

## SARSCOV-2 PSYCHOSOMATIC EFFECTS AND FEAR OF STIGMA ON THE DISCHARGE DAY OF INFECTED INDIVIDUALS: SAPFO STUDY

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### SUMMARY

**Background:** Although research has been mainly focused on effective treatment for SARS-COV-2 infection, psychosocial aspects of the infection it is vital to be taken into consideration. The aim of the present study is to evaluate the psychosomatic effects and the fear of stigma which patients may face after the end of treatment and discharge from hospital.

**Subjects and methods:** This was a non-intervention perspective study conducted in the Department of Infectious Diseases of University General Hospital of Alexandroupolis (Greece). Patients on the discharge day completed questionnaires in which 5 topics were evaluated: pain/discomfort, anxiety/distress, fear/worries, stigma and tolerance of treatment. The questionnaires were derived from similar Quality of Life Tools. The total score of each patient was normalized as percentage.

**Results:** Females and younger than 40 years old had more worries and fears on discharge day. Significant factors were days of hospitalization, days of fever and need of oxygen therapy. Patients who hospitalized more than 10 days, particularly in isolation negative pressure rooms, with persistent fever more than 7 days and need of oxygen therapy had more anxiety, worries for their clinical condition and fear of stigma. The majority of patients (80%) were expecting to face moderate to severe problems with family members, friends and colleagues underlying the dimensions of stigma.

**Conclusions:** It is crucial to evaluate the psychosocial aspects of this infection and limit the stigma which patients may face returning to their daily routine. Further studies are needed with larger patient series and with the usage of psychometric instruments.

**Key words:** SARS-COV-2 infection - CoVID-19 - stigma - fear - psychosomatic effects

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### INTRODUCTION

Corona Virus Disease (CoVID-19) caused by the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) is an emerging public health problem with severe dimensions in all aspects of life (Lai et al. 2020). It was firstly described in Wuhan, China, in December of 2019, but soon was spread globally. (Zhu et al. 2020). CoVID-19 was declared by WHO as pandemic on 12<sup>th</sup> March (WHO 2020). On March 13, according to data of WHO, Europe became the center of pandemic. (WHO 2020). As of 13 April 2020 more than 2 million cases of SARS-COV-2 infection had been diagnosed (WHO 2020). The increasing number of infected people is leading to significant public anxieties and worries in many regions (Lin 2020).

The psychological effects of outbreaks such as SARS and pandemics such as AIDS have been assessed for both patients and the public. Emerging fear and stigma due to COVID-19 may induce negative consequences of disease control based on evidence of other outbreaks (Lin 2020, Person 2004). Infectious diseases are often associated with fear because they could be transmitted rapidly and invisibly and lead to high rates of mortality (Pappas 2009). Studies have shown that psychological reactions such as hypochondriasis and anxiety affect negatively health and well-being of people during outbreaks (Pappas 2009). They are also

associated with ethical dilemmas as the patient could be both the victim and the vector and the infringement of individual liberties could be demanded in order to control a large-scale infectious disease outbreak (Epstein 2008, Selgelid 2005).

Although research has been mainly focused on effective treatment for SARS-COV-2 infection, psychosocial aspects of the infection it is vital to be taken into consideration. The aim of the present study is to evaluate the psychosomatic effects and the fear of stigma which patients may face after the end of treatment and discharge from hospital. It is significant to recognize the fears of patients with COVID-19 and find appropriate ways to limit them as this will improve the quality of their lives.

### SUBJECTS AND METHODS

This was a non-intervention perspective study conducted in the Department of Infectious Diseases of University General Hospital of Alexandroupolis (Greece) during the period from March 15 to April 15 of 2020. The aim of the study was to evaluate in SARSCoV-2 infected patients the psychosomatic effects and fear of stigma on the discharge day (SAPFO study). The study was approved by the Ethics Committee of the hospital and carried out in accordance with the Helsinki Declaration of Human Rights. Patients were included in the study after given signed their informed consent.

