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## Facing distress in Coronavirus era: The role of maladaptive personality traits and coping strategies

Claudio Sica<sup>a,\*</sup>, Robert D. Latzman<sup>b</sup>, Corrado Caudek<sup>c</sup>, Silvia Cerea<sup>d</sup>, Ilaria Colpizzi<sup>a</sup>, Maria Caruso<sup>a</sup>, Paolo Giulini<sup>a</sup>, Gioia Bottesi<sup>d</sup>

<sup>a</sup> Department of Health Sciences, Psychology Section, University of Firenze, Via San Salvi, 12, 50135, Firenze, Italy, Italy

<sup>b</sup> Department of Psychology, Georgia State University, 33 Gilmer Street SE, Atlanta, USA

<sup>c</sup> Department of Neurosciences, Psychology, Drug Research, and Child Health, University of Firenze, Via San Salvi, 12, 50135 Firenze, Italy

<sup>d</sup> Department of General Psychology, University of Padova, via Venezia, 8, 35131 Padova, Italy

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### ABSTRACT

The aim of the current study was to investigate the intersecting roles of dysfunctional personality traits and coping styles in relation to psychological distress during the Italian national lockdown caused by the COVID-19 pandemic. Participants included 633 adults who completed questionnaires of maladaptive personality traits, coping styles, and psychological distress. Results indicated that all the maladaptive traits were associated with psychological distress with magnitude of associations strongest for Negative Affect and weakest for Antagonism. Maladaptive traits were also generally positively associated with avoidant/maladaptive and negatively associated with acceptance and positive reframing, forms of coping. A series of path analyses further demonstrated that coping strategies partially explained associations between maladaptive personality traits and psychological distress. All told, results suggest that during an unprecedented stressful time, associations between maladaptive personality traits and psychological distress may be, at least in part, explained by maladaptive coping strategies.

### 1. Introduction

The enormous threat of COVID-19 prompted government entities around the world to implement unprecedented quarantine measures in Spring 2020. Evidence from previous epidemics suggests such situations can have major psychological consequences, including increases in distress, in large part because of the social isolation that results from quarantine (Brooks et al., 2020). Whereas there is good reason to believe a direct effect of social isolation on mental health, this impact is likely not equivalent for all. Indeed, the mental health impact of the COVID-19 pandemic may be moderated by individual-level factors, such as personality traits and coping strategies employed to deal with the difficult situation (Afshar et al., 2015; Chew et al., 2020). The current study thus aimed to consider the way in which maladaptive personality traits and coping strategies contribute to variation in psychological distress during the Italian national lockdown in Spring, 2020.

Coping strategies, defined as the thoughts and behaviors used to manage the internal and external demands of situations that are appraised as stressful, are often organized according to their intended

functions: that is, directed toward resolving the stressful situation (i.e., problem-focused coping), or palliating event-related distress (i.e., emotion-focused coping), or as avoiding the sources of stress (i.e., avoidance-oriented coping), or, lastly, drawing on values, beliefs, and goals to modify the meaning of a stressful transaction (positive-oriented coping) (Folkman & Moskowitz, 2004; Taylor & Stanton, 2007).

It is generally acknowledged that avoidant-oriented coping styles (e.g., avoidance of behaviors and/or thoughts, drug use, denial) and positive-oriented coping (e.g., positive reinterpretation and growth, acceptance) are, respectively, detrimental and beneficial for managing difficult situations, including during the COVID-19 pandemic (Chew et al., 2020; Shanahan et al., 2020). The contribution of problem-focused coping to psychological distress during periods of high uncertainty, however, is still unclear (e.g., Dawson & Golijani-Moghaddam, 2020; Zacher & Rudolph, 2020). In fact, it has been demonstrated that intolerance of uncertainty is related to higher endorsements of emotion-focused, but not problem-focused, coping and greater anxiety during a pandemic (Taha et al., 2014). Likewise, the role of social support (a form of emotion-focused coping) during a pandemic appears at least

\* Corresponding author at: Department of Health Sciences, Psychology Section, University of Firenze, Via San Salvi, 12, (Padiglione 26), 50135 Firenze, Italy.

