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Research Article

Organizational Resilience, Psychological Safety and Teamwork Support Amongst Healthcare Worker's During the COVID 19 Pandemic in Saudi Arabia, 2020

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Abstract

Background: COVID -19 has a negative impact on families and overall communities. Several studies showed that mental health problems could occur in both healthcare workers and COVID-19 survivors during the COVID-19 epidemic. However, highlighting this issue may considered signