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COVID-19 Pandemic and Religious Attributions. An Exploratory Study in Italy

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Abstract: In 2020, over 2 million Italian people contracted the SARS-CoV-2 virus and more than 105 thousand died. A pandemic of this magnitude and the very stringent countermeasures adopted were unprecedented also in terms of its psychological, social, and economic far-reaching effects on people's lives. One of the principal effects of such a tragic and unexpected situation is that of triggering people's cause-seeking process. The exploratory study described in this article focuses on the search for causes carried out by people and prompted by the climate of great uncertainty that still characterizes the situation. In particular, the religious attributions for a possible contagion are examined, both for theoretical advancement and practical reasons, that is to limit the extent of the outbreak. The study involved 575 participants and analyzed the relationship between the reported causal attributions and respondents' characteristics, such as their religiosity. The main findings highlight that religious causal attributions have been chosen very rarely, even regardless of the perceived centrality of religion in one's life. Possible explanations are discussed, such as the "democratic" dynamic with which the contagion spread, the lack of gratification linked to the sense of uniqueness, and the sensation of controllability of the contagion given the overexposure to information.

Keywords: Religious Attributions, Cause-Seeking, Causal Dimensions, Health, COVID-19, Pandemic

Introduction

In December 2019, a highly contagious atypical viral pneumonia produced by a novel coronavirus appeared in Wuhan, China. In the following weeks, the outbreak rapidly spread worldwide, making an increasing number of countries aware of the gravity of the situation and pushing them to identify effective intervention strategies. As a result, the Italian government opted for the lockdown, a drastic containment measure that has entailed the suspension of social, educational, commercial, and productive activities and compelled people to stay at home for two months (from 9 March to 4 May 2020).

This profoundly limiting situation, along with the relevant social and economic effects, has had a deep impact on the psychological well-being of individuals (McBride *et al.*, 2021). In addition to the justifiable fear of being infected, feelings of uncertainty have emerged, since the inevitable rethinking of individual or family projects (Coli *et al.*, 2020) and the incomplete and unsatisfactory knowledge on the pandemic also due to conflicting messages from politicians and experts have

made uncertainty presumably one of the most common emotion experienced by people.

This exploratory study aims to know the explanations that people have had about the reasons and dynamics of the infection from the SARS-Cov-2. This phenomenon encompasses the key features of unexpectedness, disruptiveness, and tragic nature which, along with the human aspiration to control one's environment and to increase knowledge (Taylor, 1983; Weiner, 2001; Crandall *et al.*, 2007), generate the perfect scenario for the process of cause-seeking to arise (Roesch and Weiner, 2001; Grayson *et al.*, 2014; Stiensmeier-Pelster and Heckhausen, 2018; Graham, 2020). More specifically, the focus of this study will be religious attributions: Religion, indeed, represents one of the principal sources of possible explanations for people facing a relevant health-threatening situation. In such situations, besides being a powerful answer to the recurrent question "Why me?", religion also helps people maintain belief in a just, fair, and predictable world and in a love-deserving self (Lerner, 1980; Hunt, 2000; Ellison and Levin, 1998).

The importance of studying this process and its outcomes lies in knowing both the explanations identified by people concerning the phenomenon ("Why?". Kelley, 1973; Weiner and Graham, 1990) and the emotions experienced and the behaviors adopted ("So what?". Ivi; Hastie, 1984). Focusing on religious attributions may provide a more comprehensive viewpoint to better understand their behavioral consequences.

Causal Attributions

Since explaining and understanding the world satisfies individuals' innate, peculiar and adaptive motivation for knowledge and mastery of the environment, causal search constitutes a pancultural and timeless spontaneous process in the individual's relationship with the world around him (Hastie, 1984; Weiner, 2001; Moskowitz, 2005). In this process, the individual's analytical commitment is comparable to that of a social psychology real experiment in which the accuracy of the analysis is proportional to the amount of collected information (Heider, 1958).

