the british psychological society
promoting excellence in psychology

British Journal of Health Psychology (2021), 26, 644–656

www.wileyonlinelibrary.com

Special Section Article

Mental health of Italian adults during COVID-19 pandemic

Simone Amendola[1], Valentina Spensieri[1], Michael P. Hengartner[2] and Rita Cerutti[1]*

[1]Department of Dynamic and Clinical Psychology, Sapienza University of Rome, Italy
[2]Department of Applied Psychology, Zurich University of Applied Sciences, Switzerland

Objectives. On 31 January 2020, a new type of coronavirus was first confirmed in Italy and spread rapidly across the country leading to a national lockdown. The aim of this pilot study was to explore the impact of the public health emergency due to COVID-19 on individual's mental health among 299 Italian adults after a month of home isolation due to COVID-19.

Design. Cross-sectional study design. Adults of the general population were invited to a voluntary online health survey.

Methods. Hierarchical multiple regressions were used to examine diverse psychosocial and stressful contextual factors associated with symptoms of psychopathology.

Results. Results indicated that females reported higher symptoms of depression, anxiety and circadian rhythm dysregulation, than males. Age and the capacity to adapt to a new environment and to cope with illness were negatively associated with all symptoms of psychopathology. Conversely, engaging in verbally aggressive behaviours and having experienced stressful events related to COVID-19 were positively related to psychopathological symptoms. Finally, social support was negatively associated with depressive symptoms, and substance use during the past months was related to circadian rhythm dysregulation.

Conclusions. The findings of this study raise particular concern about psychological well-being considering the negative associations between stressful events during the COVID-19 pandemic, symptoms of psychological distress, and perceived social support. These results have possible significant clinical implications.

Statement of contribution

What is already known on this subject?

- Public health emergencies and related quarantine requirements are related to emotional, social, and economic changes in people's lives.
- Current research indicates a higher prevalence rate of anxiety, depression, insomnia, stress-related symptoms, and alcohol consumption among samples of the general populations due to COVID-19 isolation.

*Correspondence should be addressed to Rita Cerutti, Department of Dynamic and Clinical Psychology, Sapienza University of Rome, via degli Apuli 1, Rome 00185, Italy (email: rita.cerutti@uniroma1.it).

DOI:10.1111/bjhp.12502

What does this study adds?

- After one month of lockdown, mental health of males and females is similarly affected.
- Participants report to have suffered (15.1%) or acted (19.4%) verbal aggressions.
- Age, resilience, stressful events, and verbal aggressions are associated with psychological distress.

Background

The World Health Organization (WHO) defined the new 2019 coronavirus (COVID-19) as a pandemic on 11 March 2020. First in China and immediately afterwards, in Italy a lockdown was declared to contain the rapid spread of this virus. On the basis of health monitoring relating to the spread of the new coronavirus on Italian territory, there were 195,351 confirmed cases since the beginning of the outbreak up until 26 April 2020. At the moment, the positive cases of infection caused by a novel coronavirus, SARS-CoV-2, are 105,847 with 21,533 hospitalized patients, 2,102 in intensive care units, 82,212 with symptoms of coronavirus in home isolation, while the recovered cases are 63,120 and 26,384 deaths. Most of the COVID-19 cases and deaths are limited to Northern Italy.

The outbreak has generated drastic emotional, social, and economic changes in people's lives. Fear, anger, frustration, and anxiety are common psychological responses (Dong & Bouey, 2020). Post-traumatic stress disorder symptoms involve trouble falling asleep, memory and concentration difficulties, hyper-vigilance and hyperarousal, mood dysregulation, and alcohol/drug abuse and were observed in health care professionals involved in a number of emergency conditions (Wu et al., 2009). Individual's psychological conditions significantly deteriorated under the outbreak of COVID-19 (Li, Wang, Xue, Zhao, & Zhu, 2020) since the uncertainty and severity of this pandemic situation not only impacts physical health, but also impacts mental health and well-being, particularly with respect to individual's emotions and cognitions. The doubtful incubation period of the virus and its possible asymptomatic transmission, its unpredictable course, the long healing process, the high number of deaths due to COVID-19, and the possibility that people may become infected for a second time represent experiences of uncertainty and instability that increase fear and anxiety responses. Additionally, social isolation and quarantine to contain the spread of the virus reduce the number of new infected cases but have a distressing impact on psychological well-being, producing feelings of loneliness and anger (Brooks et al., 2020; Xiang et al., 2020). Current research indicates a higher prevalence rate of anxiety, depression, insomnia, stress-related symptoms, alcohol consumption, and lower mental health well-being among Chinese people due to COVID-19 isolation (Ahmed et al., 2020; Liu et al., 2020).

