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RESEARCH ARTICLE

The COVID-19 "First Lockdown" Experience in Italy: The Role of Hope and Optimism and Their Impact on Psychological Well-Being and Risk Perception

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Introduction: The present study investigates the lockdown experience in Italy during the COVID-19 pandemic within a positive psychology framework, focusing on the protective role of the positive anticipatory states: optimism and hope.
Aims: The aims were to verify if and how optimism and hope influenced people's psychological wellbeing and their risk perception of the situation, addressing how individuals portrayed the present and how they imagined the future after the lockdown.
Method: Based on the differences between the two constructs, as from the literature, the hypothesis is that individuals with higher levels of optimism would report positive but hazy future scenarios and lower levels of risk perception about the future. Therefore 1,471 participants received an online survey, which was administered as a set of questionnaires investigating three areas: demographic information, psychological wellbeing, and risk of contagion perception.
Results: The results showed that positive anticipatory states are positively associated with psychological wellbeing. Moreover, the results highlighted the relationship between optimism and risk perception regarding future scenarios.
Conclusions: The presented predictive model demonstrated that positive anticipatory states, sex, and age had a central role in determining the psychological wellbeing during the first wave of the pandemic events in Italy. Practical implications are discussed.

Keywords: hope, optimism, wellbeing, risk perception, COVID-19

Introduction

The COVID-19 Pandemic and the Lockdown

The 2020 Coronavirus (COVID-19) pandemic quickly developed from being a local crisis into a severe global health and economic crisis, affecting both the physical and psychological wellbeing of humanity with a currently unclear time horizon (Counted et al., 2022; Fore, 2020; Rajkumar, 2020).

Assuming a medical and sociological perspective, the COVID-19 pandemic can be considered a unique stressor incomparable to any previous traumatic events, such as tsunamis or earthquakes (Morganstein & Ursano, 2020). Indeed, while in the cited events the traumatic factors generally affected a specific and limited area for a circumscriptive time, and people knew they had the possibility to avoid the event or escape from it, in the case of

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the COVID-19 pandemic, the risk of being infected exists everywhere and everyone could potentially be contagious (Giallonardo et al., 2020), resulting in perceiving a boundless range of possibly risky situations.

Analysing those past events (Brooks et al., 2020) when humanity had to face pandemics, authorities often reported that adopting quarantine served as the best and most effective solution to contain an infection. The term *quarantine* – used for the first time in Venice, Italy, with regard to the Black Death – describes the isolation of people who had potentially been exposed to the contagious disease by distancing them from the rest of the active population, reducing their possibility to move about and therefore meet other people, so as to limit the risk of them spreading the infection. Before the occurrence of COVID-19, psychological literature regarding the quarantine experience remained scant. The main contributions come from the analysis of severe acute respiratory syndrome (SARS) in 2003, in which citywide quarantines had been imposed in different areas of China and Canada, and from the Ebola outbreak in 2014 that required the quarantine of entire villages in many West African countries.

The common aspect of these different situations is the fact that quarantine, physical distancing, and isolation had been established by national and international institutions in order to reduce the viral spread. Similarly, quarantine also remained the main solution adopted to cope with the COVID-19 pandemic.

In Italy – the second country after China hit by the virus, and where the pandemic exploded and dramatically increased abruptly and unexpectedly – the government declared the status of lockdown nationwide from March 8 until May 4, 2020. This lockdown came with prescriptions of specific containment and quarantine measures, such as the interdiction of all public meetings and strict movement restrictions. In more detail, the so-called "first lockdown" in Italy was characterised by the restriction of all mobility – except for basic necessities and work that could not be done remotely and that authorities considered fundamental for community and health circumstances – and the temporary closure of non-essential activities and businesses. Authorities closed schools and universities; teaching was done via distance learning, working from home was strongly recommended, and all meetings, both for personal (family and friends) and professional reasons, were forbidden.

Lockdown constitutes a very unnatural and disruptive condition, and recent studies emphasize how frustration, loneliness, and worrying about the future are proved to represent risk factors for several mental disorders, including anxiety, anger and confusion, affective disorders, post-traumatic stress symptoms, and psychoses (Brooks et al., 2020; Fore, 2020; Giallonardo et al., 2020). Brooks et al. (2020) identified several major stressors as risk factors for psychological diseases, specifically: longer quarantine duration, infection fears, frustration, boredom, inadequate supplies, inadequate information, financial loss, and stigma. More generally, surveyed people who had been quarantined reported a high prevalence of psychological distress and disease symptoms. Namely, people reported to have experienced the fear of falling sick or dying, increased levels of self-blame, depression, and the feeling of helplessness and despair (Fiorillo & Gorwood, 2020).