Studies on causal attributions were inspired by the seminal work of Heider (1958), the uncontested founder of attribution work, who assumed that people make sense of the world by attributing events (e.g., others' behaviors) to their underlying causes. He depicted a process named "attribution" in which the observer extracts invariance out of variance, that is identifies patterns of invariance in the wide variance of events. In addition, Heider first spoke about the dichotomy internal/external attributions, sharply distinguishing between "factors within the person" or "factors within the environment" (p. 82). Some years after Jones and Davis (1965), who argued conditions under which a perceiver infers an agent's personality trait or attitude (the agent loves risk) from an observed behavior (he acted risky), Kelley (1973) defined his covariation model. In this model Kelley described some pivotal steps in the cause-seeking process, that is individual's efforts to detect any peculiarity of the agent's behavior in that situation concerning similar situations (distinctiveness and consistency) or concerning other agents in the same situation (consensus). A few years later, Bernard Weiner pointed out a further outcome of an individual's analytical process, that is causal dimensions, whose impact on what the observer will feel and do as a consequence of the attribution is even greater than that of the attribution itself (Weiner, 1985; Roesch and Weiner, 2001). These dimensions represent three underlying properties of causes and refer to the location of the cause (internal or external to the agent. Locus of causality), whether the cause is stable over time (Stability), or whether the cause is subject to volitional change or not (Controllability) (Weiner, 1979; Weiner, 1985).

The complexity of the attribution process and some recurring biases specific to the field of social cognition may undermine the explanatory quality of the outcome

(Jones and Nisbett, 1987; Ross, 1977). Nonetheless, the importance of studying causal attributions emerges considering the direct or indirect consequences on behavior. The most influential attributive models in the literature describe a process in which a series of cognitive and emotional events occur, which give life to one of the main "springs for action" (Weiner, 1979), being causal attributions-especially if considering their dimensions-highly predictive of what the observer will feel and do (Weiner, 1985; Graham, 2020).

Causal Explanation, Feelings, and Behaviors

In his seminal work, Weiner (1985) widely focused on the impact of causal dimensions in shaping emotions and behaviors (Harvey and Martinko, 2009). As for Locus and Controllability, the two dimensions on which Weiner's work has mainly focused, the author has highlighted how self-attributing the cause of an undesirable event (for example, getting infected by SARS-CoV-2, as in the case of the present study) triggers negative emotions such as guilt and shame (Overwalle *et al.*, 1995). Negative emotions, most of the time anger and resentment, are also aroused when the cause of a negative event is ascribed to a supposed external agent, which becomes the target of these emotions (Gundlach *et al.*, 2003; Weiner, 1985).

Perceived controllability of an event has been identified as an important determinant of affective and behavioral reactions (Schwarzer and Weiner, 1991; Weiner *et al.*, 1988) and results to be deeply linked to responsibility: You can hold an agent responsible for an event mainly if you recognize that he could choose to behave differently (Weiner, 1995). The emotions that you will experience and how you will behave will be most affected both by the nature of the event (positive or negative) and if you perceive the agent (yourself or someone else) as being able to influence the event. They range from a sense of gratitude (positive event and inability to control) to an increase of self-confidence (positive event and ability to control), to compassion (negative event and inability to control), to anger (negative event and ability to control) (Overwalle *et al.*, 1995; Ingledew *et al.*, 1996; Tracy and Robins, 2004). A key shared aspect of controllable events, pleasant or unpleasant, is the individual's feeling of being able to intervene in similar situations to modify their outcome (or maximize the probability of a similar outcome, if it is positive) (Murray *et al.*, 2021).

The influence of the third causal dimension, Stability, seems to occur mostly with the expectations for the future and the power to change the direction of things. Attributing a failure to a cause perceived as unstable affects future expectancies less than perceiving the cause as stable: A failure due to unstable causes such as lack of effort or bad luck is considered easier to overcome (Kovenklioglu and Greenhaus, 1978). Cause perceived as

stable, on the other hand, raises hope (motivated by the expectation of future success) in the case of a positive event, or helplessness, in the case of a negative event (Overwalle *et al.*, 1995; Hareli and Tzafrir, 2006).

In the case of religious attributions, past studies found that attributions to God (or to supernatural forces) scarcely fit in the bipolar continuum which characterizes each of Weiner's three causal dimensions (for example, controllability as a continuum from uncontrollable to controllable) (Pargament *et al.*, 1982). Locus and Controllability often show similarities, this witnessing that, usually, people think that God has always control over things internal to Him, unlike persons (Mallery *et al.*, 2000). According to Weiner's model, in the case of positive events, people may experience gratitude (for God's help), pride, or an increase in self-esteem (for God's perceived favor). Contrarily, when people attribute negative events to God ('s will or purpose), they are expected to feel anger or shame, for perceiving to not deserve God's approval. On the other hand, learned helplessness may ensue depending on the role of the observer in determining divine intervention: If it is unilateral or in response to others' actions, then learned helplessness may occur, but if God is acting in response to the observer, learned helplessness may not result, because little sense of control still exists (Mallery *et al.*, 2000).

