Concern and Fear about Covid-19 and Association with the Anti-Covid-19 Vaccine on a Small Greek Village of Western Fthiotis Area

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Abstract

The COVID-19 pandemic has been an inseparable issue in our daily life, and this results in the existence of concern, fear, and other psychological issues in the majority of people around the world. Based on this, this paper aims to discover probable associations between sociodemographic characteristics, concern and fear of a population form a small village in western Fthiotis, Greece. A questionnaire which parted into 3 pieces, sociodemographic questions, Cov-19SC and FSV-19S was used to collect the data. These two scales are performed high levels of reliability (a>0.90). The total participants were 50, of whom 26(52.0%) were men and 24(48.0%) were women. From the statistical analysis it is concluded that residence, vaccination, and thoughts about anti-covid measure's protection are associated both with fear and concern about the pandemic Covid-19(p<0.05). A linear model was also constructed between Covid-19 Concern Scale and Fear of Covid-19 Scale. Cov-19SC and FSV-19S (F=122.25, df=1, p<0.05). Some of these results match those from other studies, while some contradict them. Finally, it sets out various suggestions for further research.

Keywords

FCV-19S, Cov-19SC, Pandemic, Anti-COVID-19 Vaccine, Greece

Introduction

Two and a half years ago, the World Health Organization (WHO), characterized SARS-COV-2's propagation as a pandemic [1]. From this moment, almost all countries of the world began to take measures to deal with the pandemic spread and of course to protect people's lives. According to Isik et al., some of these measures were physical isolation, using of masks, increased hygiene such as good washing of the hands and touching avoidance, closure the air and continental borders and frequent checks using rapid or PCR tests [2]. Although, it is must to notice that all the above measures varied from country to country depending on the prevailing epidemiological situation in that country. In any case, all these measures in combination with the long time they were applied, created financial, social, and psychological issues for both businesses and people.

Focus on the psychological problems, anxiety, concern, fear, and depression are the most common serious symptoms that observed in a person's psychological situation [3],[4]. On the one hand, doctors and psychologists insist that special attention must be paid to mental health in addition to physical health [5],[6].

On the other hand, depression, and the pressure that people are feeling may lead to aggressive behavior but also to actions that endanger their own life [4],[7]. Furthermore, most people continue to appear fear about getting infected by the virus, their families' and their closest persons' health and they are terrified at the idea of one of their own people passing away because of the virus [8], [9]. At this point, it is worth mentioning that if the fear continues for a long period of time, it can easily led to more serious depression symptoms [8]. So, to measure, examine and control all the above psychological symptoms which make life more difficult for people, scientists and especially psychologists developed a wide variety of psychometric scales [9]. According to Lin et al., the most fame and frequent scales are the Coronavirus Anxiety Scale (CAS) with five items, the 6-item COVID Concern Scale (Cov-19SC) [10] and the Fear of COVID-19 Scale (FSV-19S) which consists of 7 questions [9]. Furthermore,

these three scales have been validated and used in European, Asian, and American countries such as Greece, China, Portugal, Argentina etc. [11].

Previous studies searched the associations between fear, anxiety and depression and sociodemographic characteristics in addition to the validity and reliability of these research materials. For example, Magano et al., showed that gender is a differentiating factor on views of coronavirus fear [11]. The same result is extracted from the Tsiropoulou et al. survey too. Specially women showed higher fear than men in a sample of 2970 Greek citizens [6].

However, for a year and a half, the most countries in the world acquired a big weapon to face the pandemic and protect their lives. The anti-covid-19 vaccine came to our lives to make us safer than the COVID's-19 beginning era. Although Paul et al., in their survey found that exists negative attitudes about anti-covid-19 vaccination. Deepening, the side effects of the vaccine, its effectiveness even conspiracy theories are the main issues that affect a huge amount of people in the born of negative thoughts about the vaccination [12]. In Greece, it is mentioned that familiar and friendly environment persons can significantly influence a person's opinion about vaccination against SARS-COV-2, in addition to demographic features [13].