E-mail addresses: [claudio.sica@unifi.it](mailto:claudio.sica@unifi.it) (C. Sica), [rlatzman@gsu.edu](mailto:rlatzman@gsu.edu) (R.D. Latzman), [corrado.caudek@unifi.it](mailto:corrado.caudek@unifi.it) (C. Caudek), [silvia.cerea@unipd.it](mailto:silvia.cerea@unipd.it) (S. Cerea), [ilaria.colpizzi@unifi.it](mailto:ilaria.colpizzi@unifi.it) (I. Colpizzi), [mcaruso260@gmail.com](mailto:mcaruso260@gmail.com) (M. Caruso), [paolo.guglielmo.giulini@gmail.com](mailto:paolo.guglielmo.giulini@gmail.com) (P. Giulini), [gioia.bottesi@unipd.it](mailto:gioia.bottesi@unipd.it) (G. Bottesi).

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equivocal: Chew et al. (2020), in their narrative synthesis, asserted that seeking social support was positively correlated with life satisfaction, but also with increased psychological distress. Research during the Swiss national lockdown provides further support for the notion that seeking social support may be associated with increases, rather than decreases in psychological distress (Shanahan et al., 2020; see also, Zacher & Rudolph, 2020).

With regard to associations between personality and coping strategies, a large literature exists demonstrating clear associations. For example, a meta-analysis of 124 studies examining associations between Big Five personality and coping demonstrated robust associations but indicated the importance of distinguishing between specific strategies (Connor-Smith & Flachsbart, 2007). Specifically, extraversion showed positive correlations with problem-focused and emotional-focused strategies, neuroticism was negatively related to problem-focused and positive-oriented strategies (in particular, acceptance), and positively related to emotional-focused and avoidance-oriented strategies, agreeableness and openness were weakly related to coping (essentially to social support and problem-focused strategies), and finally conscientiousness was strongly linked to problem-focused strategies. Also, drugs and alcohol use (avoidance-oriented strategies) were negatively associated with Agreeableness and Conscientiousness (Connor-Smith & Flachsbart, 2007; see also, Afshar et al., 2015).

Whereas there is a relatively large literature investigating associations between personality and coping, generally, to date, few studies have considered the role of personality in psychological distress during a pandemic (Mazza et al., 2020). Such investigations are important as results promise to contribute to our understanding of individual differences during a real-world scenario (i.e., COVID-19 pandemic) and to identify individuals that may be particularly at risk for more negative outcomes at whom we might direct treatment or prevention efforts.

### 1.1. Psychological effects of COVID-19

On March 10, 2020, Italy became the first democratic Country since World War II to impose a nationwide lockdown due the COVID-19 outbreaks. Consequently, the sense of confinement, disruption of typical routines, and reduction in social and physical interpersonal contact resulted in marked distress for many in the population (e.g., Casagrande et al., 2020).

Similar findings have been reported across the globe. Indeed, given the unprecedented restrictions placed on large swaths of the global population, high rates of emotional distress, including anxiety, depression, and quarantine-related stress-related symptomatology, have been reported across several studies (e.g., Brooks et al., 2020). Therefore, this context, characterized by strict public health measures and widespread uncertainty about the future, likely provides valuable insights into the contribution of individual differences to emotional maladjustment.

### 1.2. Personality traits, coping and pandemics

Mazza et al. (2020) examined risk factors for psychological distress among 2766 Italian participants during the lockdown period. Consistent with previous findings, they found that the maladaptive traits of negative affect and detachment were associated with higher levels of depression, anxiety, and stress. Somma et al. (2020) report similar findings from a sample of 1043 Italian community-dwelling adults.

With regard to associations between personality and coping, Prentice et al. (2020), investigated the link between Big Five traits and coping strategies among 478 Chinese adults during the COVID-19 outbreak. Results showed that openness was positively associated with emotion-focused and positive-oriented coping (e.g., social support and positive reinterpretation and growth) and negatively related to avoidance-oriented coping, conscientiousness was positively associated with emotion-focused, and negatively with avoidance-oriented, coping, and, finally, neuroticism was positively related to avoidance-oriented coping.

All told, it appears clear that personality explains variation in both coping strategies as well as psychological distress. Nonetheless, the way in which associations between variation in personality and psychological distress may be explained by coping is less understood. Better explicating the nature of these associations, especially in the context of a global pandemic, has a number of important implications.

### 1.3. The current study

The purpose of the current study was thus to consider the way in which, during national lockdown, maladaptive personality traits, as conceptualized within the DSM-5 Alternative Model of Personality Disorders (AMPD; Krueger et al., 2012), and coping strategies associate with psychological distress. Further, the extent to which associations between maladaptive personality traits and psychological distress may be explained by variation in coping strategies was considered.

Considering the extant literature, the following hypotheses were tested:

- (1) Given that maladaptive personality represents pathological ways to deal with experiences, tasks, and social relationships (Widiger et al., 2019), we expected all the five AMPD traits will associate with psychological distress.
- (2) Similar to (1), we expected all five maladaptive personality traits to associate with avoidance-oriented coping strategies given the difficulty of life-adaptation characterizing such traits. Likewise, we expected all traits to associate negatively, if at all, with positive-oriented coping strategies given the general deficient affective experience typical of maladaptive personality traits (e.g., Krueger et al., 2012).
- (3) We expected avoidance-oriented coping and positive-oriented coping to exhibit opposing associations (positive and negative) with psychological distress; moreover, we expected them to account for a significant amount of variance in psychological distress beyond the contribution of maladaptive personality traits. On the contrary, however, we expected social support, a form of emotion-focused coping, to exhibit smaller, or potentially no, association with psychological distress given the absence of face-to-face and physical interactions during the lockdown.

## 2. Material and methods

### 2.1. Participants and procedure

Given the unique circumstances of a national lockdown, we recruited as many participants as possible during the period from March 10 to June 2, 2020. An online battery of questionnaires was administered through social media platforms (Facebook, Twitter, and Instagram). Participation was voluntary and no incentives were offered. Of the 743 adult individuals who enrolled in the online study, 730 (98.2%) completed all questionnaires. Multivariate outliers were excluded following the procedure demonstrated by Leys et al. (2018). In brief, we used a robust variant of the Mahalanobis distance based on the Minimum Covariance Determinant. Employing a detection level of  $p < .001$ , 97 participants (13.3% of the sample with completed questionnaires) were excluded, resulting in a final sample of 633. Of this final sample, the mean age was 30.9 years ( $SD = 14.1$ ), and 74% were female. The mean education level was 14.4 years ( $SD = 2.9$ ). None reported being ill or infected by COVID-19 themselves, but 58 (9%) reported having a close family member or significant other infected by the virus.

Ethical approval was obtained from the Institutional Board of the University in conformity with the principles of the Declaration of Helsinki. All participants were advised of the study's aims and provided informed consent before completing the survey.

2.2. Measures

Please, see the online Supplement for detailed descriptions of the measures.

The *Personality Inventory for DSM-5 Personality Disorders* (PID-5; Krueger et al., 2012; Fossati et al., 2013; Bottesi et al., 2018) consists of 220 items rated on a 4-point Likert-type scale assessing 25 facet traits that that load onto 5 higher order dimensions: Antagonism, Detachment, Disinhibition, Negative affectivity and Psychoticism. Internal consistency values observed in the present sample for the five higher order dimensions (e.g., domains) were all equal or greater than 0.90.

The *COPE Inventory* (COPE; Carver et al., 1989; Sica et al., 1997; Sica et al., 2008) is a multidimensional inventory that includes 60 items rated on a 5-point Likert-type scale, of which sets of four are grouped to form 15 conceptually distinct coping strategies or scales. Factor analyses on the Italian version of the COPE (Sica et al., 1997, 2008) have demonstrated that the scales can be grouped into the following dimensions: Problem-focused, Social Support, Avoidance-oriented, Positive-oriented, and Transcendent-oriented. Internal consistency values of these five dimensions in the present sample exceeded 0.80, with the exception of the Avoidance-oriented coping (Cronbach's alpha = 0.75).