The attributive levels involved in this phase of the inference process influence simultaneously the attribution resulting from the whole process, which should be then considered as a complex collage of different characteristics, blended. Consequently, also the number and complexity of possible emotional and behavioral outcomes increase. Locus, Stability, and Controllability seem to elicit very different emotions and reactions, depending on the overall attribution made by the observer: On an interpersonal level and in the case of unpleasant events, causes considered external to the agent and/or uncontrollable inspire more frequent feelings of closeness and sympathy (therefore, collaborative/help behaviors); on the contrary, causes perceived as internal to the agent and/or controllable by him support the idea of his responsibility in the situation and arouse anger and aggressive/avoiding behaviors. Focusing on the link between the attribution of responsibility and helping behaviors, Weiner noted that people are less likely to help a person in difficulty if she is judged to be responsible for her situation (attribution-responsibility-support model (Weiner, 1995; Jeong, 2010). This can be further clarified by thinking, for example, about how much the attributive dimensions influence the attitude towards Poverty held by ordinary people but also by policymakers (Piff *et al.*, 2020; Norcia and Rissotto, 2015; Bradshaw, 2007): The belief that a poor person is not to held responsible for her condition but, say, situational aspects should be blamed (external and uncontrollable, such as scarce employment opportunities), will trigger a much greater inclination to

support than if the individual is blamed for his condition.

If the observer coincides with the agent, that is on an intrapersonal level, when the attribution of an unpleasant event is to internal but uncontrollable causes ("What happened is my fault and I cannot do anything to avoid it."), most frequently feelings of shame arise. Furthermore, if the cause of the event is perceived as stable ("What happened is my fault and I cannot do anything to avoid it, now or in the future."), the sense of helplessness and resignation becomes even greater (Coffee *et al.*, 2009) and, as a result, withdrawal is more likely to occur. As in a vicious circle, personal self-efficacy will suffer, while the future expectation of uncontrollability will increase the sense of helplessness (Abramson *et al.*, 1978). The behavioral outcome, on the other hand, appears the opposite if the underlying cause of the failure is always perceived as internal but controllable: in this case, the sense of guilt for an outcome that "should" and "could" be avoided, associated with the desire to remedy, fosters an increased commitment toward the result (Hareli and Hess, 2008; Graham, 2020).

Religion and Causal Attribution

Causal attributions are generally strongly influenced by the observer's needs, first, the need to preserve one's meaning-belief system regarding the external world and its functioning. In this way, the observer increases the feeling of being able to master reality, consequently maximizing the chances of success and protecting himself from possible failures or threats (Miller, 1979; Lazarus, 1966). The protection of the self-image is a further aspect that influences the attribution process: The choice of the cause of an event by an observer also depends on how much it preserves or improves the idea of the self (and the image he presents to the outside world) as competent, moral or of value.

Religious attributions, without necessarily questioning whether they arise (even or only) from sincere faith, may fulfill the needs just mentioned in a very effective way. These attributions offer an articulated meaning-belief system (or narrative. Burnell *et al.*, 2009) that allows interpreting the events of the world, providing them with clear meaning and, therefore, controllability. Recognizing the intervention of God in a circumstance can also enhance the self-image, especially in the case of a positive event. The person can both believe that he is worthy of the favor of God (conditional love) and perceive himself as unconditionally loved, namely loved despite characteristics or behaviors that in her eyes would not deserve it (Hovemyr, 1998).

The most influential models on religious attributions follow the more general models of causal attributions (Baron and Byrne, 1987; Fiske and Taylor, 1991) and highlight two main aspects: (1) The importance of considering the various ways in which people represent the intervention of God. (2) The heuristic process generating religious attributions

is strongly influenced by the characteristics of the observer, the event, and both their contexts.

