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Posttraumatic symptoms, posttraumatic growth, and internal resources among the general population in Greece: A nation-wide survey amid the first COVID-19 lockdown

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All procedures performed in studies involving human participants were in accordance with the Ethical Standards of the Hellenic Mediterranean University Ethics Committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. Informed consent was obtained from all participants included in the study.

Abstract

Scarce and inconclusive evidence exists on the mental health consequences of the COVID-19 lockdown. This study examined the psychological impact of the lockdown in Greece, resilience levels, use of coping strategies, and identified high-risk groups. A sample of 1661 participants (mean age = 39.5, *SD* = 12.2; 75.5% females) completed a web-based survey, which was distributed through social networking sites, webpages, and personal contacts. Posttraumatic symptoms, posttraumatic growth, resilience, and coping strategies were assessed. Different population subgroups suffered the impact of lockdown disproportionately. Healthcare workers, females, younger, less educated, and those living alone reported higher rates of posttraumatic stress symptoms. Females achieved more posttraumatic growth and were using coping strategies more frequently than men. Men, older, healthcare workers, and those with a partner were more resilient. Interventions need to be developed to target personal resources, protect vulnerable populations, facilitate posttraumatic growth, and ameliorate wellbeing and quality of life.

The COVID-19 pandemic is an unprecedented life-threatening situation that has affected countries worldwide, due to its staggering transmission rate, which resulted in extremely high rates of infected people and deaths (Solomou & Constantinidou, 2020). After the confirmation of the first cases in Greece, extraordinary measures of social constraints to inhibit its spread were rapidly implemented by the government, which were gradually expanded, and eventually led to stringent social distancing constraints and lockdown ("Stay-At-Home" measure) were enforced on March 23, 2020. Indisputably, lockdown abruptly disrupted habits and routines, profoundly affecting all aspects of daily life (e.g., mental health, relationships, work, leisure time).

Reports on the psychological consequences of the COVID-19 outbreak are still scarce. Although accumulated evidence has emphasised mostly the negative impacts for those facing a threat *directly* (i.e., posttraumatic stress disorder-PTSD), positive impacts are also likely (Chew et al., 2020; Tamiolaki & Kalaitzaki, 2020); posttraumatic growth (PTG) refers to positive changes to self-perception, interpersonal relationships, and life philosophy (Tedeschi & Calhoun, 1996). Similarly, the *indirect* exposure and empathic engagement to the traumatic experiences of traumatised patients may engender secondary traumatic stress (STS; Bride et al., 2004), or a positive reaction called vicarious posttraumatic growth (VPTG; Manning-Jones et al., 2017). The negative effects of the COVID-19 lockdown have not yet been sufficiently studied either, although limited evidence suggests severe distress and PTSD (Rodríguez-Rey et al., 2020). Besides, whereas Mancini (2020) has argued that COVID-19 may have some psychological gains for certain groups of people (i.e., decreased loneliness, depression, and anxiety), there is a shortage of research on the positive outcomes (posttraumatic growth and vicarious posttraumatic growth).

In the face of adversity personal resources may be activated for one to overcome the crisis effectively. Resilience (Ikizer & Ozel, 2020) and coping strategies (Ogińska-Bulik & Zadworna-Cieślak, 2018) have been associated with posttraumatic growth in diverse traumatic experiences, but not yet related to COVID-19. Problem-focused coping strategies (i.e., active response to the stressor by seeking information, instrumental support, planning and direct action; Kapsou et al., 2010) have been mostly used in past infectious disease outbreaks (Chew et al., 2020) as well as during the current one (Cerami et al., 2020).

The present study

This study aims to examine (a) the prevalence and severity of the psychological impact–both negative and positive–of the COVID-19 outbreak amid the first lockdown in the general population of Greece; (b) identify the profile of the population subgroup, that is, at a higher risk and those that manage to adapt and grow, and (c) examine the personal resources of resilience and coping responses used by different population subgroups. Adaptive coping strategies were anticipated by all subgroups in their effort to respond successfully to the stress. To the author's knowledge and at the time of writing this paper, neither the psychological impacts of COVID-19 nor the use of personal resources by the Greeks amid the lockdown have yet been reported by any other nationwide large-scale study. Any evidence stemming from this study aspires to contribute to the growing body of research on the psychological impacts of the current pandemic. The resurgence of the cases in Greece in August 2020, and the so-called second wave, makes research on this area extremely urgent, as the pandemic may have unforeseen long-term mental health effects.

METHODS

Participants

From the initial sample of 1684 participants, 1661 were Greeks, aged over 18 years, had the ability to provide informed consent and were finally included. The participants were on average nearly 40 years old, females, coming from all nine geographical regions of Greece, mostly from urban areas, in a committed relationship, well educated, and employed. A proportion of them were healthcare workers (40.6%). The detailed sociodemographic characteristics are presented as supplemental material.