Among the various aspects of the subjective experience affected by the lockdown condition, the human perception of time deserves specific attention. Time perception is not just a physical phenomenon, but it stands open to psychological interpretation (Drake et al., 2008). People are endowed with a natural ability to accurately estimate time, since it is vital for them from the adaptive viewpoint (Droit-Volet, 2013); nonetheless, people may misjudge the passage of time, due to different variables, such as emotion (Droit-Volet & Gil, 2009). From the time dimension point of view, some peculiarities characterize the lockdown condition. First of all, the impossibility of maintaining people's own daily routines due to the suspension or alteration of many activities and formats (some jobs were temporarily suspended and many were converted into the work-from-home modality, the same as with school activities; most of the social and leisure activities were stopped or moved online). Many people, particularly in urban areas, had limited or no access to the external environment. Technology mediated most of people's interactions, while at the same time face-to-face interactions within the family environment increased dramatically compared to the previous routines. For all these described reasons, during the lockdown, people had to face the challenge of restructuring their daily routines within the in-house environment, with no contact if mediated with the external natural and social environment. Literature shows that such challenges represent a risk factor for mental diseases such as depression (Choi et al., 2020; Kong, 2019); several studies' research reported that temporal frames have implications as protective factors for psychological wellbeing: evidence exists of positive relationships between present orientation and general happiness (Kammann & Flett, 1983), present orientation and life satisfaction (Diener et al., 1985), temporal routines and optimism (Lennings, 2000) and future perspective was found positively associated with subjective wellbeing (Zaleski et al., 2001). Moreover, research showed that in everyday life, time perception is characterized by fluctuations according to emotional states (Droit-Volet, 2013). For example, depression is linked with experiencing a slowing down of time, such that "a day feels like a year" (Ratcliffe, 2012, p.1). In healthy people too, the emotional flavor of the moment commonly alters the sense of time: time seems to fly when we are comfortable and having fun; it drags when we are bored and uncomfortable. The "internal clock" models of time perception have highlighted that the interaction of

emotional arousal and valence produces speedups and slowdowns in the clock speed (Droit-Volet & Meck, 2007). Hence, in a situation as unique as the COVID lockdowns, featured by various and contrasting emotions and by the disruption of daily routines, individuals' relationship with time necessarily underwent a deep reorganization.

Most of the psychological research concerning the COVID-19 pandemic has focused on the problems posed to personal wellbeing created by the lockdown experience, at the same time leaving unexplored the possible variables protective of wellbeing during the lockdown period (Giallonardo et al., 2020). Conversely, analyzing the possible role of protective factors can provide useful data that both decision makers and mental health professionals can utilize to deal successfully with a stressful situation, such as a lockdown period. Literature reviews indicate that researchers have conducted several studies on the role of resilience (Giallonardo et al., 2020), while there remains a lack of studies focusing on the positive anticipatory states, particularly hope and optimism. Recent studies investigate the role of hope, wellbeing, and religious coping in Colombia and South Africa (Counted et al., 2022), as well as the relationships between hope and resilience in families (Walsh, 2020) and hope and anxiety (Gallagher et al., 2021). Studies concerning optimism during pandemic events occur less frequently. Other studies focused their attention on the relationships between optimism and positive emotions (Leslie-Miller et al., 2021) and optimism and risk perception (Dolinski et al., 2020; Gassen et al., 2021; Kuper-Smith et al., 2021). No studies exist that investigate the positive anticipatory states and their relationships to wellbeing or risk and safety perception during the first experience of lockdown. The present study addresses such a lack of research, focusing on the influence of hope and optimism as protective factors during the lockdown experience.

Hope and Optimism: Their Impact on Psychological Wellbeing and Risk Perception

According to a positive psychology paradigm, hope and optimism bear a central role in determining personal wellbeing regarding expectations about the future, with a protective role in the present (Satici, 2016). Hope and optimism are therefore defined as positive anticipatory states (Fowler et al., 2017).

According to Snyder (Snyder et al., 1991; Snyder 2000), hope constitutes a cognitive state that helps people achieve their goals. To experience hope, therefore, the individual needs a goal: something not immediately available in the present yet something they aspire to achieve in the future, even though such achievement remains uncertain (Lazarus, 1999).

According to Snyder's work, the essential components of hope are *agency* and *pathways*. Within this framework, *agency* refers to a motivational component; it reflects the ability to imagine defined pathways toward a person's goals and preserve such images during the journey. Snyder (2000) defines agency or agency thoughts as the motivational component to propel people along their imagined routes to goals. According to Snyder, *agency* reflects the *person's perception* that he or she can begin the movement along their imagined pathways to goals. Note that within this framework, *agency* can also reflect one's appraisal of the capability or the ability to persevere along the path to reach the goal. Pathways can be considered as the ability to plan the journey to the desired goals. In more detail: the mindset of hope stands characterized by having a goal and the ability to plan a way to achieve that goal. At the same time, when driven by hope, people feel motivated to follow their plans and they are able to cope with obstacles on their way to the goal (Snyder et al., 1991; Snyder, 2000). In brief, hope fosters an accurate and detailed representation of the steps needed to achieve the goal and the possible risks and obstacles on the pathway.

A strong link between hope and wellbeing has been highlighted, since hope is proved to be a cognitive set that helps people achieve their goals in the future (Snyder et al., 1991; Snyder, 2000). Literature suggests that people who report a high level of hope and the expectation to be successful in achieving their goals are more likely to experience a state of wellbeing (Erez & Isen, 2002). Lazarus and Launier (1978) demonstrated that hopeful people are more likely to perceive stressful situations as a challenge, and this mindset supports them in reducing stress levels. On such a basis, the disposition for hope is also considered as a protective factor in chronic anxiety (Michael, 2000). Noticeably, hope proved to be negatively associated with stress and negative emotions, as well. For example, a work by Glass (2009) examined the emotional reactions exhibited by the survivors of Hurricane Katrina, providing evidence that experiencing hope moderated the relationship between avoidant coping and general psychological distress. Gilman et al. (2012) conducted a study with 164 veterans diagnosed with post-traumatic stress disorder (PTSD). Their results revealed that higher levels of hope were related to decreased PTSD and depression symptoms, thus supporting the idea that hope constitutes a nonspecific device towards symptom reduction. In general, hope demonstrates a protective role during a health crisis: people with high levels of hope tend to be more accepting of the situation (Miller-Smedema et al., 2010).

