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Research Article

## Analysis on how COVID-19 is affecting health care workers

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**Abstract.** The COVID-19 pandemic has impacted most of the world's population, in this paper we are interested particularly in how it has impacted directly the healthcare workers and front-liners working in Malta. The questionnaire conducted focused on issues that impacted them directly and indirectly such as stress levels, work load, and their psychological well-being. Whilst it is evidence that during the pandemic, health care workers were faced with psychological challenges, health care professionals working in Malta still shy away from looking for help for various reasons such as lack of resources, lack of education and fear of stigma. Through this research, it seems that the way forward during these challenging times is to increase the support from government entities, to increase education and awareness regarding mental health and support.

Keywords: COVID-19, Healthcare Workers, Malta

## 1 Aim

The aim of our questionnaire is to look into how this pandemic has effected the health care workers, in terms of workload, stress and other concerns they might have. The response we have is mostly coming from nurses as well as a minor number coming from doctors, and other health care professionals.

## 2 Introduction

COVID-19 pandemic has led to the entire humanity worldwide to face a severe health care crisis. The World Health Organisation (WHO) defines a pandemic to be "an epidemic occurring worldwide, or over a very wide area, crossing international boundaries and usually affecting a large number of people." (Doshi, 2011) Yet it is not the first time that humanity has had to deal with a pandemic. Throughout this century many pandemics have emerged and have been tackled with including the Spanish Flu, Severe acute respiratory syndrome (SARS), Middle East respiratory syndrome (MERS), Ebola, Swine Flu. It is important to note how pandemics do not only cause increased physical illnesses and unfortunately increased mortality but it also leads to tremendous mental health problems including anxiety and depression in both the infected and non-infected. (Wiebers et al., 2020)

Throughout this pandemic we are continuously praising the work of our front-liners health care workers (HCW) who are playing a crucial role in providing care to the community. Working in such foreseen circumstances with a risk of contracting the virus, HCWs have a high prevalence of mental health problems including anxiety, depression, burnout, illness, anxiety and so on. In fact, numerous international literature and studies have evidenced how HCWs who are directly working with COVID-19 patients are not only at increased risk of contracting the virus but also at increased risk of developing mental health symptoms. It is very easy take for granted the mental health of HCWs since it is HCWs who deal with the community's mental health and hence it is often considered that they would be able to manage themselves well. The increasing number of confirmed positive cases, deaths, work burden, not enough personal protective equipment, lack of specific treatment, having to stay in quarantine, being away from their loved ones, risk of themselves of getting infected can all lead to a mental health burden to HCWs. In fact, studies and literature on the psychological impact of COVID-19 pandemic and previous pandemics on HCWs is still elusive. (Bai et al., 2004; Chan, 2003; Wong et al., 2005)

The current paper is aimed to evaluate the mental health effect of the HCWs during the COVID-19 pandemic, by quantifying the magnitude of their symptoms of depression, anxiety and analysing potential risk factors associ-



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ated with these symptoms.

## **3** Material and Methods

Study Setting: Ethical approval for the study was obtained from the local ethics committee of Pro Deo International, University and University of Catania. The study was conducted with the use of an anonymous questionnaire sent to Front Liners working in the Medical Aspect including doctors, nurses, carers, physiotherapists, pharmacists and all other workers who have worked or are still working in a hospital or clinical setting. Each medical front liner who works with the Government in Malta has a government email. Medical front liners were reached by an email through their government email. The collection period of questionnaire collection was from the beginning of August till the end of October. Obviously numerous health care professionals work in private setting in Malta and Gozo yet it was found to be virtually impossible to obtain the emails of all the health care professionals who work privately and hence in order to try to avoid bias it was concluded that questionnaires would only be sent to those who work with the Government of Malta. No other exclusion criteria were set.

Study Design: The study was a questionnaire-based analytical study to asses work stress during the pandemic using numerical scales where 1 referred to the least stress levels and 10 referred to the most stress levels that the individual is experiencing. Collection and analysis of data was carried out by a team composed of 4 people, who were previously trained on the content of the questionnaires. The data are grouped according to the questions posed and statistical processing is done with the program: Microsoft Word and Microsoft Excel. They are calculated by the following statistical analysis i.e., frequency, percentage and arithmetic mean. Presentation of data is done through tables and graphics.

### 4 Resultus

### 4.1 Demographic Data

In total 162 participants consented to participate in the questionnaire. The demographic data of the questionnaire participants is shown in figure 1. From these 162 participants, 22 were 25 years old or younger, 28 were 26-35 years of age, 37 were 36-45 years of age, 47 were 46-55 years of age while 28 were 56 years old and older. Therefore, it was concluded that most of our replies (29%) came from people between the age of 46 and 55 years and the age group with least response was that of 25 or younger (14%).

