Mediterranean Journal of Clinical Psychology

ISSN 2282-1619

MJCP

Volume 10, n 2, 2022

Clinical Psychology

Psychological effects of COVID-19 in general Italian population in function of age and gender

Rossella Procaccia [1], Giulia Segre [1], Gian Mauro Manzoni [1]*

Abstract

Background: Coronavirus Disease 2019 (COVID-19) was first recorded in late 2019 in the city of Wuhan, China. Italy was one of the hardest hit countries and on March 8th 2020 the Italian Government introduced a range of 'lockdown' restrictive measures, e.g., isolation and social distancing, intended to slow down the progression of the pandemic. Previous research conducted during this pandemic have demonstrated a wide range of negative psychological effects on both the individuals and the community, but the moderating factors are not yet well known. This study aimed to evaluate if the psychological, emotional and behavioral effects of COVID-19 and related restrictive measures are predicted by age and gender in a sample of Italian citizens.

Methods: Following a snowball sampling technique, 300 individuals completed different online questionnaires aimed at measuring anxiety, PTSD and depression symptoms.

Results: Results showed that gender predicted anxiety and PTSD symptoms, with women showing higher scores; age predicted PTSD and depressive symptoms with younger participants showing higher scores; gender*age effects predicted anxiety and depression scores.

Conclusions: In order to plan preventive intervention in general population during pandemic, great caution must be given to vulnerable groups, such as female and young.

[1] Department of Psychology, E-Campus University, Novedrate (CO), Italy

E-mail corresponding author: rossella.procaccia@uniecampus.it

Keywords:
COVID-19; Psychological adjustment; Clinical psychology; General population; Age; Gender.

Received: 19 February 2022
Accepted: 1 August 2022
Published: 31 August 2022

Citation: Procaccia, R., Segre, G., Manzoni, G.M. (2022). Psychological effects of COVID-19 in general Italian population in function of age and gender. *Mediterranean Journal of Clinical Psychology, 10*(2).
https://doi.org/10.13129/2282-1619/mjcp-3369

1. Introduction

The Coronavirus Disease 2019 (COVID-19) was first recorded in late 2019 in the city of Wuhan, China. It spread rapidly on a global scale with an increasing death toll and the outbreak was declared a pandemic by the World Health Organization (World Health Organization, 2020).

Italy was one of the hardest hit countries. At the beginning of March 2020, a dramatic increase of positive cases and hospitalizations were quickly reported, especially in Northern part. On March 8th, 2020, the Italian Government introduced a range of 'lockdown' restrictive measures intended to slow down the progression of the COVID-19 outbreak in the national territory. Movement restrictions as well as isolation and social distancing have also been imposed in different countries worldwide to stop the virus spread: people were allowed to leave home only if strictly necessary.

Previous studies, both national and international, showed that quarantine was associated with an increase in emotional exhaustion, irritability, anxiety, depression, post-traumatic stress symptoms and sleep related disturbances (Bonati et al., 2021; Gray et al., 2020; Roma et al., 2020; Xiong et al., 2020; Wang et al., 2021). When people experience increased psychological distress, they may rely on maladaptive coping mechanisms, including using alcohol and drugs, gambling, overeating and exercise addiction (Avena et al., 2021; Daglis, 2021; Dubey et al., 2020; Lim, 2020; Rumpf et al., 2020). Dubey et al. (2020) showed a bi-directional relationship between COVID-19 and addiction. People with Substance Use Disorders (SUD) are at greater risk of worse COVID-19 outcome. Withdrawal emergencies and death are also being increasingly reported. Addicted people are especially facing difficulties in accessing the healthcare services which are making them prone to procure drugs by illegal means. Over half of U.S. adults reported that the coronavirus outbreak has had a negative impact on their mental health (Avena et al., 2021). Of those adults, 12% reported an increase in alcohol or drug use. Gambling has also increased considerably between March and August 2020 (for a review see Brodeur et al., 2021; Frisone et al., 2021; Sachdeva et al., 2021; Yahya et al., 2020). Along with drugs, alcohol and gambling, Americans have turned to food to alleviate stress. A WebMD poll in May 2020 reported that 44% of women and 22% of men had already experienced weight gain just 2 months into government-imposed shutdowns (Avena et al., 2021). Finally, several studies underlined the development of exercise addiction. Originally aimed at preventing the transmission of COVID-19, some people might risk adapting this new lifestyle by overdoing exercise and developing an unhealthy obsession with physical fitness and exercise (Lim, 2021; Egorov & Szabo, 2013; Freimuth et al., 2011).

The results of a Chinese study (Wang et al., 2021) stated that 29.2% of the participants reported having one of the moderate to severe mental health issues including symptoms of depression, anxiety, insomnia, and acute stress. In particular, the most vulnerable groups of the quarantined population included those with pre-existing mental disorders, with insecure style attachment, behavioral addiction or chronic physical diseases, frontline workers, children, those in the most severely affected areas during outbreak, infected or suspected patients, and those who are less financially well-off (Bova et al., 2021; Ferraro et al., 2021; Maniaci et al., 2021; Martinotti et al., 2020; Procaccia et al., 2021; Rollè et al., 2022; Segre et al., 2021).

Similarly, psychological well-being and prevalence of clinically significant mental distress were measured in a large sample from Wales 11–16 weeks into lockdown and compared to population-based data collected in 2019 before the COVID-19 pandemic. Clinically significant psychological distress was found in around 50% of the population, with around 20% showing "severe" effects: a 3–4-fold increase in prevalence mainly affected younger adults, women, and those from areas of greater deprivation (Gray et al., 2020).

Several surveys (Bonati et al., 2021; Castiglioni & Gay, 2020; Roma et al., 2020; Rossi et al., 2020) assessed the mental health consequences in the Italian general population. An increase in anxiety and depressive symptoms was reported in those who had lived four weeks of lockdown; moreover, 37% of the sample showed post-traumatic stress symptoms (Rossi et al., 2020). Other Italian studies also highlighted higher levels of distress, sleep disorders and physical symptoms among Italian participants (Casagrande et al., 2020; Di Renzo et al., 2020; Somma et al., 2020). Interestingly, a two-month follow-up study was conducted during the last days of the first phase lockdown (Roma et al., 2020) and it reported that stress and depressive symptoms increased with time, but not anxiety. Those symptoms may persist long after lockdown has ended (Gonzalez-Sanguino et al., 2021; Pieh et al., 2021); therefore, it is essential to monitor the distress which in the long-term may exert a critical impact on individuals' wellbeing, mental health, and quality of life.

A review conducted at the beginning of the pandemic by Brooks and colleagues (2020) showed that long quarantine period, fear of infection, frustration, boredom, inadequate supplies and information and financial losses were relevant stressors associated with negative psychological effects of quarantine such as post-traumatic stress, confusion, and anger. Specifically, this study was aimed at exploring the effects of quarantine on psychological wellbeing, and the factors that contribute to, or mitigate, these effects; their findings didn't provide strong evidence that any particular demographic factor was associated with mental health outcome.

However, other recent studies (Di Renzo et al., 2020; Mazza et al., 2020) showed that the percentage of females declaring mental health symptoms during the COVID-19 lockdown was significantly higher than the percentage of males. The risk of developing anxiety, depression, distress or PTSD was double in female compared to male participants (Bonati et al., 2021; Fiorillo et al., 2020; Wang et al., 2020). An increased incidence of sensory disorder in female subjects without a history of mental pathologies was detected too (Moroianu et al., 2021). On the contrary, research showed that men are more at risk to develop behavioral addiction in pandemic period (Frisone et al., 2020).

A Spanish study (Ausin et al., 2020) specifically focused on gender-related differences in the psychological impact of COVID-19, after two and five weeks of confinement; women showed more symptoms of depression, anxiety and PTSD, more feelings of loneliness and less spiritual wellbeing than men. Moreover, the psychological impact caused by the pandemic was maintained over time and increased for depression. However, a study conducted on Chinese youths have found that men reported more distress, PTSD symptoms and a higher use of negative coping measures (Liang et al., 2020).

Not only gender, but age too was investigated as moderating factor on psychological distress during COVID-19. Results showed that a higher prevalence of psychological distress was linked to young adulthood: the greatest vulnerability to distress could be due to the precariousness of the working activity with consequent interruption of income, and/or to the initial phase of professional activity's development, and/or presence of children with resulting in related concerns and the constraint of a forced cohabitation in a phase of release from the family of origin (Costantini & Mazzotti, 2020).

The psychological impact of COVID-19 confinement seems to ameliorate as people get older: the youngest participants (< 35 years old) showed higher levels of depression, anxiety, stress, insomnia and post-traumatic symptoms compared to all the other age groups (Rossi et al., 2021; Xiong et al., 2020). One study (García-Portilla et al., 2021) specifically focused on the psychological impact of people aged ≥60: despite the high percentage of emotional distress reported in older adults, they were at lower risk of developing depressive and stress consequences from than those under 60 years of age. On the contrary, the findings of another study (Vicario-Merino & Muñoz-Agustín, 2020) showed that stress levels tend to increase with as the age ranges increases, arriving at its maximum for the 56-65 ages, as these are the key productive population and the ones in a most vulnerable position for economic distress, while no differences were reported on the anxiety levels among the age ranges.

Together, these inconsistent findings strongly suggest the need to further investigate the relationship between psychological impact and specific demographic factors such as gender and age. The present study aimed thus to evaluate if psychological, emotional and behavioral impacts of COVID-19 and related restrictive measures is predicted by age and gender.

We hypothesized to find high levels of psychological distress (in terms of PTSD, depression and anxiety symptoms) in the Italian general population during COVID-19 pandemic (H1); a moderating effect on psychological distress of gender, with higher levels of symptoms in woman (H2); a moderating effect on psychological distress of age, with higher levels of symptoms in young (H3); an interaction effect of gender and age in psychological distress (H4).

2. Materials and methods

2.1 Participants and procedures

A Google form was launched on 1st June 2021 at 10 am and closed on 1 July at 10 pm. A snowball sampling technique through different social networks, such as Facebook and LinkedIn, was used to reach the highest number of Italian citizens. Brief posts informed about the study aim, procedures, and inclusion criteria, and invited to participate to the survey by clicking a web link to the Google form. Inclusion criteria were: 1) living in Italy; 2) not showing current symptoms of COVID-19; and 3) being at least 18 years old.

