A descriptive study of the psychological experience of health care workers in close contact with a person with COVID-19

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ABSTRACT

Background: COVID-19 has the potential to affect the mental health of health care workers (HCWs). It is known that HCWs who serve as front-liners during the COVID-19 pandemic experience stress and have the fear of contracting the infection. Little is known of how being a positive contact affects HCWs. Objective: We examined the experience of HCWs who were quarantined following a close unprotected contact with a COVID-19 positive colleague and explore the psychological impact especially as the timing of the quarantine coincided with the *Eid* (annual Muslim festival) celebration in Malaysia.

Methods: This was a cross-sectional on-line questionnaire study, involving HCWs exposed to a COVID-19 positive colleague in Universiti Kebangsaan Malaysia Medical Centre, a teaching hospital. Data on demographics, levels of depression, anxiety and stress using a validated depression, anxiety, and stress scale (DASS-21) questionnaire, aspects of quarantine, wearing of masks, hand hygiene practice and swab experience were collected.

Results: Twenty-two HCWs participated. Eighteen (81.8%) were between 30-39 years and 17 (77.3%) were women. Majority 19 (86.3%) were Malays. There were twelve (54.5%) medical officers, 5 (22.7%) specialists and 5(22.7%) allied health staff. Eighteen out of 22 (81.8%) felt they were able to do home quarantine adequately. All tested negative with a mean (Standard Deviation) hour of contact of 2.56±2.38 hours. Eighteen reported their biggest concern was infecting their families.

Conclusion: HCWs undergoing contact swabbing and quarantine are vulnerable to depression, anxiety and stress. The ability of the HCW to adequately home quarantine should not be taken for granted. Psychological support should be offered to HCWs who are positive contacts.

KEYWORDS:
Coronavirus disease 2019 (COVID-19), psychological experience, quarantine, hand hygiene, contact screening

INTRODUCTION

COVID-19 pandemic was first reported in Malaysia in March 2020. It spread rapidly. As the numbers increased, many healthcare workers (HCWs) were involved in managing COVID-19 patients. They were reported to be overburdened with work and many reported stress, stigmatization, anxiety and depression during this period. The prevalence of anxiety and depression was reported as 23.2% and 22.8% respectively of HCWs during COVID-19.[1,2] We describe the effect of HCWs of being identified as being a close contact to a confirmed COVID-19 positive individual. Guidelines dictate that close contacts undergo both quarantine and testing from samples collected from the oropharynx and nasopharynx.

MATERIALS AND METHODS

Study subjects

This was a cross-sectional online questionnaire survey involving HCWs from the medical department in the Universiti Kebangsaan Malaysia Medical Centre, who were in contact with a positive COVID-19 colleague. The HCWs involved were specialists, medical officers and allied health staff from the hospital.

Interview outline

We explored the psychological experience of HCWs using phenomenological methods. The main themes of the questionnaire (Table II) were: (1) wearing of masks, (2) hand hygiene, (3) quarantine, (4) DASS-21 depression anxiety stress scale test, (5) experience from contact screening, and (6) concern about being identified as a close contact to COVID-19 case. The DASS-21 is a self-reported questionnaire designed to measure the emotional states of depression, anxiety and stress.

Data collection

An online questionnaire was sent to the participants via email on day-10 of the quarantine period after their second nasopharyngeal RT-PCR COVID-19 test. Consent was obtained and they were given 24 hours to complete the questionnaire.

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Table I: Demographics of HCWs exposed to a COVID-19 positive colleague

Variables	HCW (n=22)
Age(years)	
30-39	18(81.8%)
40-49	4(18.2%)
Sex	
Male	5(22.7%)
Female	17(77.3%)
Ethnicity	
Malay	19(86.4%)
Chinese	2(9.1%)
Indian	1(4.5%)
Others	0
Designation	
Specialist	5(22.7%)
Medical officer	12(54.6%)
Allied health worker	5(22.7%)
Frequency of follow-up on COVID-19 related updates	
Sometimes	8(36.4%)
Always	14(63.6%)
Number of members in the household	
1	1(4.5%)
2	4(18.3%)
3	3(13.6%)
4	5(22.7%)
5	2(9.1%)
6	3(13.6%)
7	2(9.1%)
8	2(9.1%)
Frequency of contact in the previous 2 weeks (mean±SD)	3.54(2.63)
Total hours of contact in the previous 2 weeks (mean±SD)	2.56(2.38)

* SD-Standard Deviation

Data analysis

Three researchers reviewed the interview materials, summarised and formulated the meaningful statements.

RESULTS

Demographic data

We enrolled five male and 17 female HCWs, with an average age of 35.40±4.58 years. Their working experience ranged from 5 to 23 years. The mean frequency of contact with the indexed case in the previous two weeks was 3.54±2.63. The mean total hours of contact was 2.56±2.38 hours.

The findings of the six main themes of the questionnaire are summarised below.

Theme 1: Wearing of surgical masks

The majority of the HCWs in our study adhered strictly to wearing of masks. Eighteen of them attended a meeting or gathering of more than three people two weeks prior to contact with the COVID-19 positive co-worker. In terms of their habit of wearing mask , 20 of them wore masks while attending patients and 16 wore masks while attending any gatherings or meetings.

Theme 2: Hand hygiene

The majority of HCWs adhered to hand hygiene. Between 81.81% to 90.90% of them washed their hands before and after examining the patients.

Theme 3: Quarantine

Eighteen out of the 22 (81.8%) of the participants in the study felt they were able to do home quarantine adequately. Four HCWs felt that they were unable to do home quarantine. The majority of the HCWs had rooms with attached bathrooms for self-quarantine. Twenty-one out of 22 (95.5%) of the participants were familiar with the requirements of the home quarantine by the Ministry of Health Malaysia. Fifty percent reported having a shared rooms at home and 72.7% reported having access to their own bathrooms and 59% lived with persons more than 65 years or children <5 years olds.

Theme 4: DASS-21 Depression Anxiety Stress Scale Test

None of the specialists had abnormal test scores. Medical officers (MOs) reported higher depression, anxiety, and stress scores compared with other HCWs. Three MOs and three allied health workers had abnormal scores. Among the three MOs with abnormal scores, one had extremely severe levels of depression and stress with moderate level of anxiety, one had mild depression and stress level, and one had mild depression and stress levels with moderate anxiety level. Two allied health workers had mild depressive, anxiety, and stress levels.

Theme 5: Experience from contact screening

The majority of HCWs (77.27%) reported satisfaction with the explanation given prior to the nasopharyngeal and oropharyngeal swab experience. Fifteen HCWs (68%) indicated that they were unwilling to undergo future swabs voluntarily.

Table II: HCWs' psychological experience on wearing of masks, hand hygiene, quarantine, DASS-21 score, contact screening, and as a close contact to Covid-19 case

	Specialist(n=5)	MO(n=12)	Allied health(n=5)
Wearing of surgical masks			
Question: Have you attended a meeting or gathering of more than 3 people in the last 2 weeks?			
Yes	4	11	3
No	1	1	2
Question: Have you attended a patient without wearing a mask in the last 2 weeks?			
Yes	1	0	1
No	4	12	4
Question: Have you attended a meeting or gathering without wearing a mask in the last 2 weeks?			
Yes	3	3	0
No	2	9	5
Hand hygiene			
Question: Have you ever not wash your hands before seeing a patient in the last 2 weeks?			
Yes	2	2	0
No	3	10	5
Question: Have you ever not wash your hands after seeing a patient in the last 2 weeks?			
Yes	1	0	1
No	4	12	4
Quarantine			
Question: Do you feel you are able to do home quarantine adequately?			
Yes	4	9	5
No	1	3	0
Question: Are you familiar with the details of home quarantine by the MOH			
Yes	5	11	5
No	0	1	0
Question: Do you share a room with someone?			
Yes	2	4	5
No	3	8	0
Question: Is the bed > 1 metre apart?			
Yes	0	2	2
No	1	1	1
NA	4	9	2
Question: Do you have access to your own bathroom?			
Yes	3	11	2
No	2	1	3
Question: Do you live with any persons aged 65 or children younger than 5?			
Yes	2	8	3
No	3	4	2
DASS-21 Depression Anxiety Stress Scale Test			
Stress level			
Normal	5	9	3
Mild	0	2	2
Moderate	0	0	0
Severe	0	0	0
Extremely severe	0	1	0
Anxiety level			
Normal	5	10	2
Mild	0	1	2
Moderate	0	1	1
Severe	0	0	0
Extremely severe	0	0	0
Depression Level			
Normal	5	9	3
Mild	0	2	2
Moderate	0	0	0
Severe	0	0	0
Extremely severe	0	1	0
Experience from contact screening			

