

## The Psychological Impact of Covid-19 Lockdown Measures on Cypriots' Mental Health and Quality of Life

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**Abstract:** *This study examines the psychological impact of Covid-19 lockdown measures on Cypriots' mental health and quality of life in Cyprus. The survey has been carried out in Cyprus with 464 participants. The sample includes 358 women (77%) and 106 men (23%). They were all given the General Health Questionnaire-28, the Life Satisfaction Inventory (LSI) and they were asked to answer the questionnaires on the Internet platform known as enklikanketa, from April 09 to April 20, 2020. This study identifies a major mental health burden on the general population during epidemic Covid-19. The results show that 17.1% of the general population experienced keener Social Dysfunction, 8.7% presented Severe Depression, 27.7% had Insomnia / Anxiety, 17.7% had Somatic Symptoms, 15.6% had mental health problems and 37.4% had a low quality of life. Evidence-based findings showed also that participants who have been working regularly and those who stayed home have been more affected and presented more noticeable somatic symptoms, anxiety and insomnia, health and mental health problems and lower quality of life than participants who have been working from home indeed. Research findings showed that lockdown measures and social isolation affect people's quality of life and mental health.*

**Keywords:** Anxiety; covid-19; depression; epidemic; mental health; pandemic; quality of life

### Introduction

The outbreak of the pandemic Covid-19, has caused intense emotions such as fear, sadness, sleep problems, panic attacks, somatic symptoms, severe depression, social dysfunction, and increased anxiety in the general population in all countries all over the world (Pfefferbaum and North 2020; Holmes *et al.*, 2020; Wang *et al.*, 2020; Rajkumar, 2020; Cao *et al.*, 2020; Shah *et al.*, 2020; Brooks *et al.*, 2020). Disease can cause concern about our health, our children's or our family's, especially about health condition of members of our family who belong to vulnerable groups. These intense emotions that prevail over the last few days can undoubtedly be overwhelming for our mental health and our quality of life, especially for those who have previously experienced intense feelings of anxiety, severe depression and other mental health problems (Shigemura *et al.*, 2020; Fiorillo and Gorwood, 2020; Zandifar and Badrfam, 2020; Ivchenko *et al.*, 2020; Huang and Zhao, 2020; Zhang and Ma, 2020).



The citizens were asked to keep distances and either respect tight restrictions on their movement or be self-isolated and alone in order to avoid the Coronavirus pandemic spread, considering the complications caused by the infection with Covid-19. These measures, which are thought necessary by all scientists, combined with the continuing threat posed by the Coronavirus global outbreak, may provoke strong and negative emotions to the general population. Social distance refers to avoiding close contact with other people, maintaining a safe distance (usually one to two meters) from other people, as well as avoiding gathering in places such as schools, shops, churches. Social distance from family, friends and relatives is an aggravating factor in both people's mental health and their quality of life (Van Bavel *et al.*, 2020; Nguyen *et al.*, 2020; Bao *et al.*, 2020; Xu *et al.*, 2020; Shimizu *et al.*, 2020; Ho *et al.*, 2020; Park *et al.*, 2020).

The pandemic has been spread in Cyprus since March 9, 2020. The lockdown measures came to force on March 24, 2020 and since then population's life has changed radically. All citizens need to get permission by sending a sms for one movement per day, provided it is absolutely necessary for essentials supplies, going to a supermarket or a pharmacy. This research aims at examining the psychological impact of lockdown and social distancing (Covid-19) on the general population's mental health and quality of life in Cyprus. The following hypothesis has been examined:

H1: Covid-19 lockdown measures and social isolation negatively affect people's quality of life and mental health.

## Method

### *Participants*

The survey is carried out in Cyprus with 464 participants. The sample included 358 women (77%) and 106 men (23%). The mean age for males was 32 + 13 and for females 32 + 12. The majority of the participants (72%) resided in urban areas, 50% were married and 53% were parents. Information about the participants' employment status showed that 80% had a job and 85% had a higher educational level. When lockdown measures applied, 50% of participants had to stay at home, 18% worked from home and 32% pursued a regular full-time employment; the family income of 49% of the participants was affected when government applied lockdown measures (table 1).