Before filling in the questionnaires, individuals were fully informed on the study and were asked to provide two consents, the first one for participation and the second one for the treatment of personal data.

The Google form was accessed by 337 respondents, 37 out of whom did not complete it and were excluded from analyses.

Demographics statistics show that 60,7% of participants were women, and the median age was 37.37 years old (SD = 16.61). The majority of the sample had high school diploma; most of them were employed, or student. Participants came mostly from Central Italy and the majority of them was living with parents, families or cohabiting in a stable way with a partner; 21.3% has been previously infected by Coronavirus. (see Table 1).

Table 1. Demographics

Total number	300	
Gender		
male	118	39.3%
female	182	60.7%
Age (years)		
mean (SD)	37,37 (16,61)	
min-max	18	87
youth (18 to 24)	110	36.7%
young adult (25 to 39)	61	20.3%
adult (40 to 59)	66	22%
senior (≥ 60)	63	21%
Education		
Primary school	6	2%
Junior high school	24	8%
Senior high school	131	43.7%
Bachelor Degree	83	27.7%
Degree	40	13.3%
Post-graduate degree	11	3.7%
Phd	5	1.7%
Professional occupation		
unemployed	20	6.7%
student	95	31.7%
employed	102	34%
self-employed	67	22.3%
retired	16	5.3%
Place of residence		
North Italy	69	23%
Central Italy	168	56%
South Italy	63	21%
Living with		
living alone	37	12.3%
with parents	123	0,41%
with friends	10	3.3%
with a partner	44	14.7%
with husband/wife and children	86	28.66%
Infected with Covid 19		
Yes	64	21.3%
No	236	78.7%

2.2 Measures

The Google Form was composed of three sections. The first one included demographic questions, e.g. gender, age, education, occupational status, marital and housing status. The second one included the following questions about: 1) *illness status* (if they and/or a significant other were infected and the gravity of physical symptoms); 2) *emotional impact* (concerns during lockdown; emotions and coping strategies to cope the negative emotions; thoughts and feelings about illness and lockdown; sleep disturbances; beliefs/projects/concerns for the future; concerns for job and academic achievements); 3) *behavioral impact* (behaviors during quarantine; sources of information about pandemic; confidence in government intervention; attitude about limitations and vaccinations).

The last section included the following questionnaires:

The *Coronavirus Anxiety Scale* (CAS) (Lee, 2020; Mozzoni & Franzot, 2020). The CAS is a self-report tool designed to measure the levels of dysfunctional anxiety associated with COVID-19. It is composed by five items employing a 5-point Likert scale (i.e., responses ranging from never to almost every day in the last 2 weeks). A CAS score ≥9 optimally classified adults as having (90% sensitivity) or not having (85% specificity) dysfunctional levels of anxiety (Youden's index of 75).

The *Los Angeles Symptom Checklist* (LASC) (King et al., 1995). The LASC is a self-report instrument that includes 43 items and measures overall global distress related to trauma exposure, overall PTSD symptomology severity, PTSD symptoms on three subscales (re-experiencing, avoidance/numbing, and hyperarousal) and depression scale. The instrument was shown to possess high internal consistency with α coefficients ranging from 0.88 to 0.95 (King et al., 1995). In this study α coefficients were 0.92 for ptsd scale and 0.91 for depression scale. LASC items were translated in Italian following back translation procedure.

2.3 Data analysis

Frequencies or means and standard deviations were computed for all variables. A series of Chi^2 analyses were conducted to test differences in emotional and behavioral impacts questions between males and females as well as between youth (18 to 24), young adult (25 to 39), adult (40 to 59) and senior (≥ 60), while the non-parametric Kendall's tau correlation was used to assess if anxiety, PTSD and depression scores were associated to age and gender. Hierarchical multiple regression analyses were finally conducted to assess if PTSD, depression and anxiety symptoms were predicted by gender, age and interactive effects.

SPSS Version 21.0 was used to obtain descriptive statistic and run statistical tests.

3. Results

3.1 Psychological, emotional, and behavioral impacts of COVID- 19

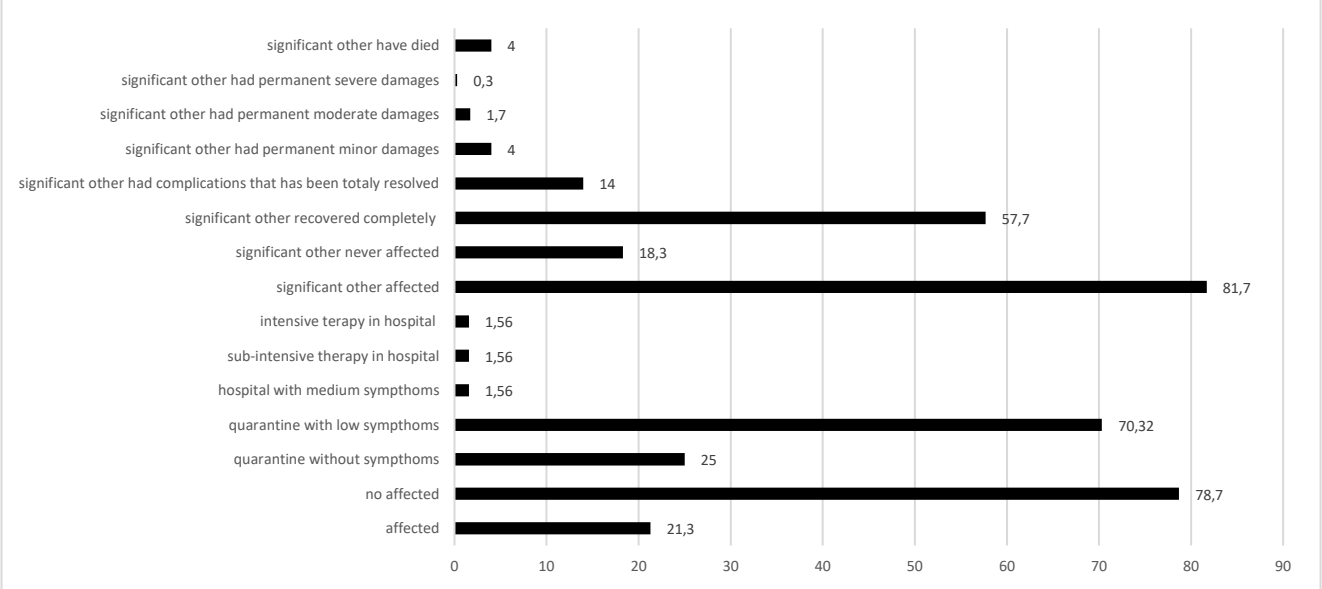
Descriptive statistics show that, on average, respondents had medium level of PTSD and depressive symptoms according to thresholds suggested by King et al. (1995), and that 21.3% reported a high level of anxiety associated to COVID-19 (Lee, 2020) (see Table 2).

Table 2. PTSD, depression and anxiety symptoms in Italian population

Variable	*N*	*Mean*	*Std Dev*	*Minimum*	*Maximum*
ptsd	300	17.58	14.83	0	65
depression	300	3.32	3.06	0	14
anxiety of Covid	300	3.18	3.67	0	17
		%			
anxiety of Covid ≥ 9	64	21.3			
anxiety of Covid < 9	236	78.7			

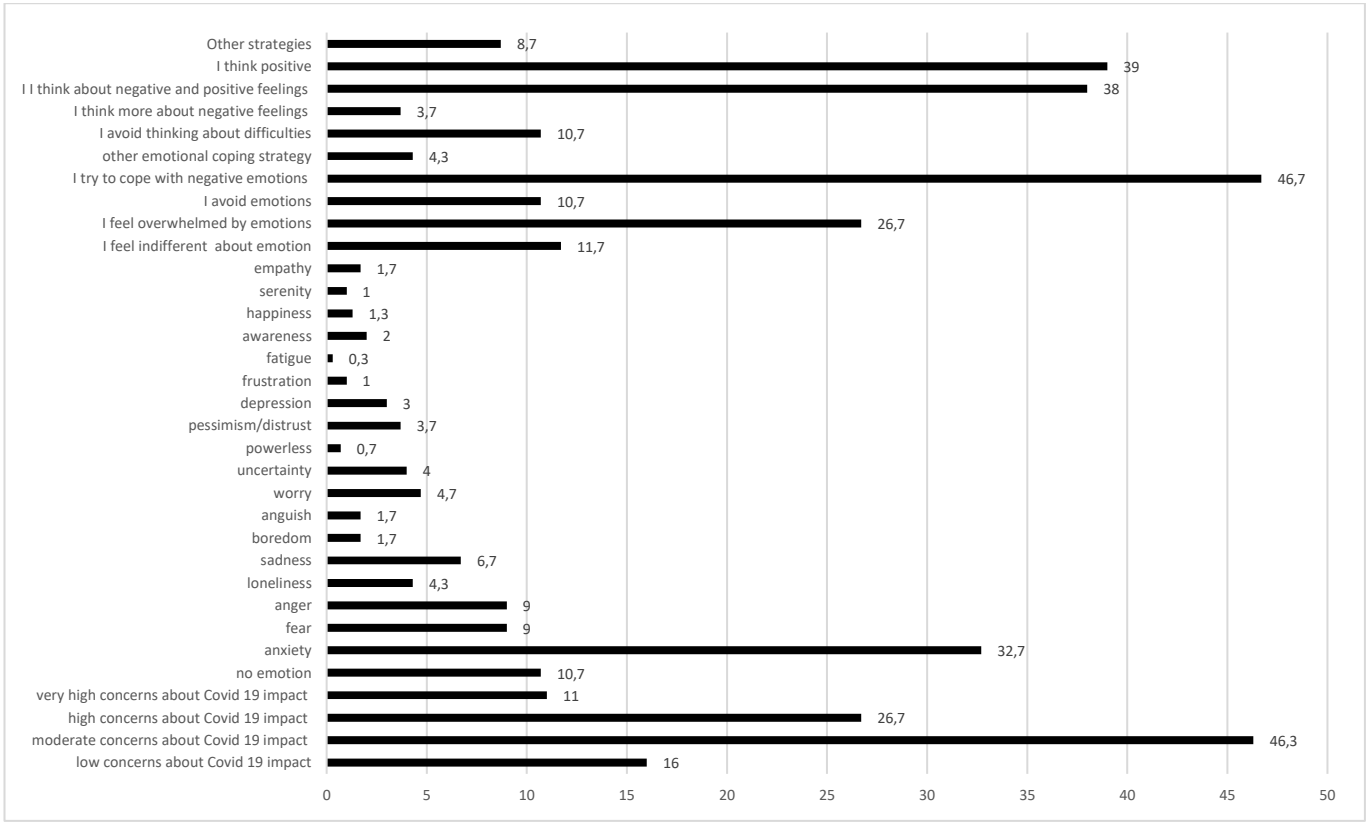
With respect to the *illness status* questions (see Graphic 1), 21.3% reported to have been previously affected by COVID-19. Majority were treated at home showing low symptoms, but 1,56% of them were recovered in hospital with moderate or severe symptoms respectively. 81,7% had a significant other affected. The most of them completely and easily healed, but 14% showed complications and fewer cases presented permanent damages; 4% died.