As for the variety of the attribution, functional to restore a meaningful worldview (the care of a loving God, the plan of a participating God, or the punishment of an angry God. Pargament and Hahn, 1986), the literature highlights a strong correlation between the representation of God's intervention held by people and the perceived contingency of the event. In health-related situations, the main focus of this article, two particularly relevant categories concerning religious attributions have emerged: The category of behavior (responsible/irresponsible) and the category of outcome (positive/negative) of the aforementioned behavior. From the perspective of health, responsible behaviors presumably lead to good health (e.g., being on a balanced diet or not driving too fast), unlike irresponsible behaviors (e.g., smoking). The following outcomes can be positive (e.g., reaching home safe and sound) or negative (e.g., bronchitis). Contingency, that is the consistency between a specific behavior and the reasonably expected outcome, results to be strongly related to the different perceptions of God. Generally, attributions to deity are more common with positive outcome situations, with some exceptions (Pargament and Hahn, 1986). For example, attributions to God's will are more frequent in seemingly non-contingent/unjust situations (Bulman and Wortman, 1977; Cook and Hegtvædt, 1983) or a contingent situation with a positive outcome (Pargament and Hahn, 1986). On the other hand, God's love attributions are also found in contingent Irresponsible behavior-Negative outcome situations, being explained as God's teaching to behave responsibly or the way God protects from an even more negative outcome.

As for the second point, also religious attributions, similar to others' beliefs and opinions, positively correlate with some heuristics, specifically the availability heuristic and the representativeness heuristic. The first emphasizes the most readily available causal forces since human beings are limited-capacity information processors (Alloy and Tabachnik, 1984). The latter traces explanations back to the forces which are more prevalent in the individuals' worldview (Lupfer and Layman, 1996). However, both scenarios acknowledge the role of the characteristics of the person (the observer, such as being affiliated to a religion and her religiosity), of the event (for example, how much the event could question the attributor's idea of a fair world or God's favor for him, in his eyes) and of the context of both (such as the salience of religious or non-religious stimuli in the contexts). In particular, psycho-social research depicts religiosity, or religious commitment (Jeynes, 2002), as deeply influencing the cause-seeking process, particularly in distinguishing natural from supernatural causes (Ritzema, 1979; DeBono *et al.*, 2020), since it acts as an observational lens through which the person will evaluate the world (Worthington *et al.*, 2003; Swimberghe *et al.*, 2011). Religiosity is defined as the centrality of religion in one's

own life, both as adherence to religious values and beliefs (cognitive/intra-personal dimension) and as participation in organized religious activities (behavioral/inter-personal dimension, such as church attendance) (Jeynes, 2002; Worthington *et al.*, 2003; Swimberghe *et al.*, 2011) and has a strong impact on multiple aspects of people's lives, regardless of the way it is measured (Huber and Huber, 2012). In the case of attributional styles, religiosity seems to perform such a strong effect to even contradict traditional attributive dynamics, such as the self-serving bias (Li *et al.*, 2012), that is holding the self-responsible for the desirable but not the undesirable outcomes (Shepperd *et al.*, 2008): The more people report religion to be central in their life, the more they attribute positive outcomes to God's intervention (and not, as expected, to themselves. Vonk and Pitzen, 2016). However, DeBono *et al.* (2020) correctly noted that past research on this topic has mostly used vignettes depicting hypothetical scenarios. Two of the main aims of this study consist in focusing on the various types of God's intervention and in verifying a possible relation between the centrality of religion in one's life and the attributions people make, considering a situation that they experience, that is being exposed to the COVID-19 contagion.

Causal Attributions, Religion and Health-Related Situations

The relevance of studying causal explanations, especially considering their behavioral implications, strongly emerges when it comes to health. Numerous studies show that health issues, characterized by threat and uncertainty, strongly stimulate a search for the cause, mainly when it makes sense to avoid a possible recurrence of the illness (Benyamini *et al.*, 2014), and the outcome of this search often shapes people's behavior in the health-disease continuum, i.e., from preventive or treatment point of view (Taylor *et al.*, 1984; Michela and Wood, 1986; Roesch and Weiner, 2001; Grayson *et al.*, 2014). For example, the perceived level of control over the causes of the disease appears to influence the patient's compliance with preventive behaviors (like vaccination or wearing face masks. Mo and Lau, 2015), therapeutic regimens and the number of relapses (Affleck *et al.*, 1987; Low *et al.*, 1993; Petrie *et al.*, 1996; Cooper *et al.*, 1999; Gump *et al.*, 2001; Weinman *et al.*, 2000; Niederdeppe, 2007). Several studies have found that precautionary behaviors, such as not smoking, regular physical exercise, and dental health, are more common among individuals with strong internal beliefs (Strickland, 1978; Norman *et al.*, 1997; Macgregor *et al.*, 1997). On the contrary, attributing illness to chance (fate but also genetic factors and environmental determinants beyond the individual's control) is often associated with unhealthy options of behaviors such as exercise, alcohol consumption, breakfast, fruit intake, fiber intake, and fat avoidance (Callaghan, 1998; Duffy, 1997; Steptoe and Wardle, 2001). Finally, it is worth noting how the attributive dimensions of the onset of the disease condition even the