However, at this time, the majority of studies on the psychological impact of this pandemic and the epidemiological data on mental health problems due to the outbreak of COVID-19 have only been conducted among the Chinese population.

The aim of this study, that we have entitled, 'Well-Being and Isolation due to SARS-CoV-2 Pandemic (WBISC2) Study', was to explore the impact of COVID-19 public health emergency on individual's mental health among an Italian adult population exploring psychopathological symptoms during the prolonged lockdown. In particular, we tested whether stressful contextual factors possibly associated with the isolation due to SARS-CoV-2 were related to symptoms of psychopathology after taking into account sociodemographic variables, resilience, and social support through an online survey. Given the period of unusual and mandatory social isolation at home, we

considered of interest the investigation of psychotic-like experiences in addition to symptoms of depression, anxiety, and circadian rhythm dysregulation. Previous studies have shown the relationship between psychotic-like experiences and social isolation (Butter, Murphy, Shevlin, & Houston, 2017), and that the distress associated with these experiences predicted the need for mental health care (Hanssen, Bak, Bijl, Vollebergh, & Van Os, 2005).

Materials and methods

Participants and procedure

The WBISC Study was conducted in Italy through an open web survey. Inclusion criterion was an age of 18 years or older, while living outside Italy during the national lockdown was an exclusion criterion. On 23 February 2020, the Council of Ministers approved a law decree that introduced urgent measures (e.g., isolation at home) to contain and manage the epidemiological emergency due to COVID-19 in Northern Italy (Governo Italiano, 2020). On 11 March, the '#IoRestoaCasa Decree' extended to the entire national territory the suspension of non-essential retail commercial activities, educational activities, prohibiting gatherings of people in public places, and allowing citizens to leave their house only for very limited purposes. Figure 1 shows the trend of the SARS-CoV-2 pandemic in Italy from 21 February to 25 April 2020.

Our report includes data regarding respondents' psychological health after just over a month of isolation at home due to SARS-CoV-2, that is, between 21 April 2020 and 26 April 2020. Three hundred and thirty-one adults from the general population participated. Participants older than 50 years (n = 20, age range: 51–74 years) were excluded from the analysis to avoid sample bias related to the underrepresentation of this age group in our sample. Therefore, after removing duplicates (n = 9), and multivariate outliers (n = 3), a final sample of 299 adults (27.1% males, n = 81) aged 18–50 years (M_{age} = 31.14; SD = 7.99) were included. The snowball sampling technique was used in order to find participants for the study. In order to advertise the survey, social media platforms were

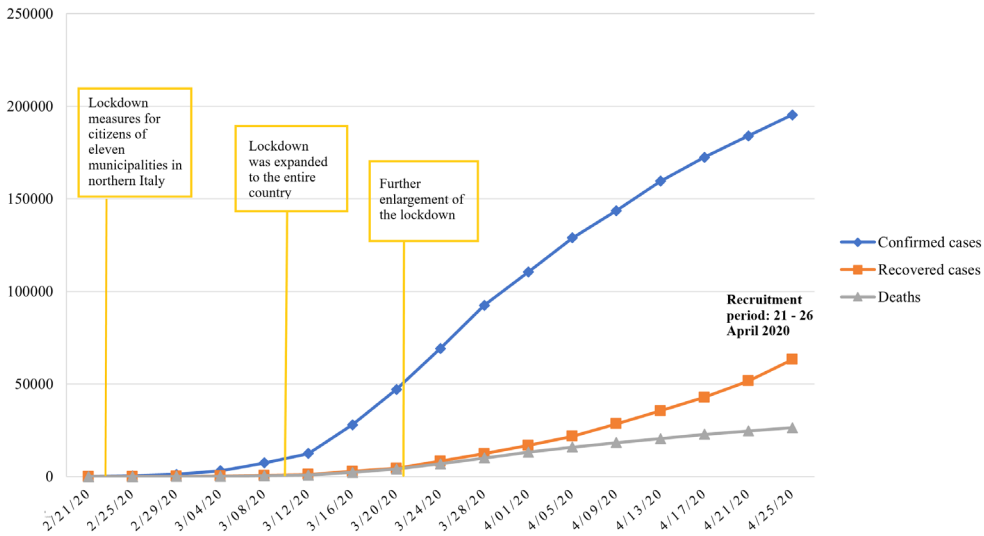

Figure 1. National epidemic trend of the number of people testing positive for SARS-CoV-2 in Italy from 21 February to 25 April 2020. [Colour figure can be viewed at wileyonlinelibrary.com]