Graphic 1. Illness details



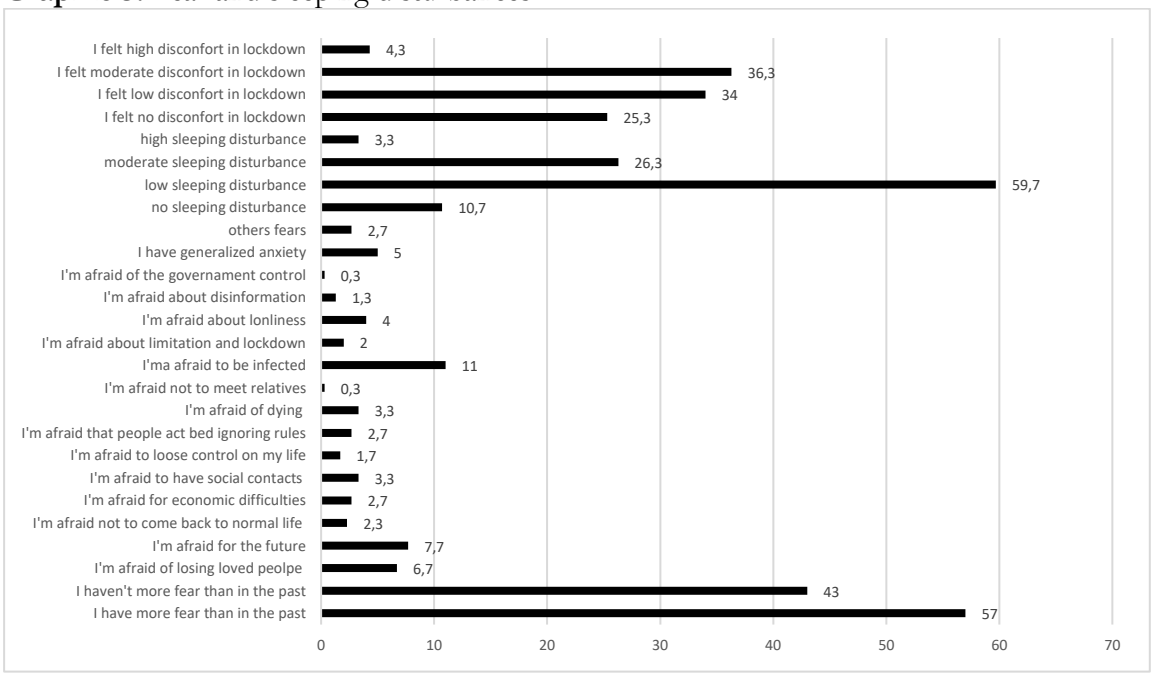
The most of respondents reported moderate or high concerns about the impact of COVID-19 in their lives. The most frequently cited emotions were anxiety, followed by fear, anger and sadness. As regards positive emotions, they referred awareness, happiness, and empathy more frequently. About coping strategies, most respondents tried to cope with negative emotions, but a high percentage felt overwhelmed by emotions or used avoidance defensive mechanism. To cope with the more general difficulties of the pandemic period, respondents mainly presented positive thinking, or they tried to consider both negative and positive feelings. However, 10.7% out of them, avoided thinking about difficulties (see Graphic 2).

Graphic 2. Emotions and coping strategies in pandemic time



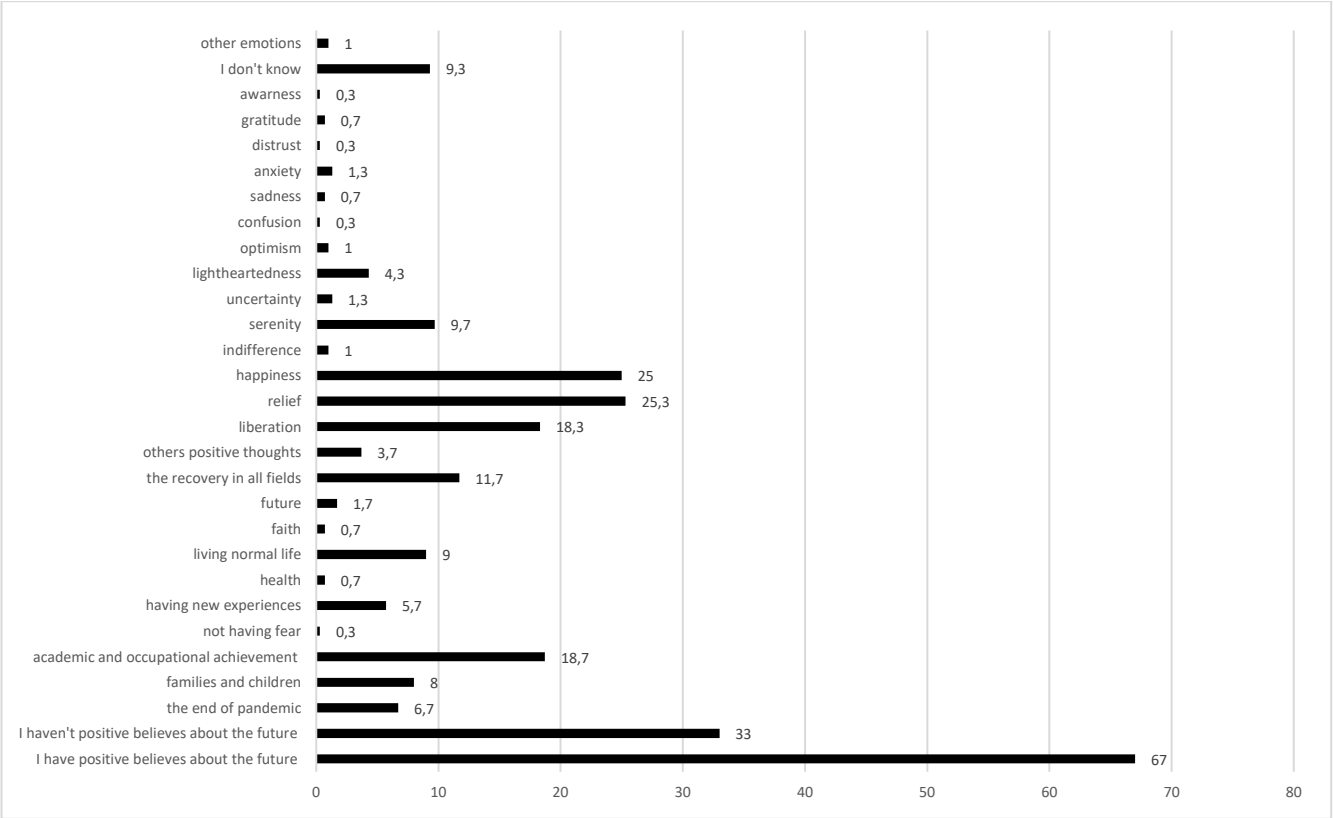
Majority of respondents revealed more fear than in the past, low or moderate sleeping disturbances and moderate or high level of discomfort during lockdown. They mostly complained the fear of being infected or to have a significant other infected, concerns about the future, generalized anxiety, fear of loneliness but, at the same time, to meet other people. Finally, they were afraid of dying. (see Graphic 3)

