot see if that conditional effect is not significant. The significant interaction effect says only that that effect is lower (not necessarily not significant) than the conditional effect when Covid anxiety is high. I suggest to present a simple slope analysis to support this interpretation or avoid the use of "only" in the discussion.

Thanks for the comment. To this extent, the simple slope analysis with the Johnson-Neyman interval of significance was added. The sections of statistical analysis, results and discussions were modified accordingly. In particular, as suggested, in the results section was added a part about the effect of SDO on Nationalism when COVID-19 anxiety is low (please see the bottom of page 12). Also the Johnson-Neyman interval analysis was commented. These points were then integrated in the discussion section.