Procedure

Using convenience and snowball sampling, a google forms questionnaire was distributed amid the lockdown (5–30 April, 2020) through social networking sites, webpages, and personal contacts of the author. No compensation was given to the participants. The study was in accordance with the 1964 Helsinki Declaration and its later amendments and it was approved by the Hellenic Mediterranean University Ethics Committee (No. 13/07-04-2020). The first page of the questionnaire informed about the aim of the study and the participants' rights (confidentiality, anonymity, etc.).

Measures

A self-report questionnaire was developed, and demographic data was collected. The posttraumatic symptoms were assessed either with the 20-item *Posttraumatic Check List-5* (PCL-5; Weathers et al., 2013) for the general population, or the 17-item *Secondary Traumatic Stress Scale* (STS; Bride et al., 2004), for the healthcare workers (subscales: intrusion, avoidance, and arousal). Personal growth after trauma was assessed with the 21-item *Post-Traumatic Growth Inventory* (PTGI; Tedeschi & Calhoun, 1996) (subscales: relating to others, new possibilities, personal strength, religion, and appreciation of life). Personal/internal resources were assessed with (a) the 6-item *Brief Resilience Scale* (BRS; Smith et al., 2008) for one's capacity to cope, overcome and adapt after stressors and (b) the 28-item *Brief Coping Orientation to Problems Experienced Inventory* (COPE; Kapsou et al., 2010) for the frequency of 14 coping strategies, which were grouped in three categories (see Table 1). The Cronbach alphas, the means and standard deviations of all measures are presented in Table 1.

Table 1. Overall scores, differences and correlates across age, education, gender, marital situation, and sampling group

Clinical scales	α	Overall (n = 1661)	Score range	Age	Education	Gender: Men (n = 407)	Gender: Women (n = 1252)	Marital s…: Alone (n = 850)
PTSD	**.93**	23.4 (15.7)	0–80	**−.17****	−.01	21.5 (15.9)	**24.0 (15.6)***	**24.8 (16.5)*****
STS	**.91**	40.3 (13.5)	17–85	−.02	**−.12****	36.3 (13.2)	**41.7 (13.4)*****	39.9 (13.6)
Intrusion	**.79**	12.2 (4.5)	5–25	.02	**−.18****	10.7 (4.2)	**12.8 (4.5)*****	12.1 (4.5)
Avoidance	**.78**	16.0 (5.5)	7–35	−.01	−.07	14.8 (5.6)	**16.5 (5.5)*****	15.8 (5.5)
Arousal	**.82**	12.1 (4.7)	5–25	−.06	**−.10***	10.9 (4.6)	**12.4 (4.7)*****	12.0 (4.9)
PTG	**.96**	**46.8 (25.3)**	0–105	−.02	−.03	40.7 (24.1)	**48.7 (25.3)*****	46.2 (25.3)
Relating to Others	**.90**	**14.8 (9.2)**	0–35	.03	.00	12.5 (8.6)	**15.5 (9.3)*****	14.8 (9.1)
New	**.85**	**10.5 (6.4)**	0–25	**−.06***	.03	9.3 (6.2)	**10.9*****	10.6 (6.6)

Note: Alone = unmarried, separated, divorced, widow/widower; BRS = Brief Resilience Scale; COPE (total) = coping orientation to problems experienced (total score); HCWs = healthcare workers; PTG = posttraumatic growth; PTSD = posttraumatic stress disorder (PCL5 scale); STS = secondary traumatic stress; with partner = cohabiting with any arrangement (cohabitation, cohabitation agreement, marriage); GP = general population.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Emotion-focused coping strategies included acceptance, use of emotional support, humour, positive reframing, and religion; *Problem-focused coping strategies* included active coping, use of instrumental support, planning; *Dysfunctional coping strategies* included behavioural disengagement, denial, self-distraction, self-blame, substance use, and venting).

Statistical analyses

Descriptive statistics were produced. Group differences were examined with Student's *t*-test for independent samples and correlations between variables with Pearson's *r* coefficient. The internal consistency of the scales was evaluated with Cronbach alpha. SPSS version 23 was used.

RESULTS

Table 1 presents results for the overall sample and across different demographic profiles. A high percentage of the general population (27.2%) reported PCL5 scores equal or above 33 (PTSD positive; National Centre for PTSD, n.d.) and nearly all healthcare workers (HCWs) (99.7%) reported a cumulative score of 3 or above (moderate level of STS or vicarious trauma; Bride et al., 2004). The whole sample reported moderate levels of posttraumatic growth (PTG), was highly resilient and was using various coping strategies frequently.

Healthcare workers (HCWs) had significantly higher scores than the general population on the posttraumatic growth (PTG) subscale of personal strength, were more resilient, and used dysfunctional coping strategies less frequently. Although younger people, compared to the older ones, reported higher scores on the new possibilities subscale and frequent use of coping strategies (overall), they also reported more posttraumatic stress disorder (PTSD), lower resilience, and more frequent use of dysfunctional strategies. The more educated people reported less posttraumatic growth (personal strength and spiritual change), and more frequent use of dysfunctional coping strategies. The more educated healthcare workers (HCWs) reported less secondary traumatic stress (STS), less intrusion and arousal.