attitude of healthcare personnel towards patients. Similarly to what happens in the case of helping behaviors in general (Weiner, 1995; Meyer and Mulherin, 1980), the perception of the individual's responsibility regarding the onset and management of the disease can influence the assistance given by doctors and nurses (Marteau and Riordan, 1992; Ogden and Knight, 1995; Schreiber, 2020).

When specifically talking about globally widespread health threats, literature has highlighted significant relations between causal explanations for the etiology of the illness and subsequent affective or behavioral outcomes. In broad terms, the framework seems to be quite the same as for other topics, being internal attributions associated with health behaviors more frequently than external attributions. Internal explanations, indeed, have been found to be related to greater use of preventive behaviors, like vaccinating, wearing face masks, or washing hands, but mainly when fear of contagion is extensively present (Karademas *et al.*, 2013; Lau *et al.*, 2010). Also in the case of other threats to health, such as Invasive Pneumococcal Diseases (IPD), considering that they can be controlled by existing treatments is significantly associated with the uptake of vaccination (Wang *et al.*, 2021). Conversely, Mo and Lau (2015), reporting the results of their study on causal attributions and the H1N1 pandemic, suggested that when internal causations involve emotions like anger or depressive mood, people are less likely to adopt preventive behaviors.

On the other hand, when a health crisis is considered outside the individuals' reach (because, for instance, it is attributed to an act of God), non-control attributions frequently occur, which have been found to be negatively associated with preventive health behaviors (such as vaccinating) (Olagoke *et al.*, 2021).

It is interesting to note that, in some African societies, people's classification of the cause of the pandemic illness (such as malaria, flu, or diabetes) may lead to different courses of treatment. 'Normal illness or 'illness of God' (which are considered part of normal human life) are mostly treated through 'biomedical medicine' or 'white man's medicine'. For 'out of order illness' or 'abnormal illness', on the other hand, which are believed to be caused by witchcraft and spirits, people often turn to traditional healers (Muela *et al.*, 2000; Tshabalala, 1997; Nguma, 2010).

Religion, defined as the enhancement of the impulse to transcendence in its dimensions of rituals and beliefs (Yuen, 2007), provides an optimal basis in a situation of sudden threat to health. "Health-related situations appear to be particularly significant for the study of religious attributions" (Pargament and Hahn, 1986. P. 193). For many people, a significant threat to their health can undermine the fulfillment of one of the basic needs of human nature, namely perceiving to live in an understandable, controllable world in which everyone gets what they deserve (Lerner, 1980). "Why? Why me?

Why now?". Religion provides a model that allows people to deal with challenging questions, integrate these questions into their lives, and to re-establish meaning and purpose in what happened (Yuen, 2007; Chiu *et al.*, 2004).

In conclusion, this study focuses on causal attributions made by an adult sample about a possible contagion by the SARS-CoV-2 virus. The main aim of this paper is to report the proportion of religious attributions made by the sample compared to non-religious attributions.

This objective regards both applicative implications and theoretical advancements. First, by considering the influence of identified causes of an event on behavior in general and on health behaviors in particular, this study aims to provide useful suggestions for interventions' design and implementation, helping guide the development of coping interventions and helping inform providers to appropriately address people's concerns related to a possible contagion. Secondly, even though literature has widely reported the importance of considering religious attributions made for events, there are few studies focused on this kind of attributions, and no studies, to our knowledge, have dealt with religious attributions concerning the SARS-CoV-2 pandemic.

Materials and Methods

From a methodological point of view, this exploratory study consists of descriptive survey research (Engelhart, 1972). Causal attribution was assessed using the technique of rating the extent to which each cause could contribute to contagion (Russell *et al.*, 1987), i.e., ranking them by hierarchically classifying the first, the second, and the third cause.