Optimism can be defined as a positive attitude towards the future. According to an evolutionary perspective, Tiger (1979) considers optimism as a mechanism of natural selection based on the ability to develop positive expectations towards the future – a powerful tool in helping people manage difficulties in the present.

The adaptive role of optimism is also theorised by Taylor (1989), who deems optimism to be a cognitive bias named *positive illusion*. In Taylor's view, the individuals make use of positive illusions to cope with future scenarios featuring ambiguous, inadequate, or emotionally complex sets of information. Hence, optimism has an adaptive role because it promotes the ability to be careful, self-confident, and persistent while facing difficulties, and it fosters a creative and proactive attitude in pursuing the desired goals, even though it does not support accurate and defined representations of future scenarios nor of the risk factors. In brief, optimism can be seen as a powerful promoter, able to mobilise the energy that supports the individual in facing a challenge (Taylor, 1989). Dispositional optimism has a positive effect on wellbeing: optimistic people report better physical and mental health (Scheier et al., 1994). Indeed, optimistic people report lower levels of cortisol, higher levels of antioxidants, and better cardiac functionality (Räikkönen & Matthews, 2008; Rozanski et al., 2019).

When promoting an unrealistic vision on the world, optimism could lead to negative consequences, namely optimistic bias (Jefferson et al., 2017; Sharot, 2011; Shepped et al., 2015). The definition "optimistic bias" refers to the mistakes that people make when they reason about the future, overestimating the possibility that positive events will occur and underestimating the possibility of negative events. This kind of illusion – and the relative illusion of invulnerability – are strongly connected with the attitude of assuming risks in the health domain and the consequent risky behaviors (Van Der Pligt, 1996). Unrealistic optimism also occurs when individuals falsely believe that their personal outcomes will be more favorable than others' in the same risk category (Gassen et al., 2021). Several studies highlighted that the phenomenon of unrealistic optimism is widespread, applying to a variety of situations from health behaviours to stock market trading (Makridakis & Moleskis, 2015; Reyes-Velázquez & Sealey-Potts, 2015). In particular, in the context of health risk behaviours, the optimistic bias may lead to behaviors that contribute to morbidity and mortality and to complacency (Jefferson, 2017). Likewise, in the pandemic context, optimism about COVID-19 might have two different effects on the population (Kuper-Smith et al., 2021): adaptive effects (e.g., protection from detrimental levels of anxiety) or maladaptive consequences; e.g., defiance of regulations and accelerating the pandemic's spread (Kuper-Smith et al., 2021). For example, recent studies conducted during the pandemic pointed out that men remained unrealistically optimistic about the likelihood of their SARS-CoV-2 infection, despite having a higher risk of infection and mortality from COVID-19 than women (Dolinski et al., 2020). Optimistic bias may therefore provide some short-term psychological benefits, such as protecting from overwhelming anxiety and consequent paralysis, as well as fostering resilience. On the other hand, unrealistic optimism may lead to improper assessment of hazardous situations, in particular when individuals face novel sources (or scales) of risk, such as a global pandemic (Gassen et al., 2021).

To our knowledge, research about the influence of hope on risk perception is scant and results are often inconsistent. An interesting contribution comes from Ojala's work (2012), in which a distinction is drawn between constructive hope and hope based on denial. Constructive hope that is based on trust in others and on positive reappraisal may increase behaviors aimed at mitigating risks, while denial may drive one to underestimate risks. Research in the field of pro-environmental behaviour illustrated that hope exerts an important influence on risk perception (MacInnis & Mello, 2005) and in particular suggested that hope may lead to a decrease in risk perception. Hornsey and Fielding (2016) found that messages of hope based on partial information about the progress made in climate change mitigation decrease risk perceptions and distress about the climate, which in turn may reduce motivation for pro-environmental behavior. In the field of economic behavior, Barros and Botelho (2012) found that higher levels of hope predicted an increase in the propensity to accept the mortgage loan and to become indebted, independently of actual risks; however, a first study suggested that hope may lead to a decrease in risk perception, which, however, the second study did not confirm.

Despite that both optimism and hope refer to the future and its positive representation, as Bruininks and Howington (2019) suggest, hope and optimism should be considered as different constructs. While both are addressed to the future (Lazarus, 1999; Seligman, 1990; Snyder, 2000), yet different emotions elicit them (Carver et al., 2010). The emotional stimuli for hope are uncertain and so is the possibility to achieve the desired goal (Lazarus, 1999; Snyder et al., 1991; Snyder, 2000). Instead, optimism has – at its birth – trust and confidence that in the future, things will be fine (Carver et al., 2010; Taylor, 1989; Tiger, 1979). Furthermore, both hope and optimism carry, though differently, a role in motivation: i.e., hope drives individuals to plan their actions so as to successfully achieve their goals whereas optimism lacks such a direct connection to action-planning. Those similarities and differences between hope and optimism could impact risk perception and the ability to evaluate hazard situations (Slovic, 1987). Slovic (2001) highlighted risk's subjective and value-laden nature. More specifically, in particular regarding the context of health and safety, the concept of risk involves value judgments that reflect much more than the raw probability and consequences of an event's occurrence and are rather affected by the representation of the future and the consequent action plans.