Based on all the above clues and results, this study aims to examine the association between fear and concern and the influence of the anti-covid-19 vaccine's opinion on both fear and concern. Furthermore, it will be searched probably correlations and differences between sociodemographic characteristics and fear and concern about Covid-19 and between the variables of the scales which will be used on the survey.

Materials and Methods

Instruments

To collect the data, a paper questionnaire was used, which was distributed to the survey participants. This questionnaire was parted into 3 pieces, which are going to be fully mentioned below. The sample population consisted of residents of the village and visitors to the village of Tsouka, which is in the west of the prefecture of Fthiotida, in Greece.

Socialdemograhpic Questionnaire

The first part of the research's questionnaire included demographic and social questions and questions about if a person has been or not vaccinated, and if someone or a familiar person to him was infected form SARS-COV-2.

Fear of Covid-19 Scale (FSV-19S)

Fear of Covid-19 Scale developed from Ahorsu and his partners to measure the fear of coronavirus infection [9]. It is worth mentioning that to create this scale Ahorsu et al., used a lot of surveys and literature reviews about fear. FCV-19S consists of 7 items which are answered on a 5-Likert scale from 1= "Strongly Disagree" to 5= "Strongly Agree". Metrics such as composite reliability=0.88 and internal consistency=0.82 (originals scores) allow scale to be a reliable instrument for measuring fear of Covid-19 [11], [14]. The Greek version of this scale validated and translated from Tsiropoulou and their partners in 2021, and it is available on the internet for any user who needs it in their research [6]. Additionally, the internal consistency (Cronbach's alpha coefficient) of FSV-19S in Greek population was equal to 0.87[6].

Covid-19 Concern Scale (Cov-19SC)

The Cov-19SC developed from Percy et al., in 2020, and aims to examine the concern levels of the people about the coronavirus illness. It consists of 6 items which are answered on a 5-Likert scale from 1= "Never" to 5= "Very often", and from this, it is reasonable to say that respondents should keep in mind their coronavirus behavior over the past week [15]. This concern scale used for the first time on the Peruvian

population by its authors and its reliability was very high, as the value of Cronbach's alpha was equal to 0.866[15]. In Greece, this scale translated and used by Daleziou on her survey about the fear and concern of elderly for both the vaccination against Covid-19 and the evolution of the pandemic. It is mentioned that the Cronbach's alpha value of the scale was equal to 0.917, which means that the scale is very reliable [16].

Participants-Survey's Sample

A sample of 50 people aged 10 years old and over participated in the survey and filled the corresponding questionnaire. The sample were villagers or travelers of a small village at western Fthiotis prefecture at Greece. In addition, questionnaires were shared to those people, and the questionnaire's completion was done by hand. The data collection started in April 2022 and ended in May 2022.

Statistical Analysis

To analyze the data that was collected for the survey, firstly a descriptive analysis was conducted. The purpose of it was to measure, summarize and describe the sociodemographic variables of the dataset. Secondly, a measurement of scales' reliability using the Cronbach's alpha coefficient was implemented. Then, relations between different variables using X^2- test and crosstabulation matrices was examined. On these controls, it is stated that variable clustering by recoding was performed in several cases and Yates' continuity correction, Fisher's exact statistic was used, and Cramer's V coefficient was calculated for the strength of the relationship in cases of 2x2 relevance matrices, too. Furthermore, it is conducted a linear regression model between the total FSV-19S and total Cov-19SC. Following the Central Limit Theorem the hypothesis of continuity, randomness and existence of outliers was adopted because the sample was over than 30 participants. Additionally, the significant level established to be a=0.05. Finally, it is mentioned that to implement the data analysis, is used the IBM SPSS Statistics 26 for Windows.

Results

Descriptive Statistics

A total of 50 individuals took part in this quantitative survey. Out of the total sample, 26 (52.0%) were males and 24 (48.0%) were females. 12 out of 50 participants (24.0%) were between 10 and 19 years old, with the 40-49 age group following with 11 (22.0%) people. 36 people of 50 (72.0%) were living in the village, when most of the sample (36.0%) were high school graduates. Regarding professional status, 22 (44.0%) participants were employees and only 7 (14.0%) were unemployed. To continue, 23 (46.0%) out of 50 were unmarried and just 2 (4.0%) persons have been divorced (Table I).