*Table 1. Participants' distribution and socio-demographic variables (in percentage)*

socio-demographic characteristics			n=464		
demographic characteristics			n=464		
demographic variables	n	%	demographic variables	n	%
Gender			Participant's educational level		

Father	106	23%	Secondary level	71	15%
Mother	358	77%	University level	393	85%
Marital Status			Lockdown measures		
Married	232	50%	Stay Home	242	50%
Not married	232	50%	Work from home	84	18%
			Work	120	32%
Residence			Normally Family Income		
Urban	335	72%	Yes	230	49%
Rural	129	28%	No	234	51%
Occupation			Children		
Employment	369	80%	Yes	246	53%
Unemployment	95	20%	No	218	47%

### *Data collection*

Survey has focussed on a sample of population in Cyprus. Participants completed two questionnaires in the Greek language: the General Health Questionnaire (GHQ-28) and the Life Satisfaction Inventory (LSI). In addition, a short demographic questionnaire was given to them to collect personal information about gender, age, residence, educational level, marital status, occupation. The participants answered the questionnaires anonymously on the Internet platform known as *enklikanketa*, from April 09 to April 20, 2020. This research has been conducted while the lockdown measures were in force, which resulted to limited tools available; therefore, web-based survey methods have been used and the sampling for the purposes of our study has been taken online.

### *Measures*

#### *General Health Questionnaire-28*

The General Health Questionnaire – 28 (Goldberg and Hillier 1979) / Greek Version of the General Health Questionnaire (Garyfallos et al., 1991) is a self-reporting questionnaire, used to compare participants' recent psychological state with their usual state of psychological health. Four possible answers are suggested per item (1-not at all, 2-no more than usual, 3-rather more than usual, 4- much more than usual). The instrument consists of four factors: the first factor refers to somatic symptoms, the second factor refers to anxiety/insomnia, the third factor refers to social dysfunction, and the fourth factor refers to severe depression. The possible score ranges from 28 being the lowest to 112 being the highest. The higher score shows the general population's poorer psychological state. The Cronbach's alpha coefficients of reliability of the subscales are 0.82 to 0.92 and the internal consistency of the total scale is 0.92.



### *Life Satisfaction Inventory (LSI)*

A Greek version of the Life Satisfaction Inventory (LSI) (Muthny et al., 1990) / Greek Version of Life Satisfaction Inventory (Fountoulakis et al., 1997) has been produced, in which people's quality of life is assessed but also their social-economic situation, their employment status and eventually the family and married couples' life, which are factors that have currently affected everyday life in the community. The questionnaire consists of 13 questions and focuses on the participants' quality of life during the last week of the lockdown period. The questionnaire is a self-reporting questionnaire and each question is answered according to the Likert scale: 1 = very disappointed, 2 = disappointed, 3 = neither disappointed nor satisfied, 4 = satisfied, 5 = very satisfied. The minimum scale score is 13 and the maximum, 65. The scale shows satisfactory internal consistency assessed according to the Cronbach's Alpha 0.82. The higher score shows the higher quality of life.

### *Data Analysis*

The data analysis has been carried out with the SPSS 25.0 software package. A descriptive analysis has firstly been conducted to describe the demographic characteristics, the same way as the mean, the standard deviation, the frequency and the percentage have been calculated from participants' personal information provided in the form; in order to examine our research hypothesis, we have applied the two-way and the multivariate Anova (Manova) to compare means among the participants' demographic characteristics, their quality of life and their mental health. Pearson's correlation coefficient has been used to explore whether correlations (positive or negative) could be found between participants' quality of life and their mental health.

### **Results**

The findings of the present study showed that there is a statistically significant difference between men and women in the dependent variable anxiety/insomnia  $F(1,461) = 2,976$   $p < 0.05$ . According to observations, women (mean 15.23) had more anxiety/insomnia symptoms than men (mean 14.76).

Lockdown Measures were significant dimension in participants' mental health and quality of life. There is a statistically significant difference regarding the dependent variable somatic symptoms  $F(4,456) = 3,196$   $p < 0.01$ , among participants who have stayed at home, those who have been working regularly and the others who have been working from home. The results show that participants who have been working regularly (mean 14.70) and those who have stayed at home (mean 14.33) are more affected, suffering also from somatic symptoms than participants who have been working from home (mean 13.19).