Inclusion criteria were: Individuals infected by SARS-COV-2, age >18 years old, completion of antiviral treatment and clinical improvement (no symptoms and negative result of Real Time-Polymerase Chain Reaction), normal mental status.

Patients on the discharge day completed questionnaires in which 5 topics were evaluated: pain/discomfort, anxiety/distress, fear/worries, stigma and tolerance of treatment. The questionnaires were derived from similar Quality of Life Tools (Burckhardt & Anderson 2003). There were five possible answers for each question. Every answer was estimated with points from 1 for the lower to 5 for the higher effect of SARS-COV-2 infection on each topic. Patients were asked to grade their health status from 0 to 100 which reflected the worst clinical condition. They were asked if they had problem to return to their daily routine. It was also documented which was their most significant worry during the hospitalization. There were four possible answers: anxiety for family, isolation, uncertainty and worry for clinical improvement. The maximum score was 130. The total score of each patient was normalized as percentage.

Data from routine care patient charts were analyzed. The results of questionnaires were evaluated in associa-

tion with the gender, the age group (<40, 40-50, 50-60, >60 years old), number of days of hospitalization, number of days of fever, the need of oxygen therapy, the clinical condition of family members and the room of hospitalization (isolation negative pressure room or room with other patients).

## RESULTS

Twenty six patients were included in the present study. The majority of patients were women (61.5%). The median age of women was 49.9 years old, younger than men whose median age was 60.8. Three patients (11.5%) were younger than 40 years old. The percentage of patients in the age group of 40-50 years old and the age group of 51-60 years old was 26.9% and 19.2%, respectively. The majority of individuals were older than 60 years old (42.3%). Hospitalization more than ten days was needed for 6 of them (23.1%). Fever was persistent for more than seven days in 8 persons (30.8%). Nine (34.6%) received oxygen therapy. Only one patient needed intubation. Eleven individuals (19.2%) had family members infected from SARS-COV-2 and/or hospitalized. Fifteen were hospitalized in isolation negative pressure rooms (57.7%).

**Table 1.** Results

	N (%)	Scores of questionnaires normalized as percentages	
<b>Gender</b>			
Male (Median age 60.8)	10 (39.5%)	16.7%	
Female (Median age 49.9)	16 (61.5%)	21.6%	
<b>Age</b>			
<40 years old	3 (11.5%)	25.4%	
40-50 years old	7 (26.9%)	16.5%	
51-60 years old	5 (19.2%)	18.5%	
>60 years old	11 (42.3%)	17.3%	
<b>Days of hospitalization</b>			
<10 days	20 (76.9%)	15.4%	
>10 days	6 (23.1%)	21.0%	
<b>Days of fever</b>			
<7 days	18 (68.2%)	15.7%	
>7 days	8 (30.8%)	26.7%	
<b>Room of hospitalization</b>			
Isolation negative pressure room	15 (57.7%)	25.3%	
Room with other patients	11 (42.3%)	18.6%	
<b>Need of oxygen therapy</b>			
Yes	9 (34.9%)	25.6%	
No	17 (60.1%)	16.6%	
<b>Infected/Hospitalized family member</b>			
Yes	11 (19.2%)	22.3%	
No	15 (80.8%)	19.3%	
<b>The most significant worry during hospitalization</b>			
Anxiety for family N (%)	Isolation N (%)	Uncertainty N (%)	Worry for clinical improvement N (%)
21 (80.8%)	4 (15.4%)	1 (3.8%)	0