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	Specialist(n=5)	MO(n=12)	Allied health(n=5)
Question: I am satisfied with the explanation given before nasal swab			
Neutral	1	2	2
Somewhat satisfied	2	8	3
Very satisfied	2	2	0
Question: How likely are you to undergo further swabs voluntarily?			
Very likely	0	1	0
Neutral	1	3	2
Unlikely	0	5	3
Very unlikely	4	3	0
Concern about being identified as a close contact to COVID-19 case			
Statement 1: I worry about infecting my family members (1= biggest concern, 5=least concern)			
1	4	12	2
2	0	0	2
3	0	0	3
4	1	0	0
5	0	0	0
Statement 2: I worry about contracting the disease			
1	1	8	2
2	2	4	1
3	0	0	2
4	0	0	0
5	2	0	0
Statement 3: I am worried about not being able to do my calls			
1	0	4	2
2	2	3	1
3	1	4	1
4	0	1	1
5	1	0	0
Statement 4: I am worried about burdening my colleagues with extra work			
1	2	6	2
2	1	2	1
3	0	3	2
4	1	1	0
5	1	0	0
Statement 5: believe I am not at risk of getting COVID-19			
1	1	3	1
2	0	2	0
3	1	4	4
4	1	2	0
5	2	1	0

Theme 6: Concern about being identified as a close contact to COVID-19 patients

Majority of the HCWs stayed with their family members and had either elderly persons or children <5 years living in the same house. Eighteen reported their biggest concern to be infecting their family members. Other important concerns were worry about contracting the disease and worry about burdening their colleagues with extra work. The HCWs were least concerned about the risk of contracting COVID-19 themselves and their inability to perform on-call duties.

DISCUSSION

COVID-19 has played a large part in our lives since its outbreak in March 2020. The implementation of the movement control order (MCO) by the Malaysian government and targeted testing strategy has proven successful. With the number of deaths and cases decreasing, the government eased restrictions to allow house visits during the *Eid-Hari Raya Puasa*, a festival which fell on the 24th of May 2020 a time of great celebration with families.

The participants were asked to share their experience of being in contact with a colleague who tested positive for COVID-19, two days before the *Eid* celebration. For the 22 HCWs who participated in this study this period coincided with the only day they were allowed to visit relatives.

Healthcare workers have been shown to experience significant levels of anxiety, depression and insomnia during the COVID-19 pandemic.[3] Medical and nursing staff were found to be more vulnerable to anxiety and depressive symptoms.[4] Using the DASS-21 questionnaire we found that specialists had normal anxiety, stress and depression scores. We know that different people react to critical situations differently, we believe experience contributes to their resilience. The other HCWs and the MOs were younger compared to the specialists. The difference in age and years of service may account for the different perceptions of the same experience. Some of the MOs stayed away from their families during the pandemic in contrast to the specialists. This isolation and loss of social support may have played a role in their higher DASS-21 scores. The MOs also faced prolonged work hours compared with the specialists.

The additional time apart during the *Eid* celebration would have added to the negative emotional impact. In this study the HCWs involved were from the same respiratory unit. While the majority of the HCWs in our study felt that they were able to perform adequate home quarantine, only half of them reported having access to single rooms and only two thirds reported having access to an attached bathroom. More than half of the HCWs reported staying with someone above the age of 65 or with children <5 years old. We are uncertain if the suitability of the home of the HCWs had been assessed by the management or occupational and safety health unit involved. This highlights the importance of investigating the ability to self-quarantine and to make available designated self-quarantine centres to those who need them.

Challenges faced by HCWs included increase workloads, frequent changing of personal protective equipments, and fear of contracting infection. The degree of contact with confirmed or suspected COVID-19 cases appears to be directly related to the extent of mental health disturbances.[5]

In our study worry of transmitting the infection to their family members were among the main concerns of HCWs. These findings are consistent with a cross-sectional study involving 1257 HCWs in 34 hospitals in China.[6] The least concern about contracting the COVID-19 among our HCWs can be explained by the fact that the majority of participants adhered to proper mask wearing and practised good hand hygiene. Another burden HCWs faced was social stigma and harassment as they are seen as a source of contagion.[7]

Hand hygiene and wearing of masks were not 100% adhered to in the cohort of our HCWs. Most healthcare-acquired infections can be prevented by appropriate PPE and good hand hygiene.[8] Alcohol-based hand rubs act by denaturing viruses protein and is one of the most effective procedure against COVID-19.[9,10] WHO advocates proper hand hygiene before and after examining a patient, before aseptic procedures, after body fluid exposure, and after touching surroundings of patient.[11] The reported compliance rates of hand hygiene in HCWs can be as low as 20%.[12]

The limitations of this study include a small sample size, lack of questions on social distancing measures at workplace and failure to explore application of safe distancing measures. In addition, we did not include specific questions asking about stigma and harassment about being identified as a close contact of COVID-19.

In conclusion, our study highlights that HCWs identified as contacts are vulnerable to depression, anxiety and stress. External support by family members are important. In addition, we found the perception of being able to quarantine to be inaccurate. There was a high level of concern from the HCWs of infecting their family members. Psychosocial support should be made available to all HCWs. Adequate assessment of the feasibility of home quarantine is also important.

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