Graphic 3. Fear and sleeping disturbances



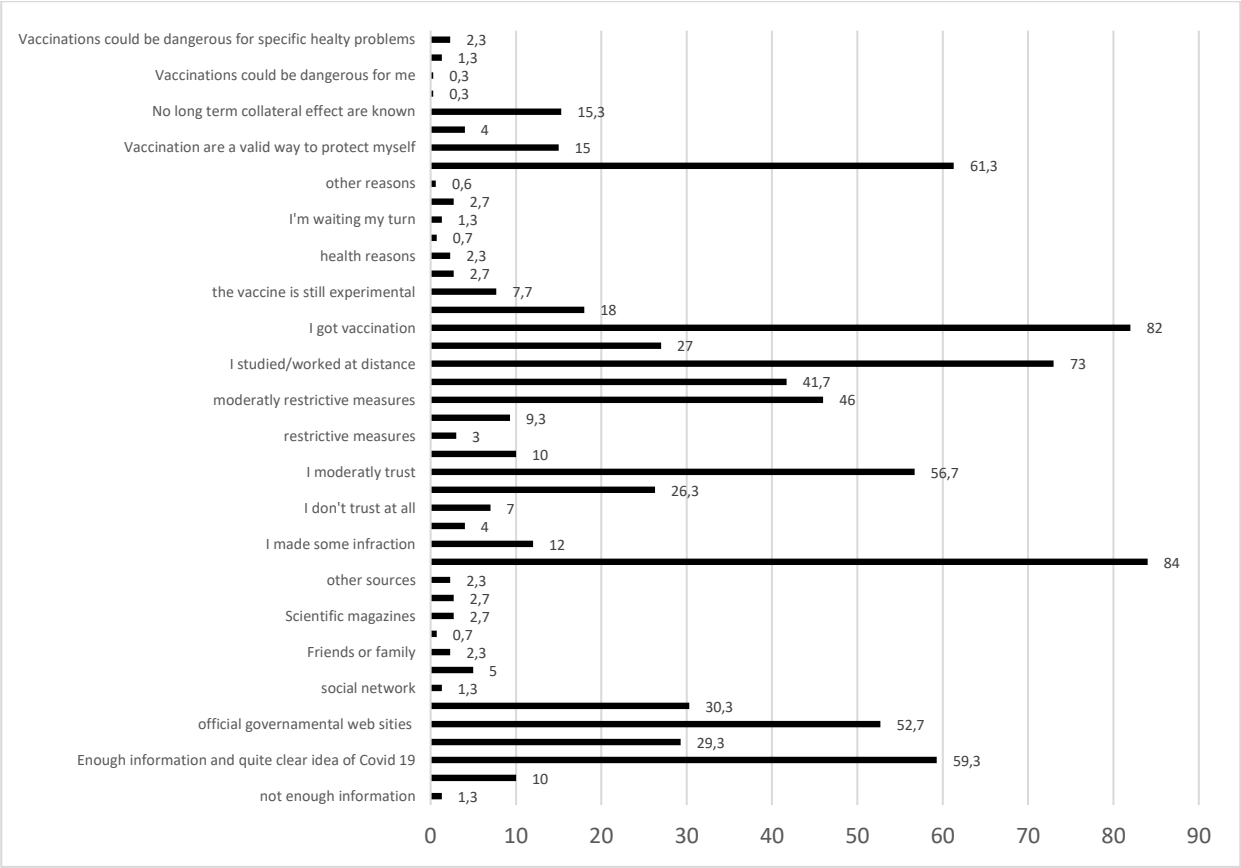
As regards the future, respondents mostly presented positive beliefs for the future, concerning more frequently academic and occupational improvements, recovery in all fields, return to ordinary life, thoughts about children and families and end of Coronavirus infection. They imagined that they mostly felt positive emotions at the end of the pandemic, as relief, happiness and serenity, and sense of freedom (see Graphic 4)

Graphic 4. Thoughts about future



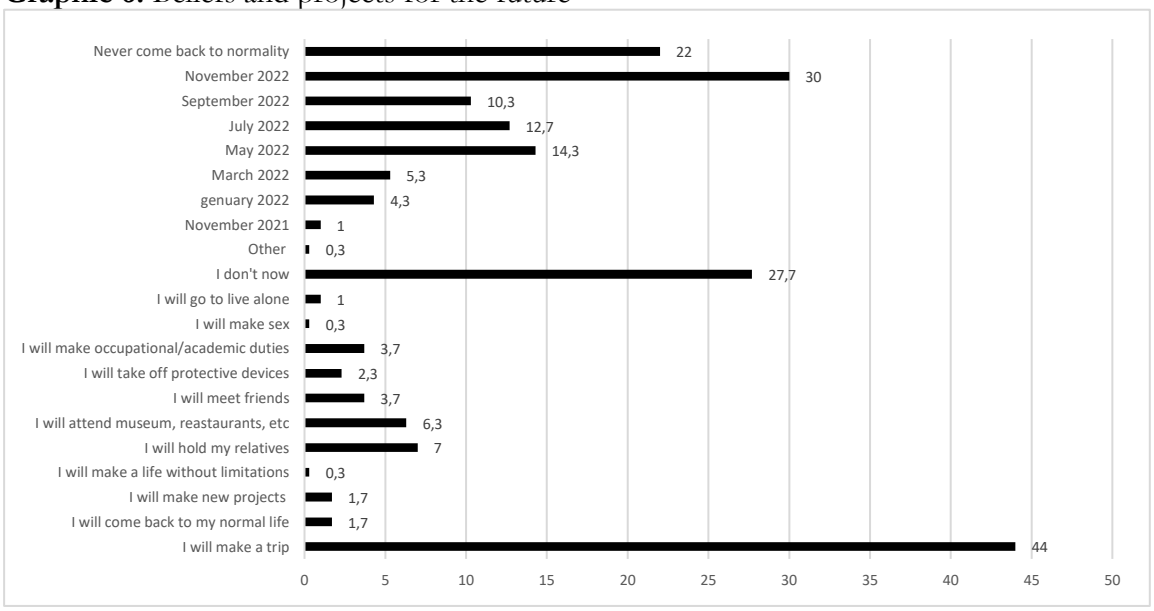
Most of respondents thought to have a moderate or even high knowledge about COVID-19. The main source of information was official web sites, followed by Internet and Television. As regards behaviors during lockdown, 84% of respondents totally respected the limitations but they mostly believed that they were very restrictive measures (41,7%). During that time, 73% experienced smart working or studying at distance. About vaccinations, 82% got the vaccine. For those who did not get it, the first motivation was that the vaccine was experimental, followed by previous COVID-19 infection. 61,3% of respondents thought that vaccinations were the only way to come back to normal life, but 15.3% underlined that long term effects were still not well known (see Graphic 5).

Graphic 5. Information, attitude toward lockdown and vaccinations about COVID-19



The majority wanted to make a trip or a holiday at the end of pandemic, followed by holding relatives, meeting friends, or coming back to study and work out of house, but almost 27% of respondents could not even imagine what they will do. 30% out of them believed that pandemic will end on winter 2022, but 22% thought that people will never go back to normal life (see Graphic 6).

Graphic 6. Beliefs and projects for the future



3.2 Age differences in psychological, emotional and behavioral impacts of COVID- 19

Age negatively correlated with PTSD (Kendall's tau=-.242**) and depression symptoms (Kendall's tau=-.145*), with younger respondents showing higher scores.

Age was shown to impact also on the emotional aspects surveyed by the *emotional impact* questions. Young adults, youths and adults reported anxiety more frequently than in seniors. On the contrary, seniors reported no emotion, fear, worry, uncertainty, and awareness more frequently. Youths expressed sadness and depression more frequently, while adults reported sense of powerless and anguish more frequently. Finally, young adults reported anger more frequently than the other age categories.

Also coping strategies surveyed by the *emotional impact* questions showed to be associated to age. Indifference was more frequent in young adults and youths than in adults or elder people. The feeling to be overwhelmed by emotions was mainly reported by youths, while the repression of emotion was more frequent in senior respondents and young adults. Finally, the effort to copy with negative emotions was reported by adults and senior more frequently than in younger respondents. Age differences were found also in fears. Youths reported general fear and fear for the limitations more frequently than the other age groups, while young adults expressed fear for the future, fear of dying and to lose control on their life more frequently. Differently, adults reported the fear to lose loved people, concerns about economic problems, fear of disinformation and about not correct behaviors by other people more frequently. Finally, elder respondents reported fear to be infected and to have social contacts more frequently.

Age was shown to be associated also to the beliefs about the future. Younger respondents had positive beliefs about general recovery more frequently than the other age groups; young adults showed higher percentages of positive perception about work and studies and about news experiences and trips, while adults reported positive thinking about families and friends more frequently. Finally, seniors had good beliefs about coming back to normal life more frequently.

With respect to *behavioral aspects* surveyed by questions, older people got more information about COVID-19 from newspapers, television, friends and relatives, and scientific magazines more frequently than youngers. Differently youths got more information through social media. Age was found to be associated also to the attitude toward restrictions due to COVID-19, with adults showing poor respect of quarantine more frequently than the other age groups. Adults also reported a higher percentage of mistrust in limitations imposed by Govern. However, youths expressed those limitations were extremely restrictive more frequently. Younger participants were found to work at home and study at distance more frequently than the other age groups and, with respect to COVID-19 vaccination had more fear of the dangerousness of vaccine, while seniors reported that it was the better way to protect oneself more frequently. As regards

what to do at the end of pandemic, most imagined a trip or a holiday. Seniors wanted to make pleasure activities (as cinema, restaurant) and to go back in general to normal life more frequently than the other age groups. Adults wanted to go back to hold loved relatives and to meet friends more frequently, while young adults imagined more to make new projects and experiences. Finally, the younger group wanted more to return to their studies or occupational activities. With respect to the future, respondents could imagine going back to normal life in a range of 3-12 month, but adults reported that people will never go back to normality more frequently (see Table 3)

Table 3. Chi square age *emotional and behavioral impacts

	youth (N=110) %	young adult (N=61)%	adult (N=60)%	senior (N=63)%	chi2	df	Sig
no emotion	12.7%	6.6%	3%	10.7%			
anxiety	40%	42.6%	30.3%	32.7%			
fear	5.5%	6.6%	10.6%	9%			
anger	7.3%	11.5%	10.6%	9%			
loneliness	5.5%	3.3%	6.1%	4.3%			
sadness	8.2%	8.2%	4.5%	6.7%			
boredom	1.8%	1.6%	0%	1.7%			
anguish	0.9%	0%	4.5%	1.7%			
worry	3.6%	3.3%	3%	4.7%			
uncertainty	0.9%	6.6%	3%	4%	77.32	57	0.03
powerless	0%	1.6%	0%	0.7%			
pessimism/distrust	1.8%	0%	9.1%	3.7%			
depression	4.5%	1.6%	1.5%	3%			
frustration	1.8%	1.6%	0%	1%			
fatigue	0,00%	0%	1.5%	0.3%			
awareness	0.9%	1.6%	3%	2%			
happiness	1.8%	0%	1.5%	1.3%			
serenity	0.9%	1.6%	1.5%	1%			
empathy	1.8%	0%	4.5%	1.7%			
other	0%	1.6%	1.5%	1%			
I feel indifferent	14.5%	14.8%	3%	12.7%			
I feel overwhelmed	36.4%	27.9%	22.7%	12.7%			
I avoid emotions	10%	11.5%	9.1%	12.7%	24.29	12	0.02
I try to cope	36.4%	39.3%	59.1%	58.7%			
other coping strategy	2.7%	6.6%	6.1%	3.2%			
I'm afraid of losing loved peolpe	10.9%	11.1%	17.5%	6.5%			
I'm afraid for the future	12.5%	19.4%	12.5%	3.7%			
I'm afraid not to come back to normal life	4.7%	5.6%	2.5%	9.2%			
I'm afraid for economic difficulties	0%	5.6%	5%	12.9%			
I'm afraid to have social contacts	6.3%	2.8%	5%	9.7%			
I'm afraid to loose control on my life	1.6%	5.6%	5%	0%			
I'm afraid that people act bed ignoring rules	3.1%	5.6%	7.5%	3.2%	69.16	45	0.01
I'm afraid of dying	3.1%	13.9%	5%	3.2%			
I'm afraid not to meet relatives	0%	0	0%	3.2%			
I'ma afraid to be infected	14.1%	16.7%	15%	38.7%			
I'm afraid about limitation and lockdown	4.7%	0%	7.5%	0%			
I'm afraid about lonliness	12.5%	5.6%	2.5%	3.2%			
I'm afraid about disinformation	0%	0%	7.5%	3.2%			