Starting thus from the outlined theoretical framework, the present study aims to investigate the influence of hope and optimism on psychological wellbeing and risk perception during the COVID-19 related lockdown experience. The survey was administered during the sixth week of the first lockdown period (11 to 20 April 2020).

Namely, the research presented here aims to explore different aspects related to psychological wellbeing and risk perception in two different time scenarios: the present moment and the future. Regarding the present situation, researchers examined subjective wellbeing, challenges in dealing with time, and risk perception. Regarding the future, they examined risk perception.

According to the literature-highlighted differences between the hope and optimism outgrowths, our hypotheses are:

– Positive anticipatory states influence psychological wellbeing and the challenge to deal with time during the lockdown experience (Satici, 2016). Our expectation is that higher levels of both hope and optimism are related to higher levels of psychological wellbeing (Erez & Isen, 2002; Lazarus & Launier, 1978; Scheier et al., 1994).
– Positive anticipatory states influence risk perception about the present and future scenarios. Our expectation holds that individuals reporting higher levels of optimism hold a lower level of risk perception and a more positive – but hazy – representation of the future (Scheier & Carver, 1985) (See the optimistic bias, Sharot, 2011). Conversely, individuals reporting higher levels of hope (as defined by Snyder et al., 1991, and by Ojala, 2012, when distinguishing constructive hope) perform a more accurate risk analysis and hold a more defined representation of future scenarios based on their goals' specificity (Sharot, 2011; Snyder et al., 1991) and on positive reappraisal strategies (Ojala, 2012). More specifically, in the present study we focused on the risk of contagion perception.
– Moreover, we are interested in investigating the relationship between psychological wellbeing, risk perception, and the challenges in dealing with time during the lockdown experience. Our expectation holds that higher levels of psychological wellbeing are related to lower levels of challenges in dealing with time and risk perception.

Table 1. Socio-Demographic Information for the Sample

Socio-demographic information	
Sex (%)	
Female	1051 (71.4%)
Male	418 (28.5%)
Age (%)	
	Min = 18; Max =81 40.43 ± 13.19
18–29	396 (27.0%)
30–39	361 (24.6%)
40–49	298 (20.3%)
50–69	389 (26.5%)
70–81	22 (1.5%)
Regions	
Lombardy	724 (49.2%)
Other regions with high levels of contagion and deaths	342 (23.2%)
Other regions	405 (27.5%)
Did you contract COVID-19? (%)	
Yes	72 (7.0%)
No	688 (66.6%)
I don't know	273 (26.4%)
COVID-19 Diagnosis (%)	
Yes	13 (.9%)
No	326 (22.2%)
I'm waiting for results	3 (.2%)
I know people who developed COVID-19 (%)	
Yes	959 (65.2%)
No	512 (34.8%)

Methods

Sample

Participants were recruited via an announcement published on popular social networks (Facebook, Instagram, and LinkedIn), which advertized an invitation to participate in a survey about the lockdown experience. Prior to accessing the survey, participants had to provide their informed consent for data treatment of this research scope only, according to the General Data Protection Regulation (GDPR n.679/2016).

A total of 1,471 Italian participants (women = 1,051; 71.5%) completed the survey. The sample characteristics are reported in Table 1. Inclusion criteria required participants to be at least 18 years old (M = 40.43, DS = 13.19) and to be spending the COVID-19 lockdown in Italy. Of the respondents, 49.2% were from Lombardy, the region in Italy hardest hit by COVID-19 regarding contagion and death rates.

Instruments

All the participants completed a set of questionnaires designed to investigate five areas:

1. *Social and demographic information*
2. *Positive anticipatory states*: The *Adult Hope Scale* (Snyder et al., 1991) and the *Life Orientation Test – Revised* (LOT-R) (Scheier et al., 1994) were administered.
   a. *The Adult Hope Scale* remains the most common measure of hope in literature (Fowler et al., 2017). According to Bryant and Cvengros (2004), much evidence supports the construct and external validity of this scale. It is composed of 12 items organised in two subscales: agency (four items) and pathways (four items). The remaining items are fillers. The respondents are asked to give their answers on a scale from 1 to 4, with 1 corresponding to "definitely false" and 4 to "definitely true".
   b. The LOT-R (Scheier et al., 1994) is considered the most reliable and valid measure of dispositional optimism. The LOT-R is composed of ten items, evaluated on a 5-point Likert scale from "strongly agree" to "strongly disagree" (Scheier et al.,1994).
3. *Psychological wellbeing*
   a. To obtain a global measure of wellbeing, the *Psychological Wellbeing Scale* (short version) was used (Ryff & Keyes, 1995), which provides a trait view of personal wellbeing. The scale, composed of 18 items divided into six different subscales, has three items in each subscale: self-acceptance, positive relationships with others, autonomy, environmental mastery, purpose in life and personal growth. The respondents were asked to provide their answers on a six-point Likert scale.
   b. *Challenges in dealing with time* (Likert scale from 0 "totally disagree" to 7 "totally agree", $\alpha = .817$). Since, to our knowledge, there are no scales in literature created to grasp the specific experience of time perception and management during a lockdown, we designed an ad hoc pool of items, aiming to grasp how people felt about the flow of time and how they managed their time during the lockdown period. Inspired by the work of Drake et al. (2008), in the present work, we chose to consider the time perspective as a central variable during the lockdown. The overall score of this scale was calculated adding all the items. The items were: It seems to me that this time doesn't ever pass. I live this time like it doesn't pass. I feel the mastery of my time. It seems to me that the days are equal to one another. It seems to me that I don't have enough time to do everything. I feel petrified in this time. It seems like I have more time. I believe that time passes faster than before. I check the calendar more often than before. I'm frozen in this time. It seems that I have more time available. I feel how time passes with the help of the activities done. I often check what time it is. I live this time as an opportunity. I live in time still thinking about something that happened before this. I feel that I live in a suspended time. I remember easily which day of the week we are in. I feel like I am trapped in this time. I live in this time waiting for what will happen later.
4. *Risk of contagion perception:* To measure the risk of being infected perception, we created a pool of items investigating such risk perception both in the present (Likert scale from 0 to 7, with 0 = no perceived risk and 7 = high perceived risk, $\alpha = .800$) and in the future (Likert scale from 0 to 7, $\alpha = .898$), with specific regard to the risks perceived in relation to possible COVID-19 contagion during various daily routines. We calculated the overall score of this scale by adding all the items. The items consisted of: go shopping, go walking or running alone, sharing space with unknown people (e.g., standing in line at post office, supermarket, pharmacy, etc.); attend crowded places, not having the opportunity to wash/disinfect your hands often; take public transport; shake hands with someone you know little about and attend the hospital.