Compared to men, women reportedly exhibited more posttraumatic stress disorder (PTSD) or secondary traumatic stress (STS) and posttraumatic growth (PTG), were less resilient and used all kinds of coping strategies more often. Compared to the people in a committed relationship, single people had higher scores on posttraumatic stress disorder (PTSD) and posttraumatic growth ((PTG; spiritual change and appreciation of life), were less resilient, used adaptive coping strategies less often, and dysfunctional strategies more often.

DISCUSSION

Since the COVID-19 outbreak is ongoing and steadily rising rates of confirmed cases and deaths are reported worldwide, its impact needs to be registered and effective coping strategies to be identified for future use. In this study, the positive and negative impact of the COVID-19 first lockdown was examined in a sample of Greek participants, along with the internal resources they use to cope with stress.

Overall, the sample was highly resilient and was using coping strategies frequently but had moderate to low posttraumatic growth (PTG). It could be argued that the time since lockdown was too short for any major and permanent change to occur, such as finding meaning and grow. Controversial results have shown either a positive correlation between time and posttraumatic growth or no relationship (Linley & Joseph, 2004). It can be assumed that various intervening variables, such as perceived threat and coping, influence posttraumatic growth. The sample being highly resilient might also justify the low levels of posttraumatic growth. Since coping has been found to reduce stress during other epidemics (e.g., Chew et al., 2020), it would be useful to examine coping strategies during the current pandemic.

In line with other findings (Cerami et al., 2020), healthcare workers had extremely high rates of secondary traumatic stress (STS). Lai et al. (2020) found that over 70% of the healthcare workers in China exhibited distress, with those in the frontline exhibiting the highest percentages of distress. Healthcare workers are a high-risk group since they are concurrently exposed to the consequences of the lockdown (e.g., social distancing, loneliness), the threat of infecting themselves and their loved ones, and to the traumatic experience of their patients. However, not surprisingly, they were *more resilient* than the general population, *used* dysfunctional coping strategies less frequently, and had more personal skills, strengths, and resources to deal with the present challenges (Lai et al., 2020). It seems reasonable that those struggling with COVID-19 use their personal resources to overcome adversity, and thus, they become more resilient. It would be useful to examine whether secondary traumatic stress (STS) contributes to posttraumatic growth (PTG) and whether resilience and/or coping strategies mediate this relationship. Inter-speciality differences among healthcare workers merit further research. The high rates of secondary traumatic stress (STS) and posttraumatic stress disorder (PTSD) necessitate tailored-based interventions.

As anticipated (Solomou & Constantinidou, 2020; Wang et al., 2020), women and younger people reported worse mental health and lower resilience than men and older people, respectively, and women reported more growth and more frequent use of coping strategies than men. Women are considered more prone to anxiety than men and younger people have less experiences than older people (Wang et al., 2020); thus, women may perceive this unexpected and major event more stressfully than men, whereas younger people -not having previous experience with events that cause insecurity and uncertainty, resort in more frequent use of coping strategies than older people. The more educated people reported more frequent use of dysfunctional coping. It is not known why they use dysfunctional coping strategies, but they may have difficulty in adjusting to the lockdown due to previous workload (Wang et al., 2020).

People living with a partner reported less posttraumatic stress disorder/secondary traumatic stress (PTSD/STS), less resilience, more posttraumatic growth (spiritual change and appreciation of life), more frequent use of adaptive coping strategies and less use of dysfunctional ones than those living alone. Actually, this was the more advantageous profile. Being unmarried, lack of social support and loneliness have been found to bear a significant mental health toll (Luchetti et al., 2020). This finding is not surprising since Greece is primarily a collectivistic culture, with individualistic values, in which family and marriage are highly appreciated (Papastylianou & Lampridis, 2016). Although there is no evidence of an upsurge in loneliness during the pandemic, there may be long-term adverse effects that need to be timely detected and addressed. Future research should address cultural differences too.

Some limitations of this study have to be emphasised. The sampling method limits the generalizability of the findings. Certain subgroups were underrepresented (e.g., men, older), on which the COVID-19 lockdown may have had unique impacts. Selection bias (those familiar with online surveys likely participated) and social desirability bias should be acknowledged. The cross-sectional nature of this study is an important limitation. Future longitudinal studies and in-depth studies of population subgroups should be conducted. Further research should examine differences between urban/rural areas.

In light of the potentially prolonged duration of the pandemic and based on the varied psychological responses of different subgroups, it is imperative to identify vulnerable populations who experience persistent and enduring challenges. Acknowledging the risk and protective factors early and enhancing personal resources will safeguard these populations, reduce the risk of morbidity or exacerbations of preexisting symptoms, and potentially promote posttraumatic growth.

Supporting Information

REFERENCES

Citing Literature

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