I'm afraid of the governament control	0%	0%	2.5%	0%			
I have generalized anxiety	15.6%	8.3%	5%	0%			
other fears	10.9%	0%	0%	3.2%			
the end of pandemic	10.3%	10.3%	10.2%	9.1%			
families and children	1.5%	7.7%	22.4%	20.5%			
academic and occupational achievement	39.7%	41%	16.3%	10.4%			
not having fear	1.5%	0%	0%	0%			
having new experiences	7.4%	12.8%	12.2%	2.3%	50.53	30	0.01
health	0%	0%	2%	2.3%			
living normal life	10.3%	7.7%	14.3%	22.7%			
faith	0%	0%	2%	2.3%			
future	1.5%	2.6%	4.1%	2.3%			
the recovery in all fields	25%	10.3%	14.3%	15.9%			
others positive thoughts	2.9%	7.7%	2%	11.4%			
official governamental web sities	57.5%	65.6%	47%	38.1%			
Internet	31.8%	21.3%	34.8%	31.7%			
Friends or family	0%	3.3%	0%	7.9%			
Radio	0	3.3%	0%	0%			
Scientific magazines	0.9%	1.6%	4.5%	4.8%	55.91	24	0.0001
newspapers	0.9%	0%	3%	7.9%			
social network	2.7%	1.6%	0%	0%			
TV	6.4%	0%	4.5%	7.9%			
other sources	0%	3.3%	6.1%	1.6%			
I totaly respect	76.4%	83.6%	84.8%	96.8%			
I made some infraction	18.2%	16.4%	7.6%	1.6%	12.30	6	0.004
I did't respect	5.5%	0%	7.6%	1.6%			
I don't trust at all	9.1%	1.6%	12.1%	3.2%			
I poorly trust	30.09%	27.9%	21.2%	22.2%	18.07	9	0.03
I moderatly trust	56.4%	57.4%	50%	63.5%			
I really trust	3.6%	13.1%	16.7%	11.1%			
restrictive measures	0%	1.6%	7.6%	4.8%			
quite restrictive measures	2.7%	14.8%	10.6%	14.3%	20.65	9	0.01
moderatly restrictive measures	52.7%	44.3%	37.9%	44.4%			
hightly restrictive measures	44.5%	39.3%	43.9%	36.5%			
study/work at distance	87.3%	75.4%	72.7%	46%	34.79	3	0.0001
no study/work at distance	12.7%	24.6%	27.3%	54%			
the vaccine is still experimental	46%	47.2%	30.4%	60%			
I have been infected by Covid 19	30.2%	36.1%	26.1%	10%			
health reasons	11.1%	2.8%	17.4%	15%			
vaccinations are a form of governamental controll	9.5%	2.8%	4.3%	5%	29.84	18	0.03
I'm waiting my turn	0%	0%	4.3%	5%			
I don't want to answer	1.6%	2.8%	17.4%	5%			
other reasons	1.6%	8.3%	0%	0%			
I will make a trip	40%	55.7%	47%	36.5%			
I will come back to my normal life	2.7%	0%	0%	3.2%			
I will make new projects	0.9%	4.9%	0%	1.6%			
I will make a life without limitations	0.9%	0%	0%	0%			
I will hold my relatives	5.5%	6.6%	13.6%	3.2%			
I will attend museum, reastaurants, etc	8.2%	0%	4.5%	11.1%	55.72	36	0.01
I will meet friends	0.9%	1.6%	10.6%	3.2%			
I will take off protective devices	2.7%	4.9%	0%	1.6%			
I will make occupational/academic duties	4.5%	3.3%	3%	3.2%			
I will make sex	0%	0%	0%	1.6%			
I will go to live alone	1.8%	0%	0%	1.6%			
I don't now	31.8%	21.3%	21.2%	33.3%			

Other thinks	0%	1.6%	0%	0%			
November 2021	0%	0%	3%	1.6%			
Genuary 2022	6.4%	3.3%	4.5%	1.6%			
March 2022	4.5%	3.3%	9.1%	4.8%			
May 2022	20%	9.8%	9.1%	14.3%	38.04	21	0.01
July 2022	10.9%	19.7%	13.6%	7.9%			
September 2022	15.5%	6.6%	6.1%	9.5%			
November 2022	23.6%	39.3%	19.7%	42.9%			
Never come back to normality	19.1%	18%	34.8%	17.5%			

3.3 Gender differences in psychological, emotional and behavioral impacts of Covid- 19

Correlation analyses showed that gender was significantly associated to COVID-19 anxiety (Kendall's tau=.248**) and to PTSD symptoms (Kendall's tau=.166**), with women showing higher scores.

About the *illness status*, men result more frequently to be previously affected by Coronavirus. When they contracted the infection, men more frequently presented no or low symptoms, while woman presented in more cases moderate or even severe symptoms.

Women reported high concerns about the impact of the illness and to have been overwhelmed by negative emotions more frequently than men, who expressed indifference or efforts to cope with negative emotions more frequently. Women presented also more frequent alternance between positive and negative feelings than men who, on the contrary, showed a higher percentage of avoidance strategies. Sleeping disturbances were found to be more prevalent in women than in men and women expressed a higher level of fears in that time. Women reported fewer positive thinking about the future, and family as well as children were their main positive thoughts. Instead, job and studies, health and going back to normality were the main positive thoughts for men. No gender differences were found in responses to the *behavioral impact* questions (see Table 4).

Table 4. Chi square gender*emotional and behavioral impact

	Men (N=118) %	Female (N=182) %	chi2	df	Sig
never affected before	73.7%	81.9%	7.70	1	0.05
affected before	26.3%	18.1%			
no affected	73.7%	81.9%			
quarantine without sympthoms	11%	1.6%			
quarantine with low sympthoms	15.3%	14.8%			
hospital with medium sympthoms	0%	0.5%	14.33	5	0.01
sub-intensive therapy in hospital	0%	0.5%			
intensive terapy in hospital	0%	0.5%			

low concerns	22%	12.1%	7.70	3	0.05
moderate concerns	45.8%	46.7%			
high concerns	25.4%	27.5%			
very high concerns	6.8%	13.7%			
I feel indifferent about emotion	22.9%	4.4%	43.85	4	0.0001
I feel overwhelmed by emotions	11%	36.8%			
I avoid emotions	10.2%	11%			
I try to cope with negative emotions	48.3%	45.6%			
other emotional coping strategy	7.6%	2.2%			
I avoid thinking about difficulties	17.8%	6%	21.21	4	0.0001
I think more about negative feelings	3.4%	3.8%			
I think about negative and positive feelings	25.4%	46.2%			
I think positive	40.7%	37.9%			
Other strategies	12.7%	6%			
no sleeping disturbance	16.9%	6.6%	9.20	3	0.02
low sleeping disturbance	58.5%	60.4%			
moderate sleeping disturbance	21.2%	29.7%			
high sleeping disturbance	3.4%	3.3%			
I have more fear than in the past	43.2%	65.9%	15.06	1	0.0001
I haven't more fear than in the past	56.8%	34.1%			
positive believes about the future	72.9%	63.2%	3.04	1	0.05
no positive believes about the future	27.1%	36.8%			
families and children	33.3%	61.9%	11.25	4	0.02
academic and occupational achievement	33.3%	14.3%			
having new experiences	0%	23.8%			
health	22.2%	0%			
living normal life	11.1%	0%			

3.4 Age and gender as predictors of the psychological impact of COVID-19 and related restrictive measures

A series of multiple regression analyses including age and gender simultaneously showed that anxiety of COVID-19 symptoms was significantly predicted only by gender (β=0.252, sig=0.0001), with woman showing higher scores, while PTSD scores were predicted both by age (β=-,250; sig=0.0001), with younger participants showing higher level of symptoms, and by gender (β=0,179; sig=0,001), with women showing higher scores. Age also resulted to predict depression symptoms (β=-0.182, sig=0.05), with younger participants showing higher scores.

Interactive effects between gender and age predicted only depression symptoms (β=0.307, sig=0.04), with higher scores in younger women.

4. Discussion

Our data confirmed the first research hypothesis (H1), finding moderate level of PTSD and depression symptoms and severe levels of anxiety symptoms in the Italian general population. The study results are in accordance with previous studies (Brooks et al., 2020; Hossain et al., 2020; Roma et al., 2020; Rossi et al., 2020) on the general population, which also found increased mental health problems among individuals who underwent quarantine and isolation in different contexts. Some concerns were described as motivating agents for physical and emotional distress, such as the duration of confinement, frustration, boredom, financial losses, social stigma, loneliness and inadequate receipt of supplies and information (Bonati et al., 2021; Settineri, 2021).

A high level of concerns and negative emotions and a lack of functional coping strategies were found in this study, with participants feeling overwhelmed by negative emotions or recurring to avoidance.

Previous research has showed that avoidance coping is a way to deal with difficulties by making efforts to escape, avoid, or distract themselves from the situation (Folkman & Moskowitz, 2004). This may be functional in the short term, but it has maladaptive effect in reducing negative emotions in the long term (Gori et al 2021; Gross & Thompson, 2007; John & Gross, 2004).