Moreover, a second pool of items was purposely created (Likert scale from 0 to 7, $\alpha = .918$) to investigate when people thought they would regain a feeling of safety in the future. This scale, named "safety perception", comprises three subscales: physical presence ($\alpha = .836$) – that is, the possibility to meet people in person – sociality ($\alpha = .894$), and stigma about COVID-19 ($\alpha = .699$). We calculated the scoring by averaging all the items.

The physical presence and sociality areas have been mostly affected by the restrictive measures to contain COVID-19. Logie and Turan (2020) hypothesise that in the case of COVID-19, stigma can trigger acts of discrimination and mistreatment, underestimation of community norms, negative perspectives towards specific groups, and anticipated stigma towards what will happen. For this reason, items like "how long will it take for you to feel safe again when appearing in public with symptoms like a fever or cough" or "… when coming into contact with people who had the COVID-19" were included.

The items included: shake hands with someone, celebrate a degree, wedding, birthday and so on; have contact with old people or vulnerable people, go to a concert or the stadium; hug someone that is not in quarantine with

you; have contact with people without a facial mask; go to the cinema or theater; go to the gym; have contact with people displaying symptoms like a cough or fever; have contact with someone who had COVID-19; show yourself in public with symptoms like a cough or fever; go to a public space without a facial mask; talk about people who you know had COVID-19.

Table 2. Descriptive Statistics of the Scales Included in the Presented Study

Scale	*M*	*SD*	α
The Adult Hope Scale	24.48	3.57	.588
LOT-R (Optimism)	14.90	5.10	.780
Psychological Wellbeing Scale	69.55	8.00	.566
Challenges in dealing with time	50.94	20.22	.817
Risk of contagion perception in the present	43.47	7.47	.800
Risk of contagion perception in the future	37.46	10.35	.898
Safety_physical presence	2.85	0.97	.836
Safety_sociality	3.22	0.83	.894
Safety_stigma	3.08	0.84	.699

Procedure

The survey was administered during the sixth week of the first lockdown (11 to 20 April 2020). The questionnaire was implemented on Qualtrics and spread through social networks (mainly Facebook, but LinkedIn and Instagram, as well). Respondents took part in the research voluntarily. Before accessing the questionnaires, participants had to read the study presentation reporting the aims of the research and the anticipated procedures for data treatment and give their informed consent.

Data Analysis

A statistical analysis was performed through Excel and SPSS. A correlation analysis and a multiple linear regression analysis were run.

Results

We performed a correlation analysis to investigate the relationships between positive anticipatory states (hope and optimism), psychological wellbeing, challenges in dealing with time, risk of contagion perception, safety perception, sex, and age (see Table 3). The results showed a significant correlation between hope and psychological wellbeing (r = .569, p =< .001) and between optimism and psychological wellbeing (r = .425, p = <.001). In more detail, considering the two components of hope separately, the results highlighted that higher levels of agency were associated with higher levels of psychological wellbeing (r = .541, p = <.001).

Correlation analysis showed that positive anticipatory states were inversely correlated with sex at a significant level: hope and sex (r = -.081; p < .001), agency (r = -.054; p < .05) and pathways (r = -.092; p < .001), optimism (r = -.081, p < .001). This means that men reported higher levels of positive anticipatory states than women did. The sex variable was coded as follows: 1 = male, 2 = female. Risk of contagion both in the present (r = -.232, p < .001) and in the future (r = .215, p < .001) showed a significant relationship with sex. Men reported higher levels of perceived risk than women in the present, conversely, women reported higher levels of perceived risk than men in the future. Similarly, the relationships between the subscale of safety and sex were significant: physical presence (r = .019; p < .001); sociality (r = .207, p < .001) and stigma (r = .241; p < .001). Also challenges in dealing with time (r = .007, p < .05) and psychological wellbeing (r = .-088, p < .001) showed a significant association with sex: men reported lower levels of challenge in dealing with time and higher levels of psychological wellbeing than did women. Correlation analysis didn't highlight any relationship between sex and age.