There was a statistically significant difference regarding the dependent variable insomnia / anxiety  $F(4,456) = 2,266$   $p < 0.05$ , among participants who have stayed at home (they stay home and they are not working), those who have been working regularly (they go to work



every day as before) and the others who have been working from home (work remotely). Findings showed that participants who have been working regularly (mean 15.31) and those who have stayed at home (mean 14.94) are more affected, suffering also from anxiety and insomnia than participants who have been working from home (mean 13.60).

There was a statistically significant difference regarding the dependent variable general health  $F(4,456) = 2,609$   $p < 0.05$ , among participants who have stayed at home, those who have been working regularly and the others who have been working from home. According to observations made, participants who have been working regularly (mean 55.70) and those who have stayed at home (mean 54.52) are more affected in their overall health and mental health than those who have been working from home (mean 51.88).

There was a statistically significant difference regarding the dependent variable quality of life  $F(4,456) = 4,622$   $p < 0.01$ , among participants who have stayed at home, those who have been working regularly and the others who have been working from home. Results showed that participants who have been working from home (mean 44.89) have a better quality of life than those who have been working regularly (mean 41.78) and the others who have stayed at home (mean 41.12).

Age was also a significant determinant. There was a statistically significant difference regarding the dependent variables' general health  $F(1,435) = 6,128$   $p < 0.01$ , depression  $F(1,435) = 2,969$   $p < 0.05$ , insomnia / anxiety  $F(1,435) = 2,910$   $p < 0.05$ , and somatic symptoms  $F(1,435) = 10,809$   $p < 0.001$ , between young participants (18 -39 years old) and older ones (40 – 65 years old). According to observations made, young participants are more affected by their general health, experiencing anxiety, insomnia, depression and somatic symptoms than older ones.

Educational level seemed to affect participants' mental health and quality of life. There was a statistically significant difference regarding dependents variables depression  $F(1,457) = 2,908$   $p < 0.05$ , and social dysfunction  $F(1,457) = 3,337$   $p < 0.05$  between participants with a higher level of education and those attending secondary education. Findings showed that the mental health of higher education participants is more affected; they have more depression and social symptoms than the participants having attended only secondary education.

Marital status seemed to also affect participants' mental health. There was a statistically significant difference regarding dependent variable depression  $F(1,457) = 3,144$   $p < 0.05$ , and social dysfunction  $F(1,457) = 11,071$   $p < 0.001$  between participants who are married and those who are not. Findings showed that participants who are married suffer major social dysfunction than those who are not married; on the other hand, participants who are not married have more depression symptoms than married ones.

Participants' residence had a significant role. There was a statistically significant difference regarding dependents variables depression  $F(3,458) = 8,564$   $p < 0.000$ , anxiety/insomnia  $F(3,458) = 2,749$   $p < 0.05$ , general health  $F(3,458) = 3,003$   $p < 0.05$  and quality of life  $F(3,458)$



= 2,452  $p < 0.05$ , between participants who live in urban areas and those living in rural areas. Results showed that the mental health of participants who live in rural areas is more affected and they have more depression insomnia and anxiety symptoms, than participants who live in urban areas; on the contrary, participants who live in urban areas have a better-quality life than participants who live in rural areas

Family income had a significant role in participants' mental health and quality of life. There was a statistically significant difference regarding dependents variables depression  $F(4,457) = 2,065$   $p < 0.05$ , anxiety/insomnia  $F(4,457) = 3,098$   $p < 0.01$ , general health  $F(4,457) = 2,925$   $p < 0.01$  and quality of life  $F(4,457) = 9,487$   $p < 0.001$ , between participants whose family income has been affected than participants whose family income has not been affected. Findings showed that mental health of participants whose family income has been affected, suffers greater impact and they have more depression insomnia and anxiety symptoms than the participants whose family income has not been affected. Participants whose family income has not been affected have a better quality of life than those whose family income has been affected.

There was a statistically significant difference regarding dependent variable depression  $F(2,458) = 5,762$   $p < 0.01$ , insomnia  $F(2,458) = 3,360$   $p < 0.01$ , general health  $F(2,458) = 4,425$   $p < 0.01$  and quality of life  $F(2,458) = 6,848$   $p < 0.001$ , between participants and the extent to which their family income has been affected. Findings showed that the impact on the mental health of participants who reported that their family income was extremely affected has eventually been greater, they have more depression, insomnia and anxiety symptoms and poorer quality of life.