Our results could be better understood also referring to Attachment Theory (Bowlby, 1969; Brennan et al., 1998; Mikulincer & Shaver, 2007). We didn't test participants' attachment style, but the coping strategies we found (overreacting to negative emotions or recurring to avoidance) could be linked to the association between attachment anxiety, attachment avoidance, and loneliness, as already demonstrated in previous studies (Carr et al., 2013; Garrido Rojas et al., 2016; Liu et al., 2020; Rollè et al., 2022; Wei et al., 2005). This research underscored the potentially dysfunctional effects of secondary attachment strategies on relationship functioning and, by extension, individual well-being. The use of secondary attachment strategies (i.e., hyperactivating or deactivating strategies) tend to be exacerbated every time a psychological threat is encountered. As a result, the dysfunctional outcomes of the hyperactivating strategies adopted by these individuals may become more salient during stressful times or challenging situations such as COVID -19 pandemic, thus reinforcing the cycle of distress.

Our data showed that prevalent concerns concerned the fear of infections for the self or for loved people, general anxiety, worrying for the future, fear of dying and loneliness. Participants referred generally to have acted in a responsible way; however, a significant percentage of respondents who did not respect limitations due to quarantine was found. Interestingly, a psychological impact in participants who did not contract previous infection by the Coronavirus or who had showed moderate symptoms was reported. In addition, moderate levels of PTSD, depression and anxiety, even after the most severe quarantine period was over, were found, confirming the long terms effects of the pandemic on mental health (Cavicchioli et al., 2021) and the bi-directional circular effect between fear and anxiety (Gori et al., 2021). Fear is present-oriented, sudden, acute and short-lived, and involves several biological processes linked to the preparation for a response to immediate and potentially threatening events, thus resulting an adaptive defence mechanism essential for survival (Heeren, 2020; Schimmenti et al., 2020). However, when it is chronic or disproportionate, it becomes harmful and can be a key component in the development of several psychiatric disorders, as anxiety disorders (Garcia, 2017). Anxiety is future-oriented, with a gradual onset, a chronic course, a longer duration, and implies a cognitive re-evaluation of the fear in a dysfunctional way (Gori et al., 2021).

Our data confirmed the second hypothesis (H2) showing a gender effect on anxiety and PTSD symptoms, and an interactive effect of age*gender for what it concerned depression symptoms (H4). According to previous studies (Casagrande et al., 2020; Liu & Heinz, 2020; Rossi et al., 2020), women are more at risk for psychological distress during pandemic. Our results suggest that women were less frequently affected by COVID-19 than men, but that they reported higher concerns about family and children, presented poor coping strategies more frequently than men and reported to feel overwhelmed by negative emotions. Additionally, women showed more fear than men and higher sleeping disturbances.

About sleeping disturbances, previous studies (Somma et al., 2020) demonstrated that dysfunctional personality domain measures and internalizing symptoms (i.e., anxiety and depression) were significantly associated with changes in perceived quality of sleep during the lockdown in Italy.

As regard to negative emotions, as mentioned before, previous studies (Veronese et al., 2020) suggested that when not irrational or paralyzing, reasonable levels of fear are not necessarily risk factors if correctly channeled by psychologically and emotionally functioning citizens. On the contrary, fear may be a crucial motivational activator that could enable functional health behaviours that could explicate the lower percentage of COVID-19 infection in women.

However, when coping strategies are poor, fear could lead to increased dysfunctional anxiety. About this, our data demonstrated that the female gender predicted also higher scores in PTSD and anxiety symptoms as in previous studies. For example, Liu and Heinz (2020) reported significantly higher post-traumatic stress symptoms (PTSS) in women, particularly in the domains of re-experiencing, alterations in cognition and mood, and hyperarousal. Similarly, Ausin et al. (2020) showed higher levels of depressive symptoms, anxiety, post-traumatic stress and perceived loneliness in women.

Prevalence of depression and anxiety is generally higher in women (Asher et al., 2017; Salk et al., 2017) and it can be assumed, like several authors assumed before (Chesley, 2017; Manzo & Minello, 2020; Urdinola et al., 2019), that higher psychological distress in women is because they generally bear a greater share of the care burden within families as they are used to dealing with this. Additionally, it is well known that, in times of crisis and social isolation, the risk of domestic abuse increases (Peterman et al., 2020; Usher et al., 2020). Consequently, women are at risk of developing higher psychopathological sequalae during the COVID-19 pandemic than men because they are suffering from a greater care burden due to the increased need for care both outside and inside the home during lockdown (Chesley, 2017; Urdinola et al., 2019).

Previous studies showed a greater psychological impact of the COVID-19 outbreak not only on females, but on youths too (Rossi et al., 2020; Qiu et al., 2020; Wang et al., 2021). The results of the current study confirmed the third research hypothesis (H3) with younger showing higher symptoms of PTSD and depression and also the last hypothesis (H4) with a predictive effect of age on these variables. Youth referred more negative emotions, such as anxiety, sadness, depression, and anger. They showed poor coping, with higher feelings to be overwhelmed by negative mood or, on the contrary, they felt indifferent in front of the difficulties. Younger participants reported also higher concerns about the future and stress for the limitation due to quarantine, which they considered an extremely severe measure more frequently. Finally, they showed more concerns about vaccinations.

These data largely confirm previous findings. For example, Roma et al. (2020) found young age to be associated with an increased stress. One explanation is that younger individuals have greater access to COVID-19 information through social media and more knowledge could allow them to better understand the risk linked to the pandemic, but not necessarily to develop functional coping strategies to manage with it. So, the perception of risk grows the fear and the feeling to be overwhelmed about it. A second explanation is that the greatest vulnerability to distress in youths could be due to the precariousness of the working activity with consequent

interruption of income, often in an initial phase of professional activity's development. They also were more likely to manage with new working or educational environments during the lockdown to maintain their daily activities with growing distress. Previous studies found in fact that young age is more frequently associated with increased distress, particularly about education and career (Islam et al., 2020; Ozamiz-Extebarria et al., 2020). Additionally, psychological impacts for younger people could be associated to the concerns for children and to the constraint of a forced cohabitation in a phase of release from the family of origin (Costantini & Mazzotti, 2020).

5. Strengths and limitations

The present study has some limitations. Firstly, the sample is not large and, given the snowball method that was used to recruit participants, may not represent the whole Italian population. Furthermore, the online survey could have limited access to persons who use Internet to a lesser degree or are not able to fill in questionnaires online, such as the elderly or people with lower socio-economic status. Secondly, the psychological effects of the COVID-19 pandemic were assessed in a single time point and was not possible to evaluate temporal changes.

Despite the limitations, the present study was built on our prior research and was carried out during an advanced phase of the COVID-19 spread in Italy. For this reason, it represents an interesting contribution to our understanding of the psychological implications of the COVID-19 pandemic, underling its impact on psychopathological symptoms in both the short and long term.

In conclusion, the study results suggest that, when planning preventive interventions in order to avoid acute pandemic consequences in terms of mental health problems, a specific attention should be given to more vulnerable groups, such as females and youths. Intervention must include face to face psychological support after Covid-19 infection to improve the coping strategies and facilitating the return on "normal" life, but also providing a virtual support to the patients who had COVID-19 (symptomatic and asymptomatic) diagnosis (Di Giacomo, 2020) to prevent more serious long-term consequences after the illness.

Ethical approval * **:** This study was carried out in accordance to the Ethics Code of Italian Psychology Association and was approved by the Ethics Committee of the eCampus University; it was performed in accordance with the ethical standards as laid down in the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards. Data were handled in

accordance to the General Data Protection Regulation (GDPR), UE 2016/679. All the items of the STROBE checklist for cross-sectional studies have been met in the present report.

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement *: The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request

Conflict of interest statement *: All authors report there are no competing interests to declare

Funding: This research received no external funding.

Author Contributions * : All authors listed have made a substantial, direct and intellectual contribution to the work, and approved it for publication.

References

1. Asher, M., & Aderka, I. M. (2018). Gender differences in social anxiety disorder. *Journal of Clinical Psychology*, *74*(10), 1730–1741. https://doi.org/10.1002/jclp.22624

2. Ausín, B., González-Sanguino, C., Castellanos, M. Á., & Muñoz, M. (2020). Gender-related differences in the psychological impact of confinement as a consequence of COVID-19 in Spain. *Journal of Gender Studies*, *30*(1), 29-38. https://doi.org/10.1080/09589236.2020.1799768

3. Avena, N. M., Simkus, J., Lewandowski, A., Gold, M. S., & Potenza, M. N. (2021). Substance use disorders and behavioral addictions during the COVID-19 pandemic and COVID-19-related restrictions. *Frontiers in Psychiatry*, *12*, 653674. https://doi.org/10.3389/fpsyt.2021.653674

4. Blaskó, Z., Papadimitriou, E., & Manca, A. R. (2020). *How will the COVID-19 crisis affect existing gender divides in Europe?*. Luxembourg: Publications Office of the European Union.

5. Brodeur, M., Audette-Chapdelaine, S., Savard, A. C., & Kairouz, S. (2021). Gambling and the COVID-19 pandemic: A scoping review. *Progress in Neuro-Psychopharmacology and Biological Psychiatry*, *111*, 110389. https://doi.org/10.1016/j.pnpbp.2021.110389

6. 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

7. Bonati, M., Campi, R., Zanetti, M., Cartabia, M., Scarpellini, F., Clavenna, A., & Segre, G. (2021). Psychological distress among Italians during the 2019 coronavirus disease (COVID-19) quarantine. *BMC psychiatry*, *21*(1), 1-13. https://doi.org/10.1186/s12888-020-03027-8

8. Bova, S.M., Basso, M., Bianchi, M.F., Savaré, L., Ferrara, G., Mura, E., Redaelli, M.G., Olivieri, I., Veggiotti, P., Alfei, E. & Olivotto, S. (2021). Impact of COVID-19 lockdown in children with neurological disorders in Italy. *Disability and health journal*, *14*(2), 101053. https://doi.org/10.1016/j.dhjo.2020.101053

9. Bowlby, J. (1969). *Attachment and Loss, Vol. 1: Attachment. Attachment and Loss*. New York: Basic Books.

10. Brennan, K. A., Clark, C. L., & Shaver, P. R. (1998). Self-report measurement of adult attachment: An integrative overview. In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (p. 46–76). The Guilford Press.