The *Depression Anxiety Stress Scale-21* (DASS-21; Bottesi et al., 2015; Lovibond & Lovibond, 1995) is a 21-item measure assessing depression, anxiety, and stress over the previous week. Items are rated on a 4-point Likert-type scale. Following the suggestions of Bottesi et al. (2015), the DASS-21 total score was used as a measure of general psychological distress; Cronbach's alpha reliability for this scale in the current sample was 0.94.

For sake of comparison, the amount of psychological distress in the current sample in terms of DASS-21 total score ( $N = 633$ ; Mean = 19.8; SD = 11.9) was significantly higher than previously reported levels within the community-dwelling Italian population (Bottesi et al., 2015;  $N = 417$ ; Mean = 12.3; SD = 8.3,  $t = 11.2, p < .001$ ).

2.3. Data analyses

Normality of all study variables were first assessed using skewness and kurtosis statistics, and linearity was established by plotting the unstandardized residuals (observed vs. predicted values) for each outcome variable across the range of each predictor.

Zero-order correlations (Pearson's  $r$ s) were computed to evaluate the

associations among all study variables. Next, guided both by theory and observed bivariate correlations, the lavaan package (Version 0.6–5; Rosseel, 2012) of the R statistical environment (version 3.6.3; R Core Team, 2020) was used to fit five full path models in which the extent to which coping strategies significantly associated with psychological distress at the bivariate level explained associations between each of the maladaptive personality traits and variation in recent psychological distress. Age was included as a covariate in all models as many studies have found predictors of psychological distress to vary by age (e.g., Sim et al., 2010).

Since models that included problem-focused coping exhibited a poor fit to data (please, see online supplement for details), we elected to remove problem-focused coping from all path analyses. This decision is also consistent with the notion that, as noted above, the role of problem-focused coping in a period of strict quarantine is questionable (e.g., Dawson & Golijani-Moghaddam, 2020).

3. Results

Bivariate correlations for all study variables are presented in Table 1.

The association between Negative affectivity and psychological distress was large ( $r = 0.50, p < .001$ ); the associations between Disinhibition, Psychoticism and psychological distress were of medium size ( $r = 0.31$  and  $0.41$ , respectively, all  $ps > .001$ ), whereas the relations between the other personality traits and psychological distress were of small size ( $r = 0.20$  for Antagonism and  $0.28$  for Detachment, all  $ps > .001$ ). In turn, Avoidance-oriented strategies were related to psychological distress at medium size ( $r = 0.30, p < .001$ ), Positive-oriented and Problem-focused at small size ( $r = -0.18$  and  $-0.23$ , respectively, all  $ps > .001$ ), whereas Social support and Transcendent-oriented showed no associations with psychological distress.

Avoidance-oriented strategies showed the highest correlations with personality traits, typically of medium size ( $r$ s from  $0.27$  to  $0.37$ , all  $ps > .001$ ); the other coping strategies were related at a small size with personality traits either in negative (i.e., Problem-focused, Positive-oriented, and Transcendent-oriented strategies, this last one with the exception of the association with Negative affect) or in conflicting directions (Social support positive with Negative affect,  $r = 0.21, p < .001$ , negative with Detachment,  $r = -0.22, p < .001$ , and null for the other maladaptive traits).

Lastly, in absolute value Psychoticism and Antagonism were the

Table 1

Bivariate Correlations (Pearson's  $r$ ) among maladaptive personality traits, coping strategies and general distress ( $N = 633$ ).