The correlation between positive anticipatory states and age proved significant: older people reported higher scores for hope (r = .122; p < .001), agency (r = .083; p < .05) and pathways (r = .137; p < .001), optimism (r =

Table 3. Overview of the Correlations Between the Variables Considered in the Study: Sex, Age, Psychological Wellbeing, Hope, Agency, Pathways, Optimism, Challenges in Dealing with Time, Risk of Contagion Perception in the Present and in the Future, Safety-Physical Presence, Sociality, and Stigma

	Safety_ stigma	Safet_ sociality	Safety_ physical presence	Risk of contagion perception in the future	Risk of contagion perception in the present	Challenges in dealing with time	Optimism	Hope	Hope_ Agency	Hope_pathways	Age	Sex	Psychological wellbeing
Psychological wellbeing	−.134**	−.094**	−.097**	−.074*	.007	-.329**	.425**	.569**	.541**	.468**	−.054*	−.088**	1
Sex	.241**	.207**	.190**	.215**	.232**	.070*	−.081**	−.081**	−.054*	−.092**	−.024	1	
Age	.192**	.192**	.308**	.151**	.095**	-.205**	.209**	.122**	.083**	.137**	1		
Hope_pathways	−.061**	−.062**	−.012	−.007	.025	-.309**	.467**	.880**	.585**	1			
Hope_Agency	−.055*	−.050*	−.016**	.018	.039	−.278**	.431**	.900**	1				
Hope	−.065*	−.063*	−.016	.006	.036	−.329**	.503**	1					
Optimism	−.080**	−.069*	−.036	−.062*	−.042	−.405**	1						
Challenges in dealing with time	.129**	.061*	.042	.074*	.054*	1							
Risk of contagion perception in the present	.455**	.463**	.455**	.651**	1								
Risk of contagion perception in the future	.458**	.475**	.471**	1									
Safety_physical presence	.677**	.783**	1										
Safet_sociality	.696**	1											
Safety_stigma	1												

**$p < .001$; *$p < .05$.

Table 4. Multiple Linear Regression Analysis (Dependent Variable: Psychological Wellbeing)

Step	Predictors	Final β	R^2	ΔR^2
1	Sex	–.030	.402**	.005
	Age	–.157**		
	Hope_Pathways	.158**		
	Hope_Agency	.343**		
	Optimism	.174**		
	Challenges in dealing with time	–.138**		
	Risk perception in the present	.089*		
	Risk perception in the future	–.067*		
	Safety_Physical presence	–.025		
	Safety_Sociaity	.039		
	Safety_Stigma	–.057		

**p =< .001; *p < .05.

.209, p < .001). Similarly, risk of contagion perception both in the present (r = .095; p < .001) and in the future (r = .115, p < .001) showed a significant relationship with age: older people reported higher levels of risk perception both in the present and in the future. The relationships between the subscale of safety perception and age were significant as well: older people estimated to regain the perception of feeling safe in situations of physical presence (r = .308; p < .001); sociality (r = .192, p < .001) and stigma (r = .192; p < .001) later in the future.

Challenges in dealing with time (r = -.205, p < .001) and psychological wellbeing (r = .-054, p < .05) showed an inversely significant association with age: older people reported less challenges in dealing with time but also lower level of psychological wellbeing.

A significant correlation between hope and challenges in dealing with time (r = -.329, p < .001) emerged: high levels of hope were associated with a lower perception of challenges in dealing with time during the lockdown experience. Both components of the construct, agency (r = -.278, p < .001), and pathways (r = -.309, p < .001), were inversely correlated with the challenges in wrestling with time. Similarly, the correlation between optimism and challenges in dealing with time proved significant (r = -.405, p < .001): people declaring higher levels of optimism perceived lower levels of challenges in struggling with time during the lockdown experience.

The relationship between hope and risk of contagion perception, both in the present situation and future scenarios, was not significant. Likewise, the relationship between optimism and risk of contagion perception, both in the present situation and future scenarios, was not significant. Conversely, the results illustrated a significant correlation between optimism and risk of contagion perception in future scenarios (r = -.062; p < .05).

Results highlighted significant correlations between the two positive anticipatory states and the three subscales of safety perception: hope and stigma (r = -.065, p < .05), hope and sociality (r = -.063, p < .05), and similarly, optimism and stigma (r = -.080, p < .001), and optimism and sociality (r = -.069, p =< .001). As previously explained, items related to safety perception were focused on when people estimate feeling safe again in some specific situations: so, people with higher levels of positive anticipatory states were also estimated to regain the perception of feeling safe in such situations earlier in the future.

Moreover, collected data showed that people with higher levels of psychological wellbeing experience lower levels of challenges in dealing with time (r = -.329, p < .001).

No significant relationship with risk of contagion perception in the present emerged. Conversely, psychological wellbeing revealed a significant association with risk perception in the future (r = -.074, p < .001).

Concerning safety perception, psychological wellbeing was associated with all the three safety perception subscales: physical presence (r = -.097, p < .001), social situations (r = -.094, p < .001) and stigma (r = -.134, p < .001).

To investigate whether sex, age, positive anticipatory states, challenges in dealing with time, risk of contagion perception and safety perception could jointly predict psychological wellbeing, the researchers tested a model of multiple linear regression analysis (Table 4). The regression model was significant and explained 40% of the total variance (Final $R2$ = .402).

Discussion

The first period of the COVID-19 pandemic was characterised by the most severe ban on leaving home except for specific and very limited reasons. The risk of contagion existed everywhere, and the death rate was alarming. In this period, both the present and the future appeared uncertain. Hope and optimism cover a central role in fostering personal wellbeing, both in the present (assuming a protective role) and future (determining the personal expectations) (Satici, 2016). In this study, we explored the protective role of these two constructs in preserving wellbeing – measured as psychological wellbeing and challenges in dealing with time – and risk perception, namely the risk of being infected, both regarding the present situation and future scenarios.