used. Furthermore, the online survey was disseminated to university students, which were encouraged to invite other potential participants.

Participants' informed consent was obtained before starting the survey. Anonymity of participants was ensured by assigning them a code. This study was approved by the Ethics Committee of the Department of Dynamic and Clinical Psychology, Sapienza University of Rome.

Measures

Sociodemographic schedule

Participants provided information on sociodemographic aspects and potential stressful events during isolation due to COVID-19. The following variables were designed into our study: the presence of other house tenants; drug and alcohol consumption (i.e., 'During the past month, have you regularly taken (two or more times a week) drugs or quantities of alcohol that most people would consider above average?'); geographic zone of Italy; working place and activity; having suffered verbal and physical aggressive behaviours by housemates; having acted aggressively, both verbally and physically, against housemates; and having injured one's body voluntarily. A dichotomous response scale was used to explore the occurrence of events. Finally, stressful events due to COVID-19 were assessed through four questions (i.e., 'feeling that one's life was in danger'; 'having been infected by coronavirus, SARS-CoV-2'; 'feeling that the life of a family member or friend was in danger due to COVID-19'; and 'experiencing the death of a loved one due to COVID-19'). The sum of the stressful events was used for statistical analysis.

Connor-Davidson Resilience Scale 2 (CD-RISC2)

This is a two-item scale used to explore the ability to spring back and successfully adapt to change. Higher values indicate better levels of resilience (Vaishnavi, Connor, & Davidson, 2007). In the present study, Cronbach's alpha was .69.

Oslo Social Support Scale (OSSS-3)

This scale is a short questionnaire to explore social support through three items regarding the number of close confidants, sense of concern, or interest from other people and relationship to neighbours (Kocalevent et al., 2018; Meltzer, 2003). Higher values represent stronger levels of social support. In the present study, Cronbach's alpha was .50.

Italian version of the Brief Prodromal Questionnaire (iPQ-B)

The iPQ-B is a self-report questionnaire (21 items) used to screen individuals for positive symptoms of psychosis experienced over the past month (Loewy, Pearson, Vinogradov, Bearden, & Cannon, 2011; Scazza et al., 2018). The total distress score was used with higher values indicating stronger levels of distress (Loewy et al., 2011). In the present study, Cronbach's alpha was .84.

Biological Rhythms Interview of Assessment in Neuropsychiatry (BRIAN)

We adopted eight items (i.e., items 1, 2, 3, 9, 10, 12, 15, and 18) of the BRIAN to examine circadian rhythm dysregulation (i.e., sleep, activities, social rhythm, and eating patterns)

over the last 14 days (Giglio et al., 2009; Moro et al., 2014). For the purpose of the present study, we used the sum of the eight items to investigate circadian rhythm dysregulation. In the present study, Cronbach's alpha was .80.

Brief Symptom Inventory (BSI)

The BSI is a 53-item self-report instrument that assesses nine primary psychological symptom dimensions during the past seven days (Derogatis, 1975). For the purposes of the present study, depression and anxiety dimensions were used (Adawi et al., 2019). In the present study, Cronbach's alpha of the two dimensions was .88 (depression) and .90 (anxiety).

Statistical analysis

Descriptive statistics were used to evaluate the sample characteristics. Gender differences were tested using ANOVA and chi-square test of independence. Correlations between variables of interest were calculated. Hierarchical regression analysis was used to explore the relationships between psycho-social and stressful contextual factors and psychotic-like experiences, circadian rhythm dysregulation, depression, and anxiety symptoms: age, gender, level of education (i.e., dichotomized as Highly educated = '1', Intermediate education = '0') (*Step 1*); resilience and social support (*Step 2*); living alone, geographic zone of Italy (i.e., dichotomized as Northern = '1', Centre and South = '0') working outside the home (*Step 3*); and drug and alcohol consumption, stressful events related to COVID-19, having suffered verbal aggressive behaviours by housemates, and having acted verbally aggressively against housemates (*Step 4*). We checked the data to ensure the assumption of collinearity was met.