Religiosity was measured by using an item which, in the researchers' mind, condensed the centrality of Religion in respondents' life both from an intrapersonal and interpersonal point of view, without further lengthening the questionnaire. The question ("How important is religion in your life?") was expected to properly focus on a person's perception of the importance of Religion in her life, understood both as the introjection of her values/morals and the commitment in behaving according to her teachings (such as religious service attendance).

Initial analyses were exclusively descriptive; Chi-squared (χ^2) non-parametric statistical test was used to compare frequencies. A p-value of less than 0.05 was considered significant. Data were analyzed using IBM SPSS.

Research Tool

A semi-structured questionnaire consisting of 16 items was prepared for data collection. Questions were focused on the following areas.

Socio demographic area. In addition to standard socio-demographic information, the respondents were

asked to report also their religious affiliation and the strength of their religious faith and engagement: "Do you adhere to a religion?". If the answer was "yes", then the questions are "Which religion do you adhere to?" and "How important is religion in your life?" (5-point Likert scale, from not at all to very important). Respondents were grouped into 3 groups, depending on Religion's reported importance in their life: "Not or little important" (levels 1 and 2), "Quite important" (level 3), and "Very important" (levels 4 and 5).

The area on social representations of the pandemic. This area moved from the concept of representation proposed by Moscovici and Marková (1998) and data were collected according to the free association's method (Vergès, 1992).

The area on causal attributions: Questions belonging to this area were defined starting from a review of the literature on attributions and according to the results of a short pilot study in which the participants (about 100) were asked to identify the possible causes of contagion, in their opinion, for a generic person. Thirteen causes, independently categorized and chosen by two researchers (psychologists), were then presented to the participants in random order. The specific causes concerning religious attributions referred to God's will, God's love, and God's punishment. The introductory question and the set of items are listed below.

Introductory question: Why today, in Italy, does a person runs the risk of being infected with the SARS-CoV-2 Coronavirus?

- It's God's plan (DISDIV)
- It's because God loves her (AMODIV)
- God is punishing this person for her sins (PUNDIV)

Sample and Administration

Our snowball sample consisted of 575 participants. Respondents were allowed to suggest other persons who might also want to participate in the panel. These were then contacted and asked if they wanted to join

the study. This sampling technique was chosen due to the exploratory type of this study and the possibility of reaching participants with certain characteristics of interest for the study, such as religious affiliation and strength of religious faith and engagement.

The administration of the questionnaire took place between 13 and 27 April 2020. The researchers proposed the questionnaire to the respondents using the CASI technique and the Google Forms platform. Completing the questionnaire took an average of 10 min.

The sample was composed of 61% women and the average age was 46 years (range = 18-78 years, SD = 12.5 years). As for education, the most represented groups of respondents were degree and post-degree (43.3%) and high school qualification (31.5%). 79.7% of the interviewees reported adhering to a religion. 18,1% of the respondents rated the strength of their religious faith and engagement as poor (levels 1 and 2), whereas 53,2% rated Religion as very important in their life (levels 4 and 5). As for the territorial distribution of the participants, the numbers of the respondents in the groups located in the regions with a high, medium, and low incidence of contagion (respectively, >10,000, 10.000>x>4000 and <4000 cases) were very similar to each other (Ministry of Health, 2020).

Results

Table 1 shows the causes chosen by the respondents as the first, second, and third reasons, respectively, for contagion.

As data show, despite the high rate of people who report adhering to a religion (79,7%) and the number of persons who consider themselves as highly religious, respondents mostly attribute the reason for a possible contagion to non-religious causes. Religious attributions-God's will, God's love, and God's punishment, taken together-struggle to reach 1% of the total number of the attributions made. This considered, it seemed unnecessary for authors to further differentiate religious attributions to analyze them separately.

Table 1: Sars-Cov-2 infection and causal attributions

		Frequency	Valid percentage
First reason	Non-religious attributions	558	99,5
	Religious attributions	3	0,5
	Total	561	100,0
Missing		14	
Second reason	Non-religious attributions	557	99,1
	Religious attributions	5	0,9
	Total	562	100,0
Missing		13	
Third reason	Non-religious attributions	546	99,5
	Religious attributions	3	0,5
	Total	549	100,0
Missing		26	
	Total	575	

Reported importance of Religion in one's own life seems not to be associated with religious causal attributions: Data show that people seem to rarely choose religious attributions also despite the level of their religiosity (First reason: $n = 462$; $\chi^2 = .887$; $df = 2$; $p = 0,642$. Second reason: $n = 460$; $\chi^2 = 2.188$; $df = 2$; $p = 0,335$. Third reason: $n = 450$; $\chi^2 = 3.047$; $df = 2$; $p = 0,218$).