Results highlight that both hope, and optimism stood significantly related to wellbeing during the lockdown experience for the considered sample. On one side, high levels of positive anticipatory states were associated with high levels of psychological wellbeing, consistent with the literature about hope (Erez & Isen, 2002; Lazarus & Launier, 1978; Michael, 2000) and optimism (Scheier et al., 1994; Taylor, 1989). On the other side, higher levels of hope and optimism were associated with fewer difficulties involving coping with the challenges in dealing with time. Hopeful and optimistic people reported to perceive fewer challenges in dealing with time during the first lockdown in Italy. Similarly, higher levels of psychological wellbeing were associated with lower levels of challenges in dealing with time. The study's first hypothesis was confirmed: positive anticipatory states influence psychological wellbeing and challenges in dealing with time during a lockdown experience (Satici, 2016).

Concerning the risk of contagion perception in the present, the correlation analysis did not show significant interactions with positive anticipatory states and psychological wellbeing. Conversely, the association between optimism, risk of contagion perception in the future, and psychological wellbeing was highlighted. Results pointed out that higher levels of optimism and lower levels of contagion risk perception in future situations contribute to the individuals' psychological wellbeing. This is consistent not only with the protective role of optimism (Taylor, 1989; Tiger, 1979), but also with the effect of the optimistic bias (Jefferson et al., 2017; Sharot, 2011; Shepperd et al., 2015) that brings people to underestimate the level of risk connected to certain actions and situations, especially those considered extremely meaningful and useful for daily life. Recent studies conducted in the pandemic context in different countries exhibited similar results. Individuals reporting higher levels of optimism hold a lower level of perceived risk and a more positive though hazier representation of the future (Jefferson et al., 2017; Kuper-Smith, 2021; Makridakis & Moleskis, 2015; Reyes-Velázquez & Sealey-Potts, 2015; Scheier & Carver, 1985; Sharot, 2011; Shepperd et al., 2015). Regarding the relationship between hope and risk of contagion, we found no significant interaction for the present nor future scenarios. Several reasons may be hypothesised. Concerning hope, for example, the lack of a defined temporal frame could have influenced the answers related to the future. Snyder (2000) points out that the ability to hope needs a specific goal that the individual wants to achieve: during the first part of the pandemic situation, the uncertain social conditions made this impossible. Finally, our results about hope and risk perception are consistent with the literature, where contrasting results are present, suggesting that further research is needed to deepen the knowledge of this relationship. Regarding socio-demographic variables, risk of contagion perception both in the present and in the future revealed a significant relationship with age and sex. Women reported higher levels of perceiving an infection risk than did men (Dolinski et al., 2020). Considering age, the risk of contagion perception in the future increases with age. It is worth noting that one of the few and primarily acknowledged features of the novel virus as it spread involved its higher danger for older people. More in-depth knowledge has revealed that the COVID-19 virus may result in more dangerous consequences to those with previous pathologies, as often is the case with the elderly. In the first period of the pandemic, when the knowledge of the novel virus was limited, a very powerful association between the mortality and age of the victims appeared. Moreover, such association was strengthened by media communication and by some iconic events, such as the outbreaks of the disease in many nursing homes and the Army convoy carrying coffins of coronavirus victims, the vast majority of whom consisted of the elderly, out of the city of Bergamo. This is coherent with the knowledge about the impact of COVID-19: during the first wave older people had more risk of the contagion than younger people had.

Positive anticipatory states and psychological wellbeing displayed a significant relationship with the perception of risk measured as the perception of feeling safe in certain situations. Higher levels of positive anticipatory states were associated with regaining the perceived feeling of safety earlier in the future; this stood particularly true for social situations such as going to the cinema, taking part in events like weddings, thesis defences and birthday celebrations. Correlation analysis results also suggested that during the first COVID-19 wave, people tended to perceive themselves as being safe from stigma; for example, by talking about friends that contracted COVID-19, differently than what was suggested by Logie and Turan (2020). Considering psychological wellbeing, the results highlighted a significant association with safety perception. Indeed, higher levels of psychological wellbeing were associated not only with the subscales of sociality and

stigma, but also with the possibility to return to meeting people in person (physical presence). The questionnaire was administered during the pandemic's sixth week: people could not meet each other, and social situations had been strongly forbidden. In general, results about safety perception confirm its adaptive role. However, the association previously highlighted between risk of contagion perception in the future, optimism, and psychological wellbeing, pointed out the main difference between positive anticipatory states. Optimistic people, in the pandemic situation, tend to imagine the future with the effect of the optimistic bias in order to preserve their own wellbeing. A pandemic, as explained at the beginning of this paper, constitutes an exceptional and disruptive event, incomparable to other catastrophic stressors. Our hypothesis holds that the exceptional nature of experiencing a pandemic and a lockdown may have generated, brought out, or strengthened significant goals, like maintaining sociality and personal and global safety. Results highlighted that hope promotes safety perceptions and psychological wellbeing without an association to risk perception. Uncertain time and future scenarios stimulate hopeful thinking (Lazarus, 1999; Snyder et al., 1991): hopeful people identify their safety perceptions as their future goals, without underestimating risks while in the present and future scenarios.