To determine whether the sample size was large enough for hierarchical regression analysis, an a priori power analysis using the 'G*Power 3.1' was run (Faul, Erdfelder, Buchner, & Lang, 2009). Results showed that the minimum sample size to detect a small-to-medium effect size (i.e., f^2 of 0.10), given a power of 0.95, a critical alpha of .05, and a model with 12 predictors, was approximately $N = 133$. Based on this calculation, the size of our sample was deemed to be adequate.

Statistical analysis was performed using SPSS, version 25.0. p values $< .05$ were considered statistically significant.

Results

Females showed a higher mean age than males, $F(1, 298) = 17.87$, $p < .001$ (Table 1). Approximately 58.9% of participants filled out the questionnaire battery from central Italy and 73.6% had a high educational qualification (Table 1).

Regarding potentially stressful events during the SARS-CoV-2 pandemic, 22.7% ($n = 68$) of participants worked outside the home, of which 8.82% ($n = 6$) were involved in taking care of infected patients. Few participants reported episodes of physical aggression. On the other hand, 15.1% and 19.4% of the sample suffered and acted verbally aggressively, respectively. Furthermore, 6 participants (2% of the sample, 5 females) injured their body voluntarily but without suicidal intent during isolation at home.

According to symptoms of psychological distress as evaluated by the questionnaires, the total sample ($N = 299$) showed a mean score of 10.35 ($SD = 11.88$) on the iPQ-B total

Table 1. Characteristics of the sample

	Total, *N* (%)	Male, *n* (%)	Female, *n* (%)
Demographic			
Age (*M* ± *SD*)*	31.14 ± 7.99	29.98 ± 7.66	34.26 ± 8.08
Geographic zone of Italy			
North	71 (23.7)	13 (16)	58 (26.6)
Centre	176 (58.9)	48 (59.3)	128 (58.7)
South and Islands	52 (27.4)	20 (24.7)	32 (14.7)
Level of education			
Post-graduate course	85 (28.4)	25 (30.9)	60 (27.5)
University degree	135 (45.2)	28 (34.6)	107 (49.1)
High school	73 (24.4)	25 (30.9)	48 (22)
Middle licence	6 (2)	3 (3.7)	3 (1.4)
Events during the isolation			
Living alone	34 (11.4)	14 (17.3)	20 (9.2)
Drug or above average alcohol use	38 (12.7)	14 (17.3)	24 (11)
Stressful events (*M* ± *SD*)	0.53 ± 0.83	0.51 ± 0.79	0.54 ± 0.84
Having suffered verbal aggressions	45 (15.1)	8 (9.9)	37 (17)
Having suffered physical aggression	1 (0.3)	1 (1.2)	–
Having acted verbal aggression	58 (19.4)	10 (12.3)	48 (22)
Having acted physical aggression	2 (0.7)	–	2 (0.9)
Protective factors			
Resilience (*M* ± *SD*)	6.21 ± 1.49	6.13 ± 1.48	6.24 ± 1.49
Social support (*M* ± *SD*)	10.2 ± 1.88	10.18 ± 1.96	10.21 ± 1.86

Note. *Significant difference at $p < .001$.

distress score; mean scores of 1.14 ($SD = 0.94$) for depression and 0.93 ($SD = 0.89$) for anxiety dimensions of the BSI, respectively; and, finally, a mean score of 18.13 ($SD = 5.13$) on circadian rhythm dysregulation. With respect to gender, females reported significantly higher symptoms of depression, female: $M = 1.24$, $SD = 0.93$; male: $M = 0.86$, $SD = 0.90$; $F(1, 298) = 9.85$, $p < .01$, anxiety, female: $M = 1.02$, $SD = 0.90$; male: $M = 0.70$, $SD = 0.80$; $F(1, 298) = 7.84$, $p < .01$, and circadian rhythm dysregulation, female: $M = 18.6$, $SD = 5.05$; male: $M = 16.89$, $SD = 5.16$; $F(1, 298) = 6.67$, $p < .01$. No difference was found in total distress associated with psychotic-like experiences (female: $M = 10.95$, $SD = 12.04$; male: $M = 8.72$, $SD = 11.36$). No other significant gender differences were found.