Discussion

Findings show that religious causal attributions have been chosen very rarely in the case of SARS-Cov-2 infection, even regardless of the perceived centrality of Religion in one's life. These results seem to disagree especially with the theoretical premise made in the introduction of the article which illustrates how religious attributions are frequent in health situations (Pargament and Hahn, 1986), especially in the case of significant and unexpected events (Roesch and Weiner, 2001; Chiu *et al.*, 2004; Grayson *et al.*, 2014; Stiensmeier-Pelster and Heckhausen, 2018; Graham, 2020). Some explanations for these results can be given. These explanations will focus more on functional aspects of religious attributions (functional to the idea of a "just" world, to the controllability of the world or self-esteem), not taking into consideration, instead, all those cases in which the attribution is linked to a "genuine" faith that is not functional to the conscious/unconscious satisfaction of basic psychological needs. The first hypothesis relates to one of the main functions of religious attribution, namely the protection of the idea of living in a just, fair world, in which everybody sooner or later get what they deserve (Bulman and Wortman, 1977; Pargament and Hahn, 1986; Hunt, 2000; Bulut, 2021). This hypothesis lies in the "democratic" dynamic with which the contagion spread. The SARS-CoV-2 contagion has affected people from all backgrounds (cultural, social, economic), both ordinary people and prominent personalities in the political, institutional, cultural, or sports fields (Il Riformista, 2020), turning out to be fatal for many of them. No protection or treatment techniques became available to some subjects and not to others, therefore creating privileges or discrimination. Consequently, the contagion would have been perceived as a transversal and generalized risk and not as a threat to the conception of a just world owned by the individual. In this regard, it could be relevant to note the difference between a dynamic of contagion that possesses these characteristics and other negative medical events which affect the individual more precisely (such as the health consequences of an accident. Bulman and Wortman, 1977) and which traditionally produce a clear inclination towards religious attributions.

This transversal characteristic of the contagion (and of its consequences) also undermines another aspect that elsewhere seems to encourage the adoption of religious explanations by the individual, namely that the divine intervention is on him and not on other people (being functional, for example, to overcoming an individual's

weakness. Blaine and Crocker, 1995). A second possible explanation for the scarcity of religious attributions that emerged in this study could refer hence to the lack of gratification linked to the sense of uniqueness (Bulman and Wortman, 1977), which would then determine a greater choice of secular attributions.

Finally, a possible explanation of the results of the study could relate to the quantity and capillarity of the information with which the media "flooded" people, somewhat responding to their need for an explanation of such a disruptive and unexpected event as the Sars-Cov-2 pandemic (Roesch and Weiner, 2001; Grayson *et al.*, 2014; Stiensmeier-Pelster and Heckhausen, 2018; Graham, 2020). It could be then hypothesized that such a volume of communication by politicians and health technicians (primarily virologists, immunologists, and epidemiologists) on the progress of the infection, on the prevention measures to be adopted, on the considerable support of the institutions in finding a vaccine, helped to reassure people, offering them the prospect of a not too remote possibility of control over the pandemic. The feeling of controllability of the event, together with the overall abundance of information, could have influenced the perception of insufficiency and unavailability of "natural" explanations, decreasing both the latter and, consequently, the need to resort to explanations of a religious nature or God's overall plan (Blaine and Crocker, 1995).

In these regards, it would be useful to consider, however, the combined effect of the state of deep apprehension fuelled by the huge presence of the topic "pandemic" on the media (both "new" and traditional ones. Krawczyk *et al.*, 2021; Pearman *et al.*, 2021), and the exponentially increased request for related contents: In the weeks immediately preceding the data collection of this study, the word "coronavirus" was found to be the most searched on Google (Google, 2020) and the use of 24-h news channels almost tripled (GfK, 2020). Especially bearing in mind the strong influence that media information had on people's opinions about the pandemic, its origins, and the way it has been managed (Pearman *et al.*, 2021; Hart *et al.*, 2020; Bolsen *et al.*, 2020), one important point for reflection, in the authors' opinion, relates to the quality and quantity of the information provided to people by media. In addition to the risks of an infodemic (Zarocostas, 2020), the overwhelming amount of information ("Tsunami of information". Ivi p. 676. Krawczyk *et al.*, 2021) has presumably caused people to struggle to achieve the necessary comfort to properly process the information encountered and to coherently slot them in their own meaning-belief system. This could at least partly explain the lacking use of religious attributions, even in the case of high religiosity, and could also suggest an improvement in information providing.