*Table 2. Correlations coefficients between participants' General Health, Social dysfunction, Depression, Somatic Symptoms and Quality of Life*

	<b>Social dysfunction</b>	<b>Depression</b>	<b>Insomnia/ Anxiety</b>	<b>Somatic Symptoms</b>	<b>General Health</b>	<b>Quality of Life</b>
Social dysfunction	-					
Depression	,117*	-				
Insomnia/ Anxiety	-0.065	,474**	-			
Somatic Symptoms	0.016	,377**	,702**	-		
General Health	,272**	,669**	,880**	,825**	-	
Quality of Life	-,190**	-,321**	-,542**	-,427**	-,468**	-

Study detected a significant negative correlation between the Quality of Life and the dimension of Total General Health ( $r = -0.468$   $p < 0.001$ ), but also a correlation with the Severe Depression, Insomnia/Anxiety, Somatic Symptoms and Social Dysfunction ( $r = -0.321$   $p < 0.001$ ;  $r = -0.542$   $p < 0.001$ ;  $r = -0.427$   $p < 0.001$  and  $r = -0.190$   $p < 0.05$  respectively). On the other hand, the General Health has a positive correlation with the dimensions of Social Dysfunction ( $r = 0.272$   $p < 0.001$ ),

Severe Depression ( $r=0.669$   $p<0.001$ ), Insomnia/Anxiety ( $r=0.880$   $p<0.001$ ) and Somatic Symptoms ( $r=0.825$   $p<0.001$ ). The dimension of Insomnia/Anxiety has been found to have a positive correlation with Severe Depression ( $r=0.474$   $p<0.001$ ) and Somatic Symptoms has a positive correlation with the dimensions of Severe Depression ( $r=0.377$   $p<0.001$ ) and Insomnia/Anxiety ( $r=0.702$   $p<0.001$ ) (table 2).

*Table 3. Frequency and Percentages on (low – high scores) Mental Health Dimensions & Quality of Life*

<b>Variables</b>	<b>Level</b>	<b>Frequency</b>	<b>Percentage</b>
Social dysfunction	Low	383	82.9%
	High	79	17.1%
Depression	Low	422	91.3%
	High	40	8.7%
Insomnia/Anxiety	Low	334	72.3%
	High	128	27.7%
Somatic Symptoms	Low	380	82.3%
	High	82	17.7%
General Health	Low	390	84.4%
	High	72	15.6%
Quality of Life	Low	173	37.4%
	High	289	62.6%

The Table 3 shows the frequency and the percentages in each variable of General Health and Quality of Life and highlights the participants with a low and high score for the Quality of Life, General Health Somatic Symptoms, Insomnia / Anxiety, Severe Depression Social Dysfunction. The results show that 17.1% of the sample has been Social Dysfunction, 8.7% presents Severe Depression, 27.7% has Insomnia / Anxiety, 17.7% has Somatic Symptoms, 15.6% has mental health problems and 37.4% has a low score for the quality of life.



Table 4. Differences between (low – high scores) Mental Health Dimensions & Quality of Life

Quality of Life		N	Mean	Sig
Social dysfunction	Low	173	15.34	0.05
	High	289	14.77	
Depression	Low	173	11.10	0.00
	High	289	9.64	
Insomnia/ Anxiety	Low	173	17.53	0.00
	High	289	13.19	
Somatic Symptoms	Low	173	15.68	0.00
	High	289	13.34	
General Health	Low	173	59.10	0.00
	High	289	51.52	

The Table 4 illustrates a statistically significant difference regarding the dependent variable of quality of life among the variables of: General Health Somatic Symptoms, Insomnia / Anxiety, Severe Depression, Social Dysfunction. Participants with lower social dysfunction  $F(4,457) = 3,294$   $p < 0.05$ , fewer depressive symptoms  $F(4,457) = 39,573$   $p < 0.001$ , fewer anxiety and insomnia symptoms  $F(4,457) = 14,080$   $p < 0.001$ , fewer somatic symptoms  $F(4,457) = 4,741$   $p < 0.001$  and fewer mental health problems  $F(4,457) = 20,768$   $p < 0.001$  are found to have a better quality of life.