11. Carr, S., Colthurst, K., Coyle, M., & Elliott, D. (2013). Attachment dimensions as predictors of mental health and psychosocial well-being in the transition to university. *European Journal of Psychology of Education, 28*(2), 157–172. https://doi.org/10.1007/s10212-012-0106-9

12. Casagrande, M., Favieri, F., Tambelli, R., & Forte, G. (2020). The enemy who sealed the world: effects quarantine due to the COVID-19 on sleep quality, anxiety, and psychological distress in the Italian population. *Sleep medicine*, *75*, 12-20. https://doi.org/10.1016/j.sleep.2020.05.011

13. Castiglioni, M., & Gaj, N. (2020). Fostering the reconstruction of meaning among the general population during the COVID-19 pandemic. *Frontiers in Psychology*, *11*, 2741. https://doi.org/10.3389/fpsyg.2020.567419

14. Cavicchioli, M., Ferrucci, R., Guidetti, M., Canevini, M. P., Pravettoni, G., & Galli, F. (2021, January). What will be the impact of the Covid-19 quarantine on psychological distress? considerations based on a systematic review of pandemic outbreaks. In *Healthcare* (Vol. 9, No. 1, p. 101). Multidisciplinary Digital Publishing Institute. https://doi.org/10.3390/healthcare9010101

15. Chesley, N. (2017). What does it mean to be a "breadwinner" mother?. *Journal of Family Issues*, *38*(18), 2594-2619. https://doi.org/10.1177/0192513X16676857

16. Costantini, A., & Mazzotti, E. (2020). Italian validation of CoViD-19 Peritraumatic Distress Index and preliminary data in a sample of general population. *Rivista di psichiatria*, *55*(3), 145-151.

17. Daglis, T. (2021). The Increase in Addiction during COVID-19. *Encyclopedia*, *1*(4), 1257-1266. https://doi.org/10.3390/encyclopedia1040095

18. Di Giacomo, D. (2020). Public Health emergencies and quarantine: virtual patient engagement as challenge and opportunity for Mental Health strategy. *Mediterranean Journal of Clinical Psychology, 8*(2). https://doi.org/10.6092/2282-1619/mjcp-2533

19. Di Renzo, L., Gualtieri, P., Cinelli, G., Bigioni, G., Soldati, L., Attinà, A., ... & De Lorenzo, A. (2020). Psychological aspects and eating habits during COVID-19 home confinement: results of EHLC-COVID-19 Italian online survey. *Nutrients*, *12*(7), 2152. https://doi.org/10.3390/nu12072152

20. Dubey, M. J., Ghosh, R., Chatterjee, S., Biswas, P., Chatterjee, S., & Dubey, S. (2020). COVID-19 and addiction. *Diabetes & Metabolic Syndrome: Clinical Research & Reviews*, *14*(5), 817-823. https://doi.org/10.1016/j.dsx.2020.06.008

21. Egorov, A. Y., & Szabo, A. (2013). The exercise paradox: An interactional model for a clearer conceptualization of exercise addiction. *Journal of Behavioral Addictions*, *2*(4), 199-208. https://doi.org/10.1556/jba.2.2013.4.2

22. Ferraro, L., La Cascia, C., Daino, M., Tripoli, G., Maniaci, G., Sartorio, C., Seminero, F., Lo baido, R., La Bartbera, D., (2021) Children and Families' mental health during the fist COVID-19 lockdown in Italy. *Mediterranean Journal of Clinical Psychology, 9*(2). https://doi.org/10.13129/2282-1619/mjcp-2984

23. Fiorillo, A., Sampogna, G., Giallonardo, V., Del Vecchio, V., Luciano, M., Albert, U., ... & Volpe, U. (2020). Effects of the lockdown on the mental health of the general population during the COVID-19 pandemic in Italy: Results from the COMET collaborative network. *European Psychiatry*, *63*(1). https://doi.org/10.1192/j.eurpsy.2020.89

24. Folkman, S., & Moskowitz, J. T. (2004). Coping: Pitfalls and promise. *Annu. Rev. Psychol.*, *55*, 745-774. https://doi.org/10.1146/annurev.psych.55.090902.141456

25. Freimuth, M., Moniz, S., & Kim, S. R. (2011). Clarifying exercise addiction: Differential diagnosis, co-occurring disorders, and phases of addiction. *International journal of environmental research and public health*, *8*(10), 4069-4081. https://doi.org/10.3390/ijerph8104069

26. Frisone, F., Alibrandi, A., & Settineri, S. (2020). Problem gambling during Covid-19. *Mediterranean Journal of Clinical Psychology*, *8*(3). https://doi.org/10.6092/2282-1619/mjcp-2457

27. García-Portilla, P., de la Fuente Tomás, L., Bobes-Bascarán, T., Jiménez Treviño, L., Zurrón Madera, P., Suárez Álvarez, M., Menéndez Miranda I., García Álvarez L., Sáiz Martínez, P.A. & Bobes, J. (2021). Are older adults also at higher psychological risk from COVID-19?. *Aging & mental health*, *25*(7), 1297-1304. https://doi.org/10.1080/13607863.2020.1805723

28. Garcia, R. (2017). Neurobiology of fear and specific phobias. *Learning & Memory*, *24*(9), 462-471

29. Garrido Rojas, L., Guzmán-González, M., & Rivera Ottenberger, D. (2016). Romantic attachment and adjustment to divorce and separation in a Chilean adult sample. *Journal of Divorce & Remarriage*, *57*(8), 573-585. https://doi.org/10.1080/10502556.2016.1233852

30. González-Sanguino, C., Ausín, B., Castellanos, M. A., Saiz, J., & Muñoz, M. (2021). Mental health consequences of the Covid-19 outbreak in Spain. A longitudinal study of the alarm situation and return to the new normality. *Progress in Neuro-Psychopharmacology and Biological Psychiatry*, *107*, 110219. https://doi.org/10.1016/j.pnpbp.2020.110219

31. Gori, A., Topino, E., Craparo, G., Lauro Grotto, R., Caretti, V. (2021) An empirical model for understanding the threat responses at the time of COVID-19. *Mediterranean Journal of Clinical Psychology, 9 (1).* https://doi.org/10.6092/2282-1619/mjcp-2916

32. Gray, N. S., O'Connor, C., Knowles, J., Pink, J., Simkiss, N. J., Williams, S. D., & Snowden, R. J. (2020). The influence of the COVID-19 pandemic on mental well-being and psychological distress: impact upon a single country. *Frontiers in Psychiatry*, *11*. https://doi.org/10.3389/fpsyt.2020.594115

33. Gross, J.J., Thompson, R.A., (2007). *Emotion Regulation: Conceptual Foundations.* In: Gross, J.J. (Ed.), Handbook of emotion regulation (pp. 3-24). The Guilford Press.

34. Heeren, A. (2020). On the Distinction Between Fear and Anxiety in a (Post) Pandemic World: A Commentary on. *Clinical Neuropsychiatry*, *17*(3), 189. https://doi.org/10.36131%2Fcnfioritieditore20200307

35. Hossain, M.M., Sultana, A., & Purohit, N. (2020). Mental health outcomes of quarantine and isolation for infection prevention: a systematic umbrella review of the global evidence. *Epidemiology and Health*, *42*, e2020038. https://doi.org/10.4178/epih.e2020038

36. King, L. A., King, D. W., Leskin, G., & Foy, D. W. (1995). The Los Angeles symptom checklist: a self report measure of posttraumatic stress disorder. *Assessment*, *2*(1), 1-17. https://doi.org/10.1177%2F1073191195002001001

37. Islam, S. D. U., Bodrud-Doza, M., Khan, R. M., Haque, M. A., & Mamun, M. A. (2020). Exploring COVID-19 stress and its factors in Bangladesh: a perception-based study. *Heliyon*, *6*(7), e04399. https://doi.org/10.1016/j.heliyon.2020.e04399

38. John, O. P., & Gross, J. J. (2004). Healthy and unhealthy emotion regulation: Personality processes, individual differences, and life span development. *Journal of personality*, *72*(6), 1301-1334. https://doi.org/10.1111/j.1467-6494.2004.00298.x

39. Lee, S. A. (2020). Coronavirus Anxiety Scale: A brief mental health screener for COVID-19 related anxiety. *Death studies*, *44*(7), 393-401. https://doi.org/10.1080/07481187.2020.1748481

40. Liang, L., Ren, H., Cao, R., Hu, Y., Qin, Z., Li, C., & Mei, S. (2020). The effect of COVID-19 on youth mental health. *Psychiatric quarterly*, *91*(3), 841-852. https://doi.org/10.1007/s11126-020-09744-3

41. Lim, M. A. (2020). Exercise addiction and COVID-19-associated restrictions. *Journal of Mental Health*, *30*(2), 135-137. https://doi.org/10.1080/09638237.2020.1803234

42. Liu, S., & Heinz, A. (2020). Cross-cultural validity of psychological distress measurement during the coronavirus pandemic. *Pharmacopsychiatry*, *53*(05), 237-238. https://doi.org/10.1055/a-1190-5029

43. Liu, N., Zhang, F., Wei, C., Jia, Y., Shang, Z., Sun, L., Wu, L., Sun, Z., Zhou, Y., Wang, Y., Liu, W. (2020). Prevalence and predictors of PTSS during COVID-19 outbreak in China hardest-hit areas: Gender differences matter. *Psychiatry Research*, *287*, 112921. https://doi.org/10.1016/j.psychres.2020.112921

44. Maniaci, G., La Cascia, C., Giammanco, A., Maria, C., Ferraro, L., Tripoli, G., Scaglione, A., Sartorio, C., Seminerio, F., Toia, F., La Barbera, D. (2022). Latent burnout profiles in a sample of frontline healthcare professionals after the peak of the Italian COVID-19 pandemic. *Mediterranean Journal of Clinical Psychology, 10*(1). https://doi.org/10.13129/2282-1619/mjcp-3292

45. Manzo, L. K. C., & Minello, A. (2020). Mothers, childcare duties, and remote working under COVID-19 lockdown in Italy: Cultivating communities of care. *Dialogues in Human Geography*, *10*(2), 120-123. https://doi.org/10.1177/2043820620934268