	1	2	3	4	5	6	7	8	9	10	11
PID-5											
1. Antagonism	–										
2. Detachment	0.29**	–									
3. Disinhibition	0.52**	0.45**	–								
4. Negative affect	0.32**	0.32**	0.43**	–							
5. Psychoticism	0.51**	0.48**	0.68**	0.51**	–						
COPE											
6. Avoidance strategies	0.30**	0.33**	0.37**	0.29**	0.27**	–					
7. Positive strategies	–0.05	–0.10*	–0.17**	–0.17**	–0.06	0.02	–				
8. Problem-focused strategies	–0.04	–0.22**	–0.23**	–0.12**	–0.07	–0.24**	0.41**	–			
9. Social support	0.05	–0.26**	–0.03	0.23**	0.02	0.02	0.07	0.41**	–		
10. Transcendent strategies	–0.14**	–0.06	–0.12**	0.03	–0.08*	–0.14**	–0.07	0.01	0.02	–	
DASS-21											
11. Total	0.20**	0.28**	0.31**	0.50**	0.41**	0.30**	–0.18**	–0.23**	0.03	0.00	–
Mean	13.6	18.5	17.6	27.6	21.4	25.9	33.3	32.1	31.8	19.3	19.8
SD	8.8	9.7	9.7	11.9	15.2	5.4	5.14	5.5	7.2	4.6	11.9
Range	1–41	3–51	2–44	0–56	0–66	16–49	17–48	14–47	13–48	8–32	0–57
Skewness	0.65	0.61	0.54	0.00	0.41	0.57	–0.01	0.09	–0.07	0.48	0.48
Kurtosis	–0.43	–0.25	–0.45	–0.76	–0.71	0.08	–0.33	–0.23	–0.54	0.38	–0.31

Note. PID-5 = Personality Inventory for DSM-5; COPE = COPE Inventory; DASS-21 = Depression Anxiety Stress Scale-21.

\*  $p < .05$ .

\*\*  $p < .001$ .

personality traits least related to coping strategies (mean  $r = 0.10$  and  $0.12$ , respectively), compared to the other traits (Detachment, mean  $r = 0.19$ ; Disinhibition, mean  $r = 0.18$ ; Negative affect, mean  $r = 0.17$ ).

The five path models are depicted in Fig. 1 and all showed excellent fit to the data (see note 1 on online supplement).

The model with Antagonism explained 16% of the variance in DASS-21 total score. There were two positive direct effects to psychological distress (from Antagonism ( $\beta = 0.10, p < .01$ ) and Avoidance-oriented strategies ( $\beta = 0.27, p < .001$ )), and a negative direct effect to psychological distress (from Positive-oriented strategies ( $\beta = -0.16, p < .001$ )). The paths from Antagonism to avoidance strategies ( $\beta = 0.30, p < .001$ ) evidenced a significant indirect effect in the explanation of psychological distress; on the contrary, in this model Antagonism was not associated to positive coping ( $\beta = -0.05, p = .22$ ).

Detachment explained 18% of the variance in DASS-21 total score. The model showed two positive direct effects to psychological distress (from Detachment ( $\beta = 0.19, p < .001$ ) and Avoidance-oriented strategies ( $\beta = 0.24, p < .001$ )), and a negative direct effect to psychological distress (from Positive-oriented strategies ( $\beta = -0.15, p < .001$ )). The paths from Detachment to both avoidance strategies ( $\beta = 0.33, p < .001$ ) and positive strategies ( $\beta = -0.10, p < .05$ ) evidenced a significant indirect effect to psychological distress.

Disinhibition explained 18,4% of the variance in DASS-21 total score. Direct effects to psychological distress emerged from Disinhibition ( $\beta = 0.19, p < .001$ ), Avoidance-oriented strategies ( $\beta = 0.23, p < .001$ ), and Positive-oriented strategies ( $\beta = -0.14, p < .001$ ). Also, the paths from Disinhibition to both avoidance strategies ( $\beta = 0.37, p < .001$ ) and positive strategies ( $\beta = -0.17, p < .001$ ) evidenced a significant indirect effect to psychological distress.

The model with Negative affectivity explained 29,5% of the variance in DASS-21 total score. There were two positive direct effects to psychological distress (from Negative affectivity ( $\beta = 0.40, p < .001$ ) and Avoidance-oriented strategies ( $\beta = 0.18, p < .001$ )), and a negative direct effect to psychological distress (from Positive-oriented strategies ( $\beta = -0.10, p < .01$ )). The paths from Negative affectivity to avoidance strategies ( $\beta = 0.29, p < .001$ ) and positive strategies ( $\beta = -0.17, p < .001$ ) evidenced a significant indirect effect in the explanation of psychological distress.