In the previous paragraph, several explanations of the

slight preference for religious attributions reported by respondents were provided. The most problematic issue seems to be related to the huge amount of information which may have hindered the regular course of information processing and the subsequent attribution of causes to the events. A greater strength in providing more selected and reliable information of such nature that allows people to better ponder and meditate on could help to cope with this issue. At this aim, an effective strategy, in the authors' opinion, should primarily involve media managers but also politicians and technicians: It pays to remember that, initially, several Italian politicians portrayed COVID-19 as the normal flu, hence not adequately warning against contagious behaviors. The misinformation widely spread through social media contributed to producing ambiguity and incoherence which presumably led to heightened feelings of uncontrollability and anxiety, then hindering information processing (Garfin *et al.*, 2020). This is even more so when facing an invisible threat, such as a virus. A communication strategy is suggested in which trusted community agents such as politicians, technicians, and healthcare providers strictly cooperate with media managers and media technicians to effectively share advice, guidelines, and information by quickly conveying urgent information, accurately selecting essential one, while simultaneously tempering untoward media overexposure.

Social media could play a unique role in this integrated model since their impact on the population's health knowledge and behavior emerged also in various health emergencies and other natural catastrophes (Velasco *et al.*, 2014; Giustini *et al.*, 2018; Freberg *et al.*, 2013). Social media widen people's access to information on a wide range of health issues, regardless of their education, age, and race or ethnicity. Although most government agencies often tend to consider social media as a complementary channel for e-disclosure (Neely and Collins, 2018), rather than a tool to promote citizen-government collaboration and engagement, social media allow people to share their experiences and peer-to-peer discuss in a way not enabled by traditional websites. This promotes participation, and empowerment and helps solve problems collaboratively due to the formidable capacity of inter-connectivity of social media.

Firstly, information management which promotes and enhances the dialogic loop (Seltzer and Mitrook, 2007), that is shared decision-making, mutual understanding, and co-creation, may improve people's engagement and their willingness to actively share and respond to content posted by community agencies.

Then, an accurate and timely information demand analysis may be suggested, possibly using AI, to properly intercept changeable people's need for information. Customized demand satisfaction would favor noticeable benefits such as enhancing people's trust in community

agencies as reliable sources of crisis information.

Although many health regulatory agencies already use social media platforms individually to achieve monitoring, protect, and improve the health of people, it seems important to further strengthen cooperation between these subjects and social media, exploiting the latter's ability to often outperform official channels in spreading information, particularly in promptness (Al-Dmour *et al.*, 2020; Carter, 2014). A greater effort in this task would carry some significant benefits, while necessarily being aware of the risk of the spread of misinformation (Koulolias *et al.*, 2018), with the pejorative prefix "mis" to indicate bad quality information, contradictory information, or overabundant information.

Study Limitations

The adopted theoretical perspective of this exploratory study represents a well-defined field of interest, but this also poses some limitations. First, limitations concern the snowball sampling method. The sample often results to be fairly homogeneous because initially recruited subjects tend to refer to demographically similar people (Sadler *et al.*, 2010). In this study it concerned, for example, the qualification of the participants. Similarly, it would be appropriate to reflect on other sample characteristics due to a possible over-representation of those participants who have numerous social contacts. Finally, enriching the study from a conceptual point of view, including, for example, a reflection on attributive styles, would lead to a more complex analysis, hence improving the accuracy of the conclusions.

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Author's Contributions

All authors equally contributed to this study.

Ethics

This article is original and contains unpublished material. All of the other authors have read and approved the manuscript. This article contains study with human participants. All procedures performed in this study were in accordance with APA's ethical standards since

participants were informed about the purposes of the research, expected duration and procedures of answering the questionnaire. All the participants were also informed about the right to stop the compilation at any time at will and about guarantees for confidentiality. Participants were also allowed to contact authors for any questions.

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