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**Figure 1:** A Pie Chart showing the Demographic Data of the 162 health-care workers participants who consented to participate in the questionnaire.

Hospital-based "multidisciplinary teams" often involve all levels of "staff" on the treatment pyramid including aides, nurses, physician assistants, physical therapists, social workers, anaesthesiologists, and attending physicians. For the sake of this study, charge nurses, deputy nursing officers, health care worker, human resources, infection prevention and control. Medical lab scientist, medical representative, nurse administrator, nursing officer, senior nursing manager and senior ECG technician are considered as other professions for this study. Nurses, Doctors, Radiographers, Midwives, Occupational Therapists and Physiotherapists are considered as an individual entity. From the 162 participants, 128 identified as nurses, 7 as doctors, 5 as midwives, 7 as radiographers, 1 physiotherapist while 13 identified as other professions. Most of our participants came from nurses, contributing to 79% of our data, followed by other professions (8%), doctors and radiographers both contributing to 4% of our data. In turn followed by midwifes, contributing to 3% of our data and our least contributors came from occupational therapists, contributing to only 1% of our data. This data is collected in figure 2. In figure 3 the contribution of the specific professions who identified as other professions is also presented in the form of a bar chart.

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No

Yes



Figure 2: A Pie Chart showing the Profession of the 162 healthcare worker participants who consented to participate in the questionnaire.



Figure 3: A Bar Chart showing the contribution of the specific professions who identified as other professions.

## 4.2 Direct Contact with COVID-19 Patients

As seen in figure 4, 62 out of 162 said that they work directly with COVID-19 patients, however it is interesting to note from figure 5 that 128 participants reported an increase in workload. Therefore, the authors can presume that as a matter of fact this pandemic has resulted in an increase in workload in all Health Care Workers despite being directly or not directly involved with COVID-19 positive patients.



Figure 4: Health Care Workers Participants who reported that

they work in direct or indirect contact with COVID-19 Patients.

Figure 5: Pie chart showing Health Care Workers Participants who reported an increase or not an increase in Workload during the COVID-19 Pandemic.

### 4.3 Stress Levels

As shown in figure 6, from the 162 participants, 142 have reported that they have felt that they are more stressed once the pandemic started, whilst only 20 participants have reported feeling that they have the same level of stress. One thing which the authors found interesting was that no participant has reported that they feel less stressed.



**Figure 6:** Health Care Workers Participants who reported the same amount or an increase in stress levels during the COVID-19 Pandemic.

As described above the stress scale used demonstrated the individual's self-reporting of stress from a scale of 1-10 with 1 being the least stressed and 10 being the most stressed. The stress scale and the number of people who corresponded to a specific stress scale is portrayed in figure 7. From figure 7 it can be noted how most of the participants, 52% reported a self-stress level of 8, while 29 participants contributing to 18% of the 162 participants reported a stress level of 10. As can be seen from the average of health care workers who have participated average stress level is 7.64 from 10. This is considered quite high. As will be shown below, the authors tried to deduce specific aspects which may have contributed to stress levels HCWs.



On a scale of 1 (being the least stressed) to 10 (being the most stressed): How do you feel?

**Figure 7:** Stress scale and the number of people who corresponded to a specific stress.

# 4.4 Professional stressors in healthcare workers

As shown in figure 8, 134 of the participants feel that they are not receiving enough help in terms of their mental health. 45 said that they believe their concerns have a voice, whilst 117 believe their concerns do not have a voice. 54 of the participants feel well trained to face the pandemic whilst 108 do not. Of 162 participants 104 feel concerned about the currently available amount of personal protective equipment (PPEs). 141 still live with their relatives, whilst 21 had to move when the pandemic started due to fear of infection transmission. Of those who had to move, all but 2 answered that it had a huge impact on them. 134 did not feel the need to seek mental health help and 28 did or will be doing so. 149 participants feel like they were never trained for a pandemic, whilst 13 do.



**Figure 8:** Pie chart showing Health Care Workers Participants feelings regarding whether they are receiving enough help for their mental health.

On the other hand, when participants were asked from a scale of 1-10 (1 being the least successful and 10 the most successful) of how the government was handling the situation in our country (table 1) and how the country's health sector is handling the situation (table 2) the results were mixed.