Table I

Frequency and Relative Frequency of Sociodemographic Characteristics	Variable	Frequency	%
Gender	Female	24	48,0%
	Male	26	52,0%
	Total	50	100,0%
Age	10-19	12	24,0%
	20-29	7	14,0%
	30-39	7	14,0%
	40-49	11	22,0%
	50-59	6	12,0%
	60+	7	14,0%
	Total	50	100,0%
Residence	City	10	20,0%
	Small City	4	8,0%
	Village	36	72,0%
	Total	50	100,0%
Educational Level	Agrarian	6	12,0%
	Primary school graduate	14	28,0%
	High school graduate	18	36,0%
	University graduate	12	24,0%
	Total	50	100,0%
Professional Status	Unemployed	7	14,0%
	Employee	22	44,0%
	Retired	10	20,0%
	School Student / University Student	11	22,0%
	Total	50	100,0%
Marital Status	Unmarried	23	46,0%
	Married	18	36,0%
	Divorced	2	4,0%
	Widower	7	14,0%
	Total	50	100,0%

It is observed that villagers ($M_{FCV-19S}$=2.12, SD=0.92) are less afraid for COVID-19 than the participants who are living in a city or in small town ($M_{FCV-19S}$=2.70, SD=0.81) with statistical significance (t=2.08, df=48, p<0.05) (Table II).

Table II

Independent Sample Test Between FSV-19S and Residence							
Residence	*Variable*	*N*	*Mean*	**Std. Deviation**	*t*	*df*	*Sig. (2-tailed)*
FSV-19S	*City-Small Town*	*14*	*2,70*	*0,81*	*2,08*	*48*	*0,043*
	Village	*36*	*2,12*	*0,92*			

Continuing the sample's presentation, it is mentioned that 26 (52.0%) of 50 participants have at least one child and 24 (48.0%) don't. In the question "Have you ever been infected with Sars-Cov-2 virus?" 27 (54.0%) people answered "No" and 23 (46.0%) gave the opposite answer. The same results retrieved from question "Have you been vaccinated against Sars-Cov-2?", too. In the question "Do you think that wearing a mask and keeping distances protect us from Covid-19?", most of the participants (56.0%) answered "Yes" and only 5 (10.0%) individuals believe that these measures do not protect us at all (Table III).

A t-test which applied, shown those participants who have not been vaccinated against Sars-Cov-2 ($M_{FCV-19S}$=1.92, SD=0.85 & $M_{Cov-19SC}$=2.06, SD=1.19) are less afraid and concerned about the pandemic than those who have completed their vaccination ($M_{FCV-19S}$=2.71, SD=0.82 & $M_{Cov-19SC}$=2.74, SD=1.04) with statistical significance ($t_{FCV-19S}$=3.36, df=48, p<0.05 & $t_{Cov-19SC}$=2.12, df=48, p<0.05) (Table IV).

Table III

Frequency and Relative Frequency of questions about Covid-19 and existence of children	Variable	Frequency	%
Do you have children?	Yes	26	52,0%
	No	24	48,0%
	Total	50	100,0%
Have you ever been infected with Sars-Cov-2 virus?	Yes	23	46,0%
	No	27	54,0%
	Total	50	100,0%
Have you been vaccinated against Sars-Cov-2?	Yes	23	46,0%
	No	27	54,0%
	Total	50	100,0%
Do you think that wearing a mask and keeping distances protects us from Covid-19?	Yes	28	56,0%
	They do a little	17	34,0%
	No, they don't protect us at all	5	10,0%
	Total	50	100,0%

Table IV

Independent Sample Tests Between FSV-19S, Cov-19SC and Vaccination							
Have you been vaccinated against Sars-Cov-2?	Answer	N	Mean	Std. Deviation	t	df	Sig. (2-tailed)
Cov-19SC	Yes	23	2,74	1,04	2,12	48	0,039
	No	27	2,06	1,19			
FSV-19S	Yes	23	2,71	0,82	3,36	48	0,002
	No	27	1,92	0,85			

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Finally, it is reported that those individuals who answered "Yes" ($M_{FCV-19S}$=2.40, SD=0.89 & $M_{Cov-19SC}$=2.49, SD=1.16) in the recoding question "Do you think that wearing a mask and keeping distances protect us from Covid-19?" (Group A: Yes & Group B: No), are more both afraid and concerned about COVID-19 than the person who gave the opposite answer "No" ($M_{FCV-19S}$=1.26, SD=0.43 & $M_{Cov-19SC}$=1.33, SD=0.47) with statistical significance ($t_{FCV-19S}$=4.85, df=8.50, p<0.05 & $t_{Cov-19SC}$=4.24, df=10.78, p<0.05) (Table V).

Table V

Independent Sample Tests Between FSV-19S, Cov-19SC and Thoughts about Measures against Covid-19							
Do you think that wearing a mask and keeping distances protect us from Covid-19?	*Answer*	*N*	*Mean*	*Std. Deviation*	*t*	*df*	*Sig. (2-tailed)*
Cov-19SC	*Yes*	*45*	*2,49*	*1,16*	*4,24*	*10,78*	*0,001*
	No	*5*	*1,33*	*0,47*			
FSV-19S	*Yes*	*45*	*2,40*	*0,89*	*4,85*	*8,50*	*0,001*
	No	*5*	*1,26*	*0,43*			

Reliability Analysis

For the reliability analysis a Cronbach's alpha coefficient was calculated for both FSV-19S and Cov-19SC. Primarily, for the Fear of Covid-19 scale Cronbach's alpha coefficient based on standardized items was equal to 0.923. Secondly, for the Covid-19 Concern Scale, Cronbach's alpha coefficient based on standardized items founded equal to 0.950. So, it is concluded that both survey's scales have very high reliability level.

Associations

From the Chi-Square Test that implemented, it is marked that there is a statistically significant association between the recoded variable residence (Group A: City-Small Town & Group B: Village) and the question "Have you been vaccinated against Sars-Cov-2?" ($\chi^2 = 10.26$, df=1, Cramer's V=0.497, p<0.05). Similarly, there is a statistically significant association between the recoding variable marital status (Group A: Unmarried, Widower & Group B: Married, Divorced) and the question "Have you been vaccinated against Sars-Cov-2?" ($\chi^2 = 3.653$, df=1, Cramer's V=0.311, p<0.05).

Linear Regression Model

A liner regression model was constructed between the total FSV-19S and the total Cov-19SC. More specifically, it exists statistically significant positive correlation between the total Cov-19SC and the total FSV-19S (r=0.847, p<0.05). This means that the greater the levels of anxiety a person has, the greater the levels of fear of the Covid-19 pandemic. This also explained by the fact of the linear model (F=122.25, df=1, p<0.05) which is observed in the below table (Table VI).

Table VI

	Linear Regression Model Between Cov-19SC and FCV-19S				
	Coefficients	*B*	*Std. Error*	*t*	*Sig.*
1	*Constant*	*-0,065*	*0,24*	*-0,27*	*0,785*
Cov-19SC	*FSV-19S*	*1,068*	*0,10*	*11,06*	*0,000*

The hypothesis that the constant parameter of the model is equal to zero cannot be denied (p>0.05). On the contrary, the existence of the model it is based on the rejection of the null hypothesis that the coefficient of total FCV-19SC is equal to zero (p<0.05).

Therefore, the following linear equation is formed:

$$\text{Cov-19SC} = 1.068 * \text{FSV-19S}$$

The explanation of the above equation is that when the total FSV-19S (independent variable) is increased by 1 unit, the Cov-19SC (Dependent variable) will increase by 1.068. In addition, it is marked that the total FSV-19S explains 71.8% of the variability of the total Cov-19SC (R-squared=0.718). Finally, it noticed that the model did not show any problem in the tests for normality, stable variation, uncorrelatedness, correctness, and existence of outliers of error values.

Discussion

The main purpose of this survey was to examine the association between fear and concern about the pandemic, and the probable relation of the vaccination's opinion. To collect the data, a questionnaire which consisted of 25 questions, shared to 50 individuals for supplementation. Fear of Covid-19 Scale and Covid-19 Concern Scale were included in the questionnaire in addition to the sociodemographic questions.

The survey's sample parted from 26 (52.0%) men and 24 (48.0%) women, and the main age group was between 10 and 19 years old. One of the descriptive results is that most of the participants (90.0%) think that using faces masks and keeping distances protect or protect a little from Sars-Cov-2. In a study from Germany showed that participants believed that wearing masks protect us less than we protect others [17]. Thus, there is a remarkable contrast between the two surveys. Furthermore, most of the participants have not been vaccinated against Sars-Cov-2.

From the statistical analysis that performed, both the scales of Fear and Concern about the pandemic presented high levels of reliability, as well as the Cronbach's alpha coefficient was equal to 0.923 and 0.950 respectively. This result is consistent with that of the Greek survey about the validation and translation of the Fear of Covid-19 Scale [6]. In addition, it verifies the surveys of the Ahorsu et al. in which the Cronbach's alpha was equal to 0.82[9], and Lin et al, which the same coefficient was bigger than

0.7 [7]. Related to Cov-19SC, the reliability level of the current survey totally matches with the original version of the Scale [15].

To continue, the residence is a statistically significant factor that influences the fear's level of the pandemic, a finding that is opposite to Tsiropoulou et al.'s study [6]. Instead, the non-statistically difference between the professional status and the fear of Covid-19 is observed both to the current research and the original version of Greek FSV-19S study [6]. None of the sample's sociodemographic characteristics influence the concern about pandemic, a result that is extracted from Daleziou's survey, too [16]. However, this issue could not be characterized as serious, because each survey has its own sample and as it is well known, and highly acceptable, different populations correspond to different characteristics and views [18].

Vaccination influences both fear and concern about Covid-19. Specifically, a person who have been vaccinated against Sars-Cov-2 are more afraid than a person who have been vaccinated. This result correlates with one of the results of Bendau's et al., study, in which, vaccination's acceptance influences the fear's level that are linked to health [18]. Moreover, an understandable and reasonable finding is that wearing masks' and keeping distances' effectiveness is related both with the fear and concern about Covid-19. People who believe that these protection measures are useful have higher risk perception in addition to fear and concern, as Luu and Huynh underlined in their study [19].

Finally, a correlation model extracted by the statistical analysis between FSV-19S and Cov-19SC. In other worlds, Cov-19SC correlate positively with the FSV-19S. It could be said, that this result parallels that of Tsiropoulou's et al., study in which FSV-19S notes a statistically positive correlation with similar scales such as Generalized Anxiety Disorder Assessment (GAD-7) [6], [20]. A similar result is obtained if Morgano's et al. research is observed where FSV-19S is correlated positively with Coronavirus Anxiety Scale (CAS), which is maybe the most famous scale to measure anxiety in the pandemic era [21].

Conclusion

To sum up, this study aimed at the exploration of associations between sociodemographic and questions about Covid-19 and the total scales: Fear of Covid-19 Scale and Covid-19 Concern Scale on a sample consisting of permanent residents or visitors of a small village at western Fthiotis, Greece, named Tsouka. Residence, vaccination, and opinions about the measure's protection against the pandemic are influence fear and concern about Coronavirus with statistically significance. Moreover, there is a linear regression model between total FSV-19S and Cov-19SC without constants' existence. Based on research's findings, for further research, it is suggested to examine the relationship between Cov-19SC and CAS, as well as to perform a factor analysis of Cov-19SC with a larger sample size. Finally, the determination of a general model about fear, anxiety and concern about Covid-19 will be important to carry out, at a national level.

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