Lastly, Psychoticism explained 24.8% of the variance in DASS-21

total score. There were two positive direct effects to psychological distress (from Psychoticism ( $\beta = 0.33, p < .001$ ) and Avoidance-oriented strategies ( $\beta = 0.21, p < .001$ )), and a negative direct effect to psychological distress (from Positive-oriented strategies ( $\beta = -0.15, p < .001$ )). The path from Psychoticism to avoidance strategies ( $\beta = 0.27, p < .001$ ) evidenced a significant indirect effect in the explanation of psychological distress; on the contrary, in this model Psychoticism was not associated with positive coping ( $\beta = -0.06, p = .10$ ). In all the models, age was negatively correlated with psychological distress (mean  $\beta = -0.14$ ).

#### 4. Discussion

Results of the current study of mental health during the COVID-19 lockdown in Italy suggest maladaptive personality traits represent general risk for psychological distress. Not surprisingly negative affect was the trait most related to psychological distress: in the path model, it explained almost double of the variance in psychological distress compared to the other maladaptive traits. All maladaptive traits were further positively associated with avoidant forms of coping (e.g., denial, taking drugs, etc.) and, negatively associated with acceptance and positive reframing. Moreover, coping strategies substantially contributed to the explanation of psychological distress as shown in the path analyses. Taken together, results demonstrated that beyond maladaptive personality traits, individual variation in one's approach to coping plays an important role in determining psychological distress during a highly stressful period.

The relatively small association between psychoticism and all coping strategies, except those Avoidance-oriented (as evidenced by bivariate correlations), coupled with the rather high association between psychoticism and psychological distress (as found in path analysis), indicates how challenging it may be for individuals high in this trait to use effective way to deal with emotional stress. Although speculative, it may be that given individuals high in Psychoticism likely have difficulties in reality-testing, this may prevent them from selecting the appropriate coping strategies in specific situations.

On the other hand, the low association between Antagonism and all coping strategies (except those Avoidance-oriented) may reflect low perceived distress during the quarantine (indeed, in the current study,

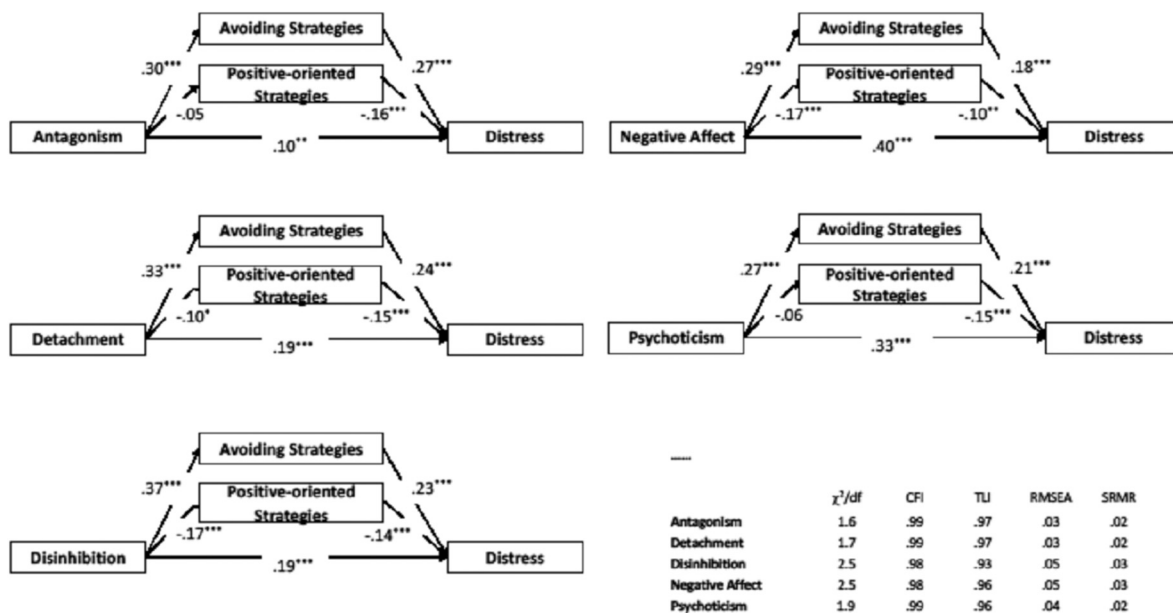


Fig. 1. Direct and indirect effects on psychological distress (path models) for each PID-5 dimension and Avoidance and Positive oriented coping strategies. Note: All  $\chi^2$  values are not significant. CFI = Comparative Fit Index; TLI = Tucker-Lewis index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