## Discussion

The results of study showed that 17.1% our sample of Cypriot participants have keen Social Dysfunction, 8.7% presents Severe Depression, 27.7% has Insomnia / Anxiety, 17.7% has Somatic Symptoms, 15.6% has mental health problems and 37.4% has a low quality of life. The findings of the research are supported by Mei *et al.* (2011), who state that public health emergencies are associated to many psychological effects on students and the general population, which can be expressed as anxiety, fear and dysfunction.

According to Pfefferbaum and North (2020), the pandemic Covid-19 has negative effects on each person' mental health, emotional and social functioning. Also, the pandemic is related to stress factors such as first infection of family members, loss of loved ones and physical distance), second loss of income and third psychosocial effects on humans such as depression, anxiety, insomnia and somatic symptoms.

Holmes *et al.* (2020) also concludes the pandemic of coronavirus disease (Covid-19) causes a profound effect on all aspects of society, including mental health and physical health. The pandemic has direct and indirect psychological and social effects on humans and can affect the mental health of any person.



The findings by Ipsos MORI (2020) focusing on the general population, the pandemic revealed widespread concerns about the impact of social isolation, social distance, increased stress, depression, anxiety and other negative emotions and has generated financial difficulties. Covid-19 is mainly linked to social and psychological reactions.

The findings of study are similar to those of the research conducted by Wang *et al.*, (2020) while examining the psychological impact of the epidemic on general population's mental health; according to the results 8.1% has mild anxiety symptoms, 28.8% has severe anxiety symptoms and 16.5% has depression symptoms. Also, according to Rajkumar (2020) the psychological reactions and effects of the pandemic on the population cause anxiety and depression symptoms (16-28%), and 8% may be related to disturbed sleep.

The findings of this study show a statistically significant difference between men and women in regard to anxiety/insomnia. Similar results related to our research are presented by Guo *et al.*, (2016), they state that women are more likely to experience increased anxiety compared to men.

In this research, age has also been a significant determinant of participants' mental health. The findings of our research show that young participants' general health is more affected experiencing more anxiety, insomnia, depression and somatic symptoms than older participants. Our findings are confirmed by similar results of Wang *et al.*, (2020) who have concluded that young participants in their research have been more affected psychologically than older ones.

There is a statistically significant difference regarding dependent variables depression between participants with a higher education level and those who attended just secondary education. According to the findings of our study, the mental health of higher level of education participants is more affected and these participants have had more depression and social symptoms than those who have attended just secondary education. According to similar results concluded by Nguyen *et al.*, (2020), people with a higher level of education have more depression symptoms.

The results of this study show that the mental health of participants who live in rural areas are more affected and they have more depression, insomnia and anxiety symptoms than participants who live in urban areas; on the contrary, participants who live in urban areas have a better quality of life than those who live in rural areas. According to further findings, participants who are married experience keener social dysfunction than those who are not married; on the other hand, participants who are not married have more depression symptoms than married ones. According to research by Cao *et al.*, (2020), 24.9% of students have experienced intense stress due to the pandemic. It has also been pointed out that students living in urban areas with their parents and having steady income are less affected by psychological effects and suffer less stress. Further findings show that the pandemic as a stress factor is positively related to anxiety, stress, family income and academic life.



Family income plays a significant role in participants' mental health and quality of life. According to the findings, the mental health of participants whose family income is affected suffer a greater impact and more depression, insomnia and anxiety symptoms than those whose family income is not affected. Participants, whose family income has not been affected, enjoy a better quality of life than those whose family income has been affected. Yet, the impact on the mental health of participants who have reported that their family income has been extremely affected, has been found to be higher, they have more depression, insomnia and anxiety symptoms and their quality of life is poorer. Similar results have been concluded by Nguyen *et al.*, (2020), Nguyen *et al.*, (2017), Ha *et al.*, (2014), showing that people with higher family income have a better quality of life and that are more resilient.