Negative statistically significant associations were found between all symptoms of distress and age, resilience, and social support (Table 2). On the other hand, stressful events due to COVID-19 were positively correlated with all symptoms of distress except for depressive symptoms. On the contrary, a negative association between stressful events and perceived social support was found.

Table 3 shows the hierarchical regression models. Age and resilience scores were negatively associated with all symptoms of distress. As age and resilience scores increased, symptoms of distress decreased. Males showed negative relationships with depressive and anxiety symptoms. Furthermore, only depressive symptoms decreased as social support score increased.

Regarding contextual factors, namely living alone, working outside the home during the spread of the infection, and living in the area most affected by COVID-19, were not

Table 2. Pearson's correlation between the variables of interest

	1.	2.	3.	4.	5.	6.	7.	8.
1. Age	1							
2. Stressful events due to COVID-19	.108	1						
3. Resilience	.100	−.093	1					
4. Social support	.097	−.168**	.275***	1				
5. iPQ-B total distress	−.221***	.204***	−.309***	−.217***	1			
6. Circadian rhythms dysregulation	−.327**	.133*	−.277***	−.192**	.364***	1		
7. Depressive symptoms	−.326***	.105	−.410***	−.284***	.432***	.592***	1	
8. Anxiety symptoms	−.205***	.138*	−.449***	−.128***	.514***	.469***	.764***	1

Note. iPQ-B = Brief Prodromal Questionnaire Italian version.
*$p < .05$.; **$p < .01$.; ***$p < .001$.

Table 3. Results of hierarchical regression analyses

	iPQ-B total distress		Circadian rhythms dysregulation		Depressive symptoms		Anxiety symptoms	
	B (*SE*)	95% confidence interval	*B* (*SE*)	95% confidence interval	*B* (*SE*)	95% confidence interval	*B* (*SE*)	95% confidence interval
Step 1								
Age	−0.30 (0.08)***	−0.47, −0.14	−0.18 (0.04)***	−0.25, −0.11	−0.03 (0.01)***	−0.04, −0.01	−0.01 (0.01)*	−0.02, −0.00
Gender (male)	−1.16 (1.48)	−4.07, 1.75	−1.03 (0.62)	−2.26, 0.20	−0.27 (0.11)*	−0.48, −0.06	−0.24 (0.1)*	−0.44, −0.04
Education (highly educated)	−1.77 (1.48)	−4.68, 1.14	−0.50 (0.62)	−1.73, 0.73	−0.14 (0.11)	−0.35, 0.07	−0.04 (0.1)	−0.24, 0.16
Adjusted R^2	.05		.11		.12		.05	
F	6.27***		12.92***		14.34***		5.86**	
Step 2								
Resilience	−1.85 (0.45)***	−2.74, −0.97	−0.63 (0.19)**	−1, −0.25	−0.19 (0.03)***	−0.26, −0.13	−0.24 (0.03)***	−0.3, −0.17
Social support	−0.45 (0.36)	−1.17, 0.26	−0.13 (0.15)	−0.43, 0.17	−0.05 (0.03)*	−0.10, 0.00	0.03 (0.02)	−0.01, 0.08
Adjusted R^2	.14		.17		.28		.23	
ΔR^2	.09		.07		.17		.19	
ΔF	16.52***		12.62***		35.14***		37.33***	
Step 3								
Working outside the home	0.62 (1.56)	−2.44, 3.68	−0.50 (0.66)	−1.79, 0.8	−0.09 (0.11)	−0.31, 0.13	0.02 (0.11)	−0.2, 0.23
Geographic zone (Northern Italy)	0.39 (1.55)	−2.66, 3.45	−0.31 (0.65)	−1.60, 0.98	−0.08 (0.11)	−0.30, 0.14	−0.09 (0.11)	−0.29, 0.13
Other home tenants	−1.3 (2.06)	−5.34, 2.75	−1.07 (.87)	−2.77, 0.63	−0.18 (0.15)	−0.47, 0.11	−0.09 (0.14)	−0.37, 0.19
Adjusted R^2	.13		.17		.28		.23	