How well do you think your country's government is handling the situation?	Number of People						
1	11						
2	9						
3	9						
4	12						
5	24						
6	21						
7	24						
8	21						
9	18						
10	13						

 Table 1: Country's government situation and the number of people who corresponded

How well do you think your country's health sector is handling the situation?	Number of People						
1	7						
2	7						
3	10						
4	13						
5	22						
6	18						
7	27						
8	33						
9	17						
10	8						

 
 Table 2:
 Country's health sector handling of COVID-19 pandemic and the number of people who corresponded

It is also interesting to note how 87 of the participants have reported that they are feeling quite anxious and more anxious then normal while 75 of participants have reported to be a little more anxious than usual. When asked about what is worrying them the most, most have reported the following:

- Constant changes in contingency plan and protocols
- Getting sick with COVID-19 as well as long term complications
- Infecting family members especially vulnerable ones
- Lack of PPEs in certain wards
- Lack of proper education on doffing and donning
- Miscommunication between management and staff
- Staff shortage
- Lack of bubbles due to staff rotation

- How COVID-19 is Affecting Health Care Workers
- Uncertainty and well as lack of education/information
- The longevity of the pandemic
- Burnout
- Lack of concern from the general public, false histories and those refusing to wear a mask
- Being away from relatives
- Solitude

## 5 Discussion

The COVID-19 pandemic has made a huge impact globally, it has effected every aspect of society, however this research main aim was evaluating how it has effected the health care workers in terms of workload, stress and what has been concerning them the most. This study was conducted with the aim to reach different health care professionals; most of the respondents were nurses. We have 96% of our participants from the Maltese Islands, whilst - the other 4% are from Macedonia, Italy, Philippines and Pakistan. Less than half of the participants work directly in COVID-19 dedicated wards with COVID-19 positive patients, however the majority reported that their work load increased nonetheless. As expected the majority reported feeling more stressed than usual and none of our participants felt less stressed. What was found surprisingly worrying was the average stress level of 7.64, showing that stress levels within the health care community are quite extensive. Moreover, most of the participants believe they are not receiving enough help when it comes to their mental health. Lack of support from the system, the fear of being infected as well as transmission to family members were few of the concerns expressed which are increasing the stress levels in health care workers.

When asked what is worrying them the most, a trend can be established; the biggest concern was becoming infected as well as transmission to their families and the long term complications of this infection. Most were also worried about the establishment, as they expressed lack of communication as well as miscommunication, constant change in contingency plans and protocols, lack of necessary PPEs, lack of training in doffing and donning, and shortage of staff. Most felt unprepared and untrained with regards to a pandemic. Others had emotional concerns such as the longevity of the pandemic, fear of burnout, solitude and the lack of respect, co-operation and concern from the general public. Half of the participants also found themselves more anxious than usual.

It has already been shown that health care workers have a tendency for burnout, increased stresses and poor mental health states. The added pressures from the pandemic exacerbated these exponentially. Increased deaths within the hospital, increased demands and reduced control over

the situation continues to put extensive pressure on health care professionals (Mehta et al., 2021). Through these results, a conclusion can be drawn that well-structured mental health care should be provided to these professionals; it should be an integral part of the profession and it should be person-centred (Eftekhar Ardebili et al., 2021). These trends are also present in other studies done outside the Maltese Islands on other health care workers, showing that it's a universal phenomenon. For example, studies done in Italy show the urgency for health care help provided in a structured and fast way to the health care workers. It has been suggested that programmes are implemented where medical professionals are assessed psychologically similar to the way they are assessed in terms of fitness to practice (Chirico et al., 2020).

Although the results showed this pandemic had a huge impact on health workers, it was surprising that most did not feel the need to seek mental health help. This could be due to fear of stigma within the work environment, lack of adequate help services, lack of time and the belief that one can handle the situation without external help. Most health care workers in Malta feel that the government is handling the situation well but not good enough. The majority belief that our health sector is handling the pandemic well. This has to be viewed in the light of political affiliations within the Maltese Islands.

### 5.1 Study Limitations

At the time of conducting our questionnaire, we didn't feel the necessity to ask about gender because it doesn't change the final result we want to obtain from this study. However, it could have reflected differences in gender when it comes to mental health and stress related to work. We would have liked more participation from other countries, so as to compare, with the limited data we have we cannot make reliable comparisons.