The results of this study show that participants who have been working regularly and those who have stayed at home are more affected, experiencing somatic symptoms, anxiety and insomnia, health and mental health problems and a poorer quality of life than participants who have been working at home. The findings of our study may be related to the fact that some participants in the research, who have been working regularly, are healthcare workers (nurses, doctors, social workers) and they have been facing disease every day, which caused them to feel the fear and experience anxiety; they have also experienced mental health symptoms and their quality of life has been poor.

Shah *et al.*, (2020) states, there has been significant evidence from previous studies on the impact of epidemic on general population, on people facing health problems and on healthcare workers. The results of the study related to the current pandemic Covid-19 show that the general population, vulnerable people and healthcare professionals feel the fear; they have also experienced emotional distress, anxiety symptoms and feel isolated.

Brooks *et al.*, (2020), Shigemura *et al.*, (2020) noted that Covid-19 pandemic not only affects physical health but also has an impact on mental health and people's quality of life; the current pandemic has forced the general population to change the priorities in their lives.

Fiorillo and Gorwood (2020) mentions that the pandemic will end but its effects will be felt for a long time, affecting mental health, the quality of life and the well-being of the general population, the healthcare professionals and the vulnerable people. They have also noted that the crisis has enhanced endurance and solidarity skills, on both individual and collective level. Zandifar and Badrfam, (2020), Ivchenko *et al.*, (2020) have highlighted too the importance of uncertainty, the severity of the disease, misinformation and social isolation, which cause people's stress to increase and mental illness to aggravate.

Shigemura *et al.*, (2020), Zettler *et al.*, (2020), Rajbhandari (2020), underline that there is an economic impact of the Covid-19, which has an effect on the general population's well-being, causing fear and panic to increase. The authors have also concluded that patients infected by Covid-19, their families, people with existing physical or psychiatric problems and healthcare workers have been facing higher risk to develop mental disorders..



According to Huang and Zhao (2020), during the epidemic Covid-19 in China there has been a significant burden on the general population's mental health. The epidemic has particularly affected young people's mental health and people who have spent a lot of time on the epidemic and healthcare professionals. According to observations made, young people have experienced more symptoms of anxiety, while healthcare workers have experienced a higher risk for poor sleep quality.

In the same line Van Bavel *et al.*, (2020) states that the pandemic has had an impact on people's interpersonal relationships. Yet, policies of self-isolation and social isolation are likely to be important factors for intense stress; financial difficulties are also a further negative consequence. People's social isolation and the social distancing can cause serious problems in their mental health, while socializing among people can make them more resilient to cope more easily with the difficult conditions caused by the pandemic.

Zhang and Ma (2020), examine the impact of Covid-19 on the general population's mental health and quality of life. They have found that the outbreak of the virus caused panic and anxiety in the population, though the results of the study show that participants present mild anxiety. How crucially important is to enjoy family support is also noted.

According to Nguyen *et al.*, (2020), Bao *et al.*, (2020), Xu *et al.*, (2020), Shimizu *et al.*, (2020), Ho *et al.*, (2020), Park *et al.*, (2020), Covid-19 pandemic caused panic and mental health problems in the general population. In addition, misinformation and ignorance about this epidemic, restrictions, social isolation and quarantine can affect people's mental health and their quality of life. The statements made by the World Health Organization (2020) and the news on the Covid-19 pandemic has caused negative emotions in the general population, resulting to more negative feelings such as anxiety, terror, fear, sadness, affecting, therefore, people's mental health and their quality of life.

### **Limitations**

Some important limitations should be noted in the current study. The research was conducted during the global Covid-19 outbreak and when lockdown measures were applied by government. The study was conducted by online system *enklikanketa* and authors used web-based survey method to avoid possible infections both researchers and participants. Additionally, the small sample size and convenient sample may limit the generalization of the results on general population.

### **Conclusions**

The Covid-19 pandemic has brought radical changes in the quality of life and mental health of people around the world. The pandemic has caused feelings of desperation, fear, terror and anxiety in the general population. Research findings showed that lockdown measures and social isolation affect people's quality of life and mental health. It is vital to emphasize the importance of mental health, quality of life and the well-being of the population. Governments,



local authorities and social services have to take proactive steps to minimize the pandemic's detrimental effects. Citizens may be provided with services of high quality to help them maintain their quality of life and mental health. It is recommended to evaluate children's and adolescents' mental health and quality of life during a pandemic in case of future research.

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