46. Martinotti, G., Alessi, M. C., Di Natale, C., Sociali, A., Ceci, F., Lucidi, L., Picutti, E., Di Carlo, F., Corbo, M., Vellante, F., Fiori, Tourjansky, G., Catalano, G., Carenti., M.L., Incerti, C.C., Bartoletti, L., Barlati, S., Rometo, V.M., Verrastro, V., De Giorgio, F., Valchera, A., Sepede, G., Casella, P., Pettorusso, M., & di Giannantonio, M. (2020). Psychopathological burden and quality of life in substance users during the COVID-19 lockdown period in Italy. *Frontiers in Psychiatry*, *11*, 572245 https://doi.org/10.3389/fpsyt.2020.572245

47. Mazza, C., Ricci, E., Biondi, S., Colasanti, M., Ferracuti, S., Napoli, C., & Roma, P. (2020). A nationwide survey of psychological distress among Italian people during the COVID-19 pandemic: immediate psychological responses and associated factors. *International journal of environmental research and public health*, *17*(9), 3165. https://doi.org/10.3390/ijerph17093165

48. Mikulincer, M., & Shaver, P. R. (2007). Boosting attachment security to promote mental health, prosocial values, and inter-group tolerance. *Psychological inquiry*, *18*(3), 139-156. https://doi.org/10.1080/10478400701512646

49. Moroianu, L.A., Moroianu, M., Toma, A., Barbu, R., Ardeleanu, V., Nitoi, L.C. (2021). Psychopathology in Patients Diagnosed with Sars Cov 2: a Brief Report. *Mediterranean Journal of Clinical Psychology, 9*(1). https://doi.org/10.6092/2282-1619/mjcp-2982

50. Mozzoni, M. & Franzot, E. *Coronavirus Anxiety Scale* (CAS) (2020). Department of Psychology, Christopher Newport University, Virginia, USA.

51. Negri, A., Andreoli, G., Barazzetti, A., Zamin, C., & Christian, C. (2020). Linguistic markers of the emotion elaboration surrounding the confinement period in the Italian epicenter of COVID-19 outbreak. *Frontiers in Psychology*, *11*, 2464. https://doi.org/10.3389/fpsyg.2020.568281

52. Ozamiz-Etxebarria, N., Idoiaga Mondragon, N., Dosil Santamaría, M., & Picaza Gorrotxategi, M. (2020). Psychological symptoms during the two stages of lockdown in response to the COVID-19 outbreak: an investigation in a sample of citizens in Northern Spain. *Frontiers in psychology*, *11*, 1491. https://doi.org/10.3389/fpsyg.2020.01491

53. Peterman, A., Potts, A., O'Donnell, M., Thompson, K., Shah, N., Oertelt-Prigione, S., & Van Gelder, N. (2020). *Pandemics and violence against women and children* (Vol. 528). Washington, DC: Center for Global Development.

54. Pieh, C., Budimir, S., Humer, E., & Probst, T. (2021). Comparing Mental Health During the COVID-19 Lockdown and 6 Months After the Lockdown in Austria: A Longitudinal Study. *Frontiers in Psychiatry*, *12*, 197. https://doi.org/10.3389/fpsyt.2021.625973

55. Procaccia, R., Segre, G., Tamanza, G., & Manzoni, G. M. (2021). Benefits of Expressive Writing on Healthcare Workers' Psychological Adjustment During the COVID-19 Pandemic. *Frontiers in Psychology*, *12*, 360. https://doi.org/10.3389/fpsyg.2021.624176

56. Qiu, J., Shen, B., Zhao, M., Wang, Z., Xie, B., & Xu, Y. (2020). A nationwide survey of psychological distress among Chinese people in the COVID-19 epidemic: implications and policy recommendations. *General Psychiatry*, *33*(2), e100213. 10.1136/gpsych-2020-100213

57. Rollè, L., Trombetta, T., Calabrese, C., Vismara, L. (2022). Adult Attachment, Loneliness, Covid-19 Risk Perception and Perceived Stress During Covid-19 Pandemic. *Mediterranean Journal of Clinical Psychology, 10*(1). https://doi.org/10.13129/2282-1619/mjcp-3286

58. Roma, P., Monaro, M., Colasanti, M., Ricci, E., Biondi, S., Di Domenico, A., Verrocchio, M.C., Napoli, C., Ferracuti, S. & Mazza, C. (2020). A 2-month follow-up study of psychological distress among Italian people during the COVID-19 lockdown. *International journal of environmental research and public health*, *17*(21), 8180. https://doi.org/10.3390/ijerph17218180

59. Rossi, R., Socci, V., Talevi, D., Niolu, C., Pacitti, F., Di Marco, A., Rossi, A., Siracusano, A., Di Lorenzo, G. & Olff, M. (2021). Trauma spectrum symptoms among the Italian general population in the time of the COVID-19 outbreak. *European Journal of Psychotraumatology*, *12*(1), 1855888. https://doi.org/10.1080/20008198.2020.1855888

60. Rossi, R., Socci, V., Talevi, D., Mensi, S., Niolu, C., Pacitti, F., Di Marco, A., Rossi, A. & Di Lorenzo, G. (2020). COVID-19 pandemic and lockdown measures impact on mental health among the general population in Italy. *Frontiers in psychiatry*, *11*, 790. https://doi.org/10.3389/fpsyt.2020.00790

61. Rumpf, H. J., Brand, M., Wegmann, E., Montag, C., Mueller, A., Mueller, K., Woelfling, K., Stark, R., Steins-Loeber, S., Hayer, T., Schlossarek, S., Hoffman, H., Lemenager, T., Lindenberg, K., Thomasius, R., Batra, A., Mann, K., te Wildt, B., Moessle, T.,& Rehbein, F. (2020). The COVID-19 Pandemic and Behavioral Addiction-New Challenges for Structural and Behavioral Prevention. *Sucht-Zeitschrift Fur Wissenschaft Und Praxis*, 212-216.

62. Sachdeva, V., Sharma, S., & Sarangi, A. (2021). Gambling behaviors during COVID-19: a narrative review. *Journal of Addictive Diseases*, *40*(2), 208-216. https://doi.org/10.1080/10550887.2021.1971942

63. Salk, R. H., Hyde, J. S., & Abramson, L. Y. (2017). Gender differences in depression in representative national samples: Meta-analyses of diagnoses and symptoms. *Psychological bulletin*, *143*(8), 783. https://doi.org/10.1037/bul0000102

64. Segre, G., Campi, R., Scarpellini, F., Clavenna, A., Zanetti, M., Cartabia, M., & Bonati, M. (2021). Interviewing children: the impact of the COVID-19 quarantine on children's perceived psychological distress and changes in routine. *BMC pediatrics*, *21*(1), 1-11. https://doi.org/10.1186/s12887-021-02704-1

65. Settineri, S. (2021). Loneliness or isolation due to Covid-19 pandemic. *Mediterranean Journal of Clinical Psychology, 9*(2). https://doi.org/10.13129/2282-1619/mjcp-3183

66. Urdinola, B. P., & Tovar, J. A. (Eds.). (2019). *Time Use and Transfers in the Americas: Producing, Consuming, and Sharing Time Across Generations and Genders*. Springer.

67. Schimmenti, A., Billieux, J., & Starcevic, V. (2020). The four horsemen of fear: An integrated model of understanding fear experiences during the COVID-19 pandemic. *Clinical Neuropsychiatry*, *17*(2), 41. https://doi.org/10.36131%2FCN20200202

68. Somma, A., Marelli, S., Gialdi, G., Castelnuovo, A., Momberlli, S., Ferini-Strambi, L., Fossati, A. (2020). Latent Changes in Perceived Quality of Sleep Related to the COVID-19 Quarantine Measures in Italian University Students: Understanding the Role of Personality and Internalizing Symptoms. *Mediterranean Journal of Clinical Psychology, 8(*3). https://doi.org/10.6092/2282- 1619/mjcp-2550

69. Usher, K., Bhullar, N., Durkin, J., Gyamfi, N., & Jackson, D. (2020). Family violence and COVID-19: Increased vulnerability and reduced options for support. *International journal of mental health nursing*. https://dx.doi.org/10.1111%2Finm.12735

70. Veronese, G., Cavazzoni, F., Fiore, F., Pancake, R. (2021). Fear of COVID-19 mediates the relation between mental distress and at-risk health behaviours in Italian adults. *Mediterranean Journal of Clinical Psychology, 9*(3). https://doi.org/10.13129/2282-1619/mjcp-3145

71. Vicario-Merino, Á., & Muñoz-Agustín, N. (2020). Analysis of the stress, anxiety and healthy habits in the Spanish Covid-19 confinement.

72. Wang, Y., Shi, L., Que, J., Lu, Q., Liu, L., Lu, Z., Xu, Y., Liu, J., Sun, Y., Meng, S., Yuan, K., Ran, M., Lu, L., Bao, Y., & Shi, J. (2021). The impact of quarantine on mental health status among general population in China during the COVID-19 pandemic. *Molecular Psychiatry*, 1–10. https://doi.org/10.1038/s41380-021-01019-y

73. Wei, M., Shaffer, P. A., Young, S. K., & Zakalik, R. A. (2005). Adult attachment, shame, depression, and loneliness: the mediation role of basic psychological needs satisfaction. *Journal of counseling psychology*, *52*(4), 591. https://psycnet.apa.org/doi/10.1037/0022-0167.52.4.591

74. Wenham, C., Smith, J., & Morgan, R. (2020). COVID-19: the gendered impacts of the outbreak. *The lancet*, *395*(10227), 846-848. https://doi.org/10.1016/S0140-6736(20)30526-2

75. Xiong, J., Lipsitz, O., Nasri, F., Lui, L. M., Gill, H., Phan, L., ... & McIntyre, R. S. (2020). Impact of COVID-19 pandemic on mental health in the general population: A systematic review. *Journal of affective disorders*. https://doi.org/10.1016/j.jad.2020.08.001

76. Yahya, A. S., & Khawaja, S. (2020). Problem gambling during the COVID-19 pandemic. *The primary care companion for CNS disorders*, *22*(4), 27146.

DOI: 10.13129/2282-1619/mjcp-3369