Antagonism showed the smallest associations with psychological distress). In this case, antagonistic individuals might be less motivated to employ coping strategies, with the exception of those usually associated with externalizing behaviors such as drug use and distraction (see also, Sica et al., 2021).

Turning to coping strategies more explicitly, the current study confirmed the negative impact of avoidant strategies (or the frequent use of them in period of high psychological distress) and the difficulty to use more constructive coping. On the contrary, social support was not related to psychological distress. It is possible that people either searching for or providing support during a quarantine period are uniformly concerned about uncertainty, limiting in this way the beneficial effects of social contacts. In addition, the more frequent the contact with others, the more also are opportunities to be exposed to worries and distress, besides the potential positive effects of the social contact per se.

We hypothesized the possibility of problem-focused strategies being less effective during the lockdown given how difficult it might be to employ such strategies. This was confirmed by the absence of fit to data of the path models that included these strategies.

Lastly, in all path analyses age was inversely correlated with psychological distress. Since age is somewhat negatively associated with personality pathology more broadly (e.g., Quirk et al., 2017), we cannot exclude that as one ages the influence of maladaptive traits may be less pervasive.

#### 4.1. Strengths and limitations

The present study has a number of strengths, including a large sample, the use of widely-used and well-researched instruments, and the use of path analysis to characterize associations among personality, coping, and psychological distress. Further, the data were collected during a calamitous period in global history when participants were experiencing the first national lockdown in recent memory due to the rapid outbreak of COVID-19.

However, some study limitations also warrant mention. Our sample consisted of individuals from Italy, raising questions about generalizability to individuals from other Countries with differing cultural and ethnic backgrounds. Moreover, it was not possible to control our analyses for gender, given the prevalence of females in our sample.

#### 4.2. Conclusions and future directions

Several implications can be drawn from the current study. First, even though our research design prevented to make assertions about causality, we might speculate that people with maladaptive personality traits are more likely to experience distress in stressful times also because they are more inclined to use avoidant coping strategies. Besides that, avoidance-oriented coping may even worsen behavioral and cognitive dysregulation typical of personality disorders with deep negative consequences for their quality of life (e.g., Gross & John, 2003).

From a clinical point of view, it might therefore be important not only to help individuals in decreasing avoidant strategies, but also to encourage people to use the lockdown as an opportunity to learn new skills or to find important values, beliefs, and goals. It is also important to take in consideration the possible inefficacy of social support and problem-focused strategies during the lockdown; the former may promote mood instability due to the effects of emotional outbursts; the latter may lead to frustration and low self-efficacy due to the limited possibility to change the situation.

All told, results of the current study suggest that during an unprecedented stressful time, associations between maladaptive personality traits and psychological distress may be, at least in part, explained by maladaptive coping strategies.

### CRedit authorship contribution statement

Conceptualization, Claudio Sica, Corrado Caudek, Ilaria Colpizzi, Robert D. Latzman and Gioia Bottesi; Formal analysis, Claudio Sica, Corrado Caudek and Ilaria Colpizzi; Investigation, Corrado Caudek, Silvia Cerea, Ilaria Colpizzi, Maria Caruso and Paolo Giulini; Methodology, Corrado Caudek and Ilaria Colpizzi; Project administration, Claudio Sica, Corrado Caudek and Ilaria Colpizzi; Supervision, Claudio Sica, Gioia Bottesi, Robert Latzman; Writing – original draft, Claudio Sica, Gioia Bottesi, Robert D Latzman.

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### Declaration of competing interest

None.

### Appendix A. Supplementary data

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