During the lockdown, the presented predictive wellbeing model indicated that positive anticipatory states, sex, and age played a central role in determining individual psychological wellbeing during the pandemic's first wave in Italy. Both the considered dimensions of hope and optimism proved to influence psychological wellbeing, consistently with literature (Satici, 2016). Moreover, we confirmed the inverse influence between difficulties in managing time and psychological wellbeing. Also the risk of contagion perception, both in the present and in the future, proved to have a direct impact on psychological wellbeing: individuals perceiving lower levels of contagion risk experienced greater wellbeing.

Our findings remain consistent with the research on both positive anticipatory states. The COVID-19 emergency offered a chance to grasp the processes underlying hope and optimism since during the pandemic, all the people shared uncertainty and goals – which are the two fundamental elements of hope (Lazarus, 1999; Snyder, 2000) – and similar difficulties in coping with the present (Tiger, 1979). Moreover, information about the future remained ambiguous, insufficient, and emotionally complex. All such elements constitute typical components of optimism (Sharot, 2011). This study confirms the protective role of hope and optimism in situations characterized by deep uncertainty, not only from a personal (Lazarus, 1999) but also from a collective and social perspective. Furthermore, this work encourages new research on the role of optimism and hope in the perception of risk and safety. In fact, the present study's findings demonstrate a main difference between hope and optimism in promoting wellbeing in risky situations such as during a pandemic. The two positive anticipatory states serve their purpose for wellbeing and challenge in dealing with time differently and in a complementary manner. Focusing on the temporal dimension, optimism fosters a positive view of the future, thereby making the present more bearable. Besides, regarding both components of hope (Snyder et al., 1991), the ability to imagine defined pathways to a person's goals and the ability to plan the journey to such goals, bridge the present and the future, allowing to maintain continuity in the perception of one's life when disrupted by the stressful event of the pandemics. Additionally, hope underpins action, helping the individual to regain and support a sense of control on her own course of action in a very peculiar moment as the lockdown, when everyone's scope for action becomes dramatically curtailed. Showing no influence of positive states on risk perception in the present, results confirm the idea that, in as deeply a stressful situation as pandemics, risk perception is functional to the individual's wellbeing and survival (Slovic, 1987). On the other hand, higher levels of positive anticipatory states were associated with regaining the perceived feeling of safety earlier in the future, highlighting the role of optimism and hope in supporting positive thinking to promote trust and wellbeing. In conclusion, our results confirmed the role of hopeful thinking and optimistic feeling in responding adaptively to adverse circumstances, such as events endangering health, natural disasters, and socio-economic crises (Brazeau & Davis, 2018; Counted et al., 2022; Miller-Smedema et al., 2010), thus promoting safety perceptions and psychological wellbeing.

Strengths and Limitations

The present study bears some limitations. First, the data were collected in Italy, the second country hit by the virus after China and the first in Europe to experiment with restrictions and a lockdown. Although the findings provide useful insight into the role of positive anticipatory states on psychological wellbeing and risk perception during the pandemic event, this information cannot be generalised to other countries wherein the situation and the restrictions are different, and cultural differences may affect the subjective evaluation of primary needs and risks. Second, the collected data were cross-sectional, so an interpretation of possible changes during the following periods of the pandemic was precluded. Future work with longitudinal approaches to positive anticipatory states and events like pandemics is needed to empower insights into the association between the variables considered.

Conclusion, Implications and Future Directions

In general, the results confirm what the literature illustrates about positive anticipatory states. Uncertain time and future perceptions stimulate hopeful thinking (Lazarus, 1999; Snyder et al., 1991) and optimism has an adaptive role for individuals (Taylor, 1989). In the context of an uncertain present and future (Rajkumar, 2020), as during COVID-19, promoting hope can help people focus on specific goals supporting wellbeing without the influence of optimistic bias (Sharot, 2011). This study emphasises that hope and optimism have different impacts on psychological wellbeing: hope helps in defining a path towards an individual's personal goals, while optimism drives people to underestimate risks and anticipate positive future scenarios. Such a difference stands effectively represented by two slogans and hashtags that were very popular during the first lockdown in Italy: the first one was "*Everything will be fine*" (#andràtuttobene), which mirrors the need to imagine that the dramatic situation would develop positively, mimicking dispositional optimism and the optimistic bias. The second slogan was "*I stay at home*" (#iorestoacasa), which was the core of an information campaign aimed at promoting the idea that the only way to protect people from COVID-19 contagion involved staying at home safely. Such an aim can be compared to the function of hope; that is, fostering action plans to achieve uncertain but possible goals (Lazarus, 1999; Snyder, 2000).

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Federica BIASSONI: conceptualization, design, methodology, investigation, project administration, data management, formal analysis, interpretation, supervision, writing original draft, writing review and editing.
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All authors gave their final approval of the version to be published and agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Declaration of interest statement
The authors have no conflicts of interest to disclose.

Ethical statement
This manuscript is the authors' original work.
The authors declare that the presented research was carried out ensuring voluntary participation, informed consent, anonymity and did not include any potential harm for the participants. The research was conducted in compliance with the Directive 95/46/EC (General Data Protection Regulation) and with the ethical recommendations for research in psychology, in accordance with the "Code of Ethics of Italian Psychologists" and the WMA Declaration of Helsinki - 2013.
All participants engaged in the research voluntarily and anonymously, and provided their written informed consent to participate in this study.
Data are stored in coded materials and databases without personal data, and the authors have policies in place to manage and keep data secure.

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