## 6 Conclusion

The professional stress levels amongst healthcare workers were assessed by the numeric rating scale and it was found that more than half of them were stressed. There was no significant difference in stress levels between different grades of doctors and administrative staff. All workers in health care profession are equally stressed. The main occupational stressors were inability to finish work in available time, not having clarity about work, loss of interest, not being valued or rewarded for their work, frigid attitude of higher authorities. High stress levels in healthcare workers can lower the quality/efficiency in delivery of healthcare. Psychological stress was found to be related to respondents' perception of their own health and risk of being infected among both healthcare and front-

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### 6.1 Recommendations

There should be screening of stress incorporated during induction and training programmes. Individuals should be evaluated and counselled about psychological interventions of stress management. The Government should also take measures in regular trainings and assistance in terms of mental support program usage. The higher authorities should encourage the healthcare workers to make use of such programs. The health system should also make sure that the workers receive appreciation, recognition and rewards for their work which keeps them motivated at work.

### References

- Bai, Y., Lin, C. C., Lin, C. Y., Chen, J. Y., Chue, C. M. & Chou, P. (2004). Survey of stress reactions among health care workers involved with the sars outbreak. *Psychiatr Serv*, 55(9), 1055–1057.
- Chan, S. (2003). Nurses fighting against severe acute respiratory syndrome (sars) in hong kong. *Journal of Nursing Scholarship*, *35*(3), 209.
- Chirico, F., Nucera, G. & Magnavita, N. (2020). Protecting the mental health of healthcare workers during the covid-19 emergency. *BJ Psych International*, *18*(1), 1–2.
- Doshi, P. (2011). The elusive definition of pandemic influenza. *Bull World Health Org*, *89*, 532–538.
- Eftekhar Ardebili, M., Naserbakht, M., Bernstein, C., Alazmani-Noodeh, F., Hakimi, H. & Ranjbar, H. (2021). Healthcare providers experience of working during the covid-19 pandemic: A qualitative study. *Am J Infect Control*, 49(5), 547–554.
- Mehta, S. et al. (2021). COVID-19: A heavy toll on health-care workers. *The Lancet Respiratory Medicine*, 9(3), 226–228.
- Wiebers, D. & Feigin, V. (2020). *Neuroepidemiology*, *54*, 83–286.
- Wong, T. W., Yau, J. K., Chan, C. L. et al. (2005). The psychological impact of severe acute respiratory syndrome outbreak on healthcare workers in emergency departments and how they cope. *European Journal* of *Emergency Medicine*, 12(1), 13–18.

# 7 Appendix

## 7.1 Questionnaire used to carry out this study

Age	$\Box$ 25 years old and younger $\hfill \Box$ 26-35			26-35	□ 36-45		□ 46	-55	$\Box$ 56 and older	
Nationality										
Country you currently work in										
Profession	□ Dentist		Doctor		□ Midwi	fe	□ Nurse	□ Occu	pational th	nerapist
	⊔ Physioth	ierapist	□ Radiogra	apher	□ Speec	h languag	e patholog	ist	⊔ Other	
If you chose Other to the above, please specify										
Are you in direct contact with COVID-19 patients?			□ Yes					⊔ No		
Did your workload increase?			□ Yes					□ No		
At your work place, do you feel	$\Box$ more stressed?				$\Box$ the same?			□ less?		
On a scale of 1 (being the least stressed) to 10 (being the most stressed) how do you feel?	□ 1	□ 2	□ 3	□ 4	□ 5	□ 6	□ 7	□ 8	□ 9	□ 10
Do you feel you are receiving enough help in terms of your mental health?			□ Yes					🗆 No		
Do you believe your concerns have a voice?			□ Yes					□ No		
Do you feel well trained to face a pandemic?			□ Yes					□ No		
Do you feel concerned about the currently available $\ensuremath{PPEs}\xspace$			□ Yes					□ No		
What is currently worrying you the most? 1 sentence answer $% \left( {{\left[ {{{\rm{T}}_{\rm{T}}} \right]}} \right)$										
If you live with relatives, are you still living with them or did you have to move for their safety?			□ Yes					□ No		
If answer to above is no, do you feel that moving made a huge impact in your life?			□ Yes					□ No		
How well do you think your country's government is handling the situation?	□ 1	□ 2	□ 3	□ 4	□ 5	□ 6	□ 7	8 🗆	□ 9	□ 10
How well do you think your country's health sector is handling the situation?	□ 1	□ 2	□ 3	□ 4	□ 5	□ 6	□ 7	□ 8	□ 9	□ 10
During these challenging times, did you seek help from a psychologist or a counselling service/do you plan to find help?			□ Yes					□ No		
With all this uncertainty do you find yourself being anxious/ more anxious than normal?			□ Yes					□ No		
Do you feel that during your professional training you were ever prepared for a pandemic scenario?			□ Yes					□ No		