Continued

Table 3. (*Continued*)

	iPQ-B total distress		Circadian rhythms dysregulation		Depressive symptoms		Anxiety symptoms	
	B (*SE*)	95% confidence interval	*B* (*SE*)	95% confidence interval	*B* (*SE*)	95% confidence interval	*B* (*SE*)	95% confidence interval
ΔR^2	.00		.00		.00		.00	
ΔF	0.23		0.13		0.19		0.08	
Step 4								
Drug or above average alcohol use	0.44 (1.93)	−3.35, 4.24	2.07 (0.81)*	0.47, 3.67	0.24 (0.14)	−0.04, 0.51	0.05 (0.13)	−0.21, 0.31
Stressful events due to COVID-19	2.44 (0.79)**	0.89, 3.99	0.83 (0.33)*	0.18, 1.49	0.08 (0.06)	−0.03, 0.2	0.11 (0.05)*	0.01, 0.22
Having suffered verbal aggressions	−5.04 (2.33)*	−9.63, −0.45	−0.71 (.98)	−2.65, 1.22	0.12 (0.17)	−0.21, 0.45	0.14 (0.16)	−0.17, 0.46
Having acted verbal aggression	6.41 (2.11)**	2.26, 10.56	2.73 (0.89)**	0.99, 4.48	0.44 (0.15)**	0.14, 0.74	0.57 (0.14)***	0.29, 0.86
Adjusted R^2	.18		.22		.32		.31	
ΔR^2	.06		.06		.05		.09	
ΔF	5.02***		5.79***		5.6***		9.54***	

Note. All unstandardized regression coefficients are from the final step in the analyses. iPQ-B = Brief Prodromal Questionnaire Italian version. $N = 299$.
*$p < .05$.; **$p < .01$.; ***$p < .001$.

related to symptoms of psychopathology. Having acted verbally aggressive against other house tenants and stressful events due to COVID-19 were positively associated with nearly all symptoms of distress (except the lack of association between stressful events and depressive symptoms). Finally, substance use during the last month was related to circadian rhythm dysregulation, while having suffered verbal aggression was negatively related to psychotic-like experiences' total distress. Tests regarding the assumption of collinearity indicated that multicollinearity was not a concern (VIF between 1.06 (drug or alcohol consumption) and 1.80 (having suffered verbal aggressions)). The data met the assumption of independent errors (Durbin–Watson value = 2.01 for psychotic-like experiences; 1.94 for circadian rhythm dysregulation; 1.92 for depression; 2.17 for anxiety).

Discussion

Several studies have suggested that public health emergencies and related quarantine requirements can represent a risk factor for the onset and the increased severity of psychopathological symptoms (i.e., depression, PTSD symptoms, anxiety; Brooks et al., 2020; Hawryluck et al., 2004). More specifically, social distancing and self-imposed isolation have a significant impact on people's lives and well-being outcomes, producing greater distress and causing psychological problems. In the light of the above considerations, including the paucity of data regarding the psychological distress among Italian citizens during the outbreak of SARS-CoV-2, the primary aim of the present pilot study was to examine the psychological features of Italian individuals aged 18–50 by providing a picture of their psychological distress after over a month of home isolation.

According to studies on the previous SARS-CoV-2 pandemic, our findings highlight the considerable presence of psychological distress among Italians, with high level of depressive and anxious symptoms and a dysregulation of circadian rhythms during the COVID-19 emergency. However, in contrast to Ahmed et al. (2020), who showed non-significant gender differences in anxiety, depression, and mental health well-being when exploring the psychological problems related to the new COVID-19 in China, we found higher levels of psychopathological symptoms in females. These results are in line with the international literature showing gender differences in mental health (Viana & Corassa, 2020). However, it is important to underline that lockdowns are a new type of situation that may impact the mental health of men and women in both similar and differing ways.

The present study was also designed to explore the role played by specific participant characteristics in predicting psychopathological outcomes during the health emergency. In order to further verify our hypothesis, hierarchical regression analysis was carried out since it ensures a better exploration of the relationships investigated. Our findings emphasized the presence of both protective and risk factors for mental health well-being. Specifically, age and resilience were significantly and negatively related to psychopathological symptoms and may represent important protective factors for psychological distress. The regression analyses also showed that stressful life events related to COVID-19 and having engaged in verbally aggressive behaviours were associated with an increased severity in psychological symptoms, expanding our knowledge of the existing literature regarding the negative consequences of the SARS-CoV-2 pandemic on mental health. Moreover, in line with a recent review on the psychological impact of quarantine during major infectious disease outbreaks (Brooks et al., 2020), demographic factors such as

working outside the home, living in different geographic zones of Italy and having other home tenants were not associated with psychological outcomes.