The scores conducted from the answers in the questionnaires were normalized as percentages. Results are shown in the table 1. The median value of percentages among women was 21.6% , higher than men where the corresponding median value was 16.7%. The most negative impact of SARS-COV-2 infection was documented in patients younger than 40 years old whose median value of percentages was 25.4%. The corresponding values were 16.5% in age group 40-50 years old, 18.5% in age group 51-60 years old and 17.3% in patients older than 60 years old. Psychosomatic effects and fear were more significant in individuals hospitalized more than ten days. Their normalized score was 21.01%. The similar findings were conducted regarding the number of days of fever. The normalized score in patients with fever more than seven days was 26.7%, significantly higher compared to those with fever less than seven days (15.7%). Patients needed oxygen therapy were facing on discharge day more fears and worries. Among them the median value of percentages was 25.6%, while in patients with no need of oxygen during their hospitalization was 16.6%. Patients hospitalized in isolation negative pressure rooms had higher scores of fear and anxiety. The normalized percentage was 25.3%. The percentage was 18.6% among those hospitalized in a room with other patients. Another factor associated with the psychosomatic effects of the infection was the clinical condition of family members. Patients with infected and/or hospitalized family members were more worried on discharge day (score 22.3%).

None after the completion of antiviral treatment and clinical improvement answered on the discharge day that he will have problem returning on daily routine and usual activities. The majority (80.8%) answered that the most significant worry during hospitalization was the anxiety for their family. Approximately 80% of patients answered that their illness will induce moderate to severe problems in dealing with family, friends or colleagues indicating the significant dimensions of fear of stigma.

## DISCUSSION

The aim of the present study was to evaluate the psychosomatic effects and fear of stigma in patients infected from SARS-COV-2. Females and younger than 40 years old had more worries and fears on discharge day. Significant factors were days of hospitalization, days of fever and need of oxygen therapy. Patients who hospitalized more than 10 days, particularly in isolation negative pressure rooms, with persistent fever more than 7 days and need of oxygen therapy had more anxiety, worries for their clinical condition and fear of stigma. Infection or/and hospitalization of family members was another important reason inducing worries. The majority of patients (80%) answered that they were expecting to face moderate to severe problems with family members, friends and colleagues underlying the dimensions of stigma.

The pandemic of COVID-19 in combination with measures of isolation and quarantine caused to the public feelings such as unsafety, uncertainty and anxiety (Shigemura 2020, Rong 2020). Outbreaks of infectious disease are associated with psychological distress and symptoms of mental illness (Rong 2020). Frustration, fear of causing infection, insomnia and irritability are often the effects of quarantine which may induce disorders and chronic post-traumatic stress syndrome (Bao 2014, Banerjee 2020). Several studies have identified vulnerable groups to the mental health impact of the COVID-19 pandemic such as older adults, homeless, migrant workers, mentally ill and pregnant women (Banerjee 2020, Tsai & Wilson 2020). Fear and anxiety may lead to stigma and discrimination of certain groups (Yang et al. 2020). Fear of stigma has been depicted in the present study as well. In published literature for other outbreaks stigma was often continuing after the end of quarantine or even after containment of the outbreak (CDC 2020) Patients had to deal with people avoiding them, withdrawing social invitations, treating them with fear and suspicion, and making critical comments (Bai 2004, Pan et al. 2005, Pellecchia et al. 2015, Reynolds et al. 2008).

Limitations of the study are the small number of patients and the difficulty to evaluate objectively conditions like fear, anxiety and stigma.

## CONCLUSION

Research is currently focused on treatment of SARS-COV-2 infection and creation of an effective vaccine. However, it is crucial to evaluate the psychosocial aspects of this infection and limit the stigma which patients may face returning to their daily routine. Further studies are needed with larger patient series and with the usage of psychometric instruments in order to assess the impact of the infection on quality of patients' lives. Reduction of fears and psychosomatic effects in addition to clinical improvement is important in order to improve the quality of life of patients. Mental health professionals could support patients during hospitalization and after that in order to deal with their fears.

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**Conflict of interest :** None to declare.

### **Contribution of individual authors:**

Panagopoulos Periklis designed the study and contributed to the manuscript writing.

Papazoglou Dimitrios contributed to the study design.

Petrakis Vasilis was responsible for the literature research and the manuscript writing.

Penlioglou Theano and Kapetanidou Elli contributed to the data collection.

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