Nowadays, considering the limited information on the psychopathological outcomes during the lockdown due to this new public health emergency, the findings of our study strengthen the notion that exposure to stressful events linked to the SARS-CoV-2 pandemic has a significant impact on psychological symptoms of distress.

Moreover, these findings support our hypothesis and raise particular concern for psychological well-being considering the negative associations between stressful events and perceived social support that emerged in this study.

Our results should be interpreted while keeping some limitations in mind. First off, we recognize the importance of longitudinal data to confirm the above assumptions. Secondly, our sample is an unrepresentative convenience sample, with a high proportion of well-educated people, which could have led to selection bias, while controlling for many variables could have introduced collider-stratification bias. However, we underline that this is a pilot study that included a short evaluation period. Lastly, social desirability response bias may also have affected the results.

Despite these limitations, findings from our WBISC2 Study have clinical implications for the prevention of increased psychological distress and may be used for planning psychological interventions in order to improve mental health and psychological resilience during public health emergencies.

Conflicts of interest

All authors declare no conflict of interest.

Author contributions

Simone Amendola (Conceptualization; Data curation; Formal analysis; Investigation; Methodology; Visualization; Writing – original draft; Writing – review & editing) Valentina Spensieri (Investigation; Methodology; Visualization; Writing – original draft; Writing – review & editing) Michael P. Hengartner (Methodology; Supervision; Visualization) Rita Cerutti (Conceptualization; Methodology; Supervision; Validation; Writing – original draft; Writing – review & editing).

Data availability statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

References

Adawi, M., Zerbetto, R., Re, T. S., Bisharat, B., Mahamid, M., Amital, H., Bragazzi, N. L., et al. (2019). Psychometric properties of the Brief Symptom Inventory in nomophobic subjects: Insights from preliminary confirmatory factor, exploratory factor, and clustering analyses in a sample of healthy Italian volunteers. *Psychology Research and Behavior Management*, *12*, 145–154. http://dx.doi.org/10.2147/prbm.s173282

Ahmed, M. Z., Ahmed, O., Aibao, Z., Hanbin, S., Siyu, L., & Ahmad, A. (2020). Epidemic of COVID-19 in China and associated psychological problems. *Asian Journal of Psychiatry*, *51*, 102092. https://doi.org/10.1016/j.ajp.2020.102092

Brooks, S. K., Webster, R. K., Smith, L. E., Woodland, L., Wessely, S., Greenberg, N., & Rubin, G. J. (2020). The psychological impact of quarantine and how to reduce it: Rapid review of the evidence. *The Lancet*, *395*(10227), 912–920. https://doi.org/10.1016/S0140-6736(20)30460-8

Butter, S., Murphy, J., Shevlin, M., & Houston, J. (2017). Social isolation and psychosis-like experiences: A UK general population analysis. *Psychosis*, *9*(4), 291–300. https://doi.org/10.1080/17522439.2017.1349829

Derogatis, L. R. (1975). *Brief symptom inventory*. Baltimore, MD: Clinical Psychometric Research.

Dong, L., & Bouey, J. (2020). Public mental health crisis during COVID-19 pandemic, China. *Emerging Infectious Diseases*, *26*(7), 1616–1618. https://doi.org/10.3201/eid2607.200407

Faul, F., Erdfelder, E., Buchner, A., & Lang, A. G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, *41*, 1149–1160. https://doi.org/10.3758/BRM.41.4.1149

Giglio, L. M. F., da Silva Magalhães, P. V., Andreazza, A. C., Walz, J. C., Jakobson, L., Rucci, P., et al. (2009). Development and use of a biological rhythm interview. *Journal of Affective Disorders*, *118*(1–3), 161–165. https://doi.org/10.1016/j.jad.2009.01.018

Governo Italiano (2020). Coronavirus, le misure adottate dal Governo. Retrieved from http://www.governo.it/it/coronavirus-misure-del-governo

Hanssen, M., Bak, M., Bijl, R., Vollebergh, W., & Van Os, J. (2005). The incidence and outcome of subclinical psychotic experiences in the general population. *British Journal of Clinical Psychology*, *44*(2), 181–191. https://doi.org/10.1348/014466505X29611

Hawryluck, L., Gold, W. L., Robinson, S., Pogorski, S., Galea, S., & Styra, R. (2004). SARS control and psychological effects of quarantine, Toronto, Canada. *Emerging Infectious Diseases*, *10*(7), 1206–1212. https://doi.org/10.3201/eid1007.030703

Kocalevent, R. D., Berg, L., Beutel, M. E., Hinz, A., Zenger, M., Härter, M., et al. (2018). Social support in the general population: Standardization of the Oslo social support scale (OSSS-3). *BMC Psychology*, *6*(1), 31. https://doi.org/10.1186/s40359-018-0249-9

Li, S., Wang, Y., Xue, J., Zhao, N., & Zhu, T. (2020). The impact of COVID-19 epidemic declaration on psychological consequences: A study on active Weibo users. *International Journal of Environmental Research and Public Health*, *17*(6), 2032. https://doi.org/10.3390/ijerph17062032

Liu, S., Yang, L., Zhang, C., Xiang, Y.-T., Liu, Z., Hu, S., & Zhang, B., et al. (2020). Online mental health services in China during the COVID-19 outbreak. *Lancet Psychiatry*, *7*(4), E17–E18. https://doi.org/10.1016/S2215-0366(20)30077-8

Loewy, R. L., Pearson, R., Vinogradov, S., Bearden, C. E., & Cannon, T. D. (2011). Psychosis risk screening with the Prodromal Questionnaire—brief version (PQ-B). *Schizophrenia Research*, *129*(1), 42–46. https://doi.org/10.1016/j.schres.2011.03.029

Meltzer, H. (2003). Development of a common instrument for mental health. In A. Nosikov & C. Gudex (Eds.), *EUROHIS: Developing common instruments for health surveys*, (35–60). Amsterdam, The Netherlands: IOS Press.

Moro, M. F., Carta, M. G., Pintus, M., Pintus, E., Melis, R., Kapczinski, F., … Colom, F. (2014). Validation of the Italian Version of the Biological Rhythms Interview of Assessment in Neuropsychiatry (BRIAN): Some considerations on its screening usefulness. *Clinical Practice and Epidemiology in Mental Health*, *10*, 48–52. https://doi.org/10.2174/1745017901410010048

Scazza, I., Pelizza, L., Azzali, S., Paterlini, F., Garlassi, S., Chiri, L. R., et al. (2018). Reliability of the Italian version of the Brief (21-item) Prodromal Questionnaire (IPQ-B) for psychosis risk screening in a young help-seeking population. *Journal of Psychopathology*, *24*(4), 204–214.

Vaishnavi, S., Connor, K., & Davidson, J. R. (2007). An abbreviated version of the Connor-Davidson Resilience Scale (CD-RISC), the CD-RISC2: Psychometric properties and applications in

psychopharmacological trials. *Psychiatry Research*, *152*(2-3), 293–297. https://doi.org/10.1016/j.psychres.2007.01.006

Viana, M. C., & Corassa, R. B. (2020). Epidemiology of psychiatric disorders in women. In J. Rennó, G. Valadares, A. Cantilino, J. Mendes-Ribeiro, R. Rocha, & A. Geraldo da Silva (Eds.), *Women's mental health*, (17–29). Cham, Switzerland: Springer.

Wu, P., Fang, Y., Guan, Z., Fan, B., Kong, J., Yao, Z., . . . Hoven, C. W. (2009). The psychological impact of the SARS epidemic on hospital employees in China: Exposure, risk perception, and altruistic acceptance of risk. *The Canadian Journal of Psychiatry*, *54*(5), 302–311. https://doi.org/10.1177/070674370905400504

Xiang, Y.-T., Yang, Y., Li, W., Zhang, L., Zhang, Q., Cheung, T., & Ng, C. H. (2020). Timely mental health care for the 2019 novel coronavirus outbreak is urgently needed. *Lancet Psychiatry*, *7*(3), 228–229. https://doi.org/10.1016/S2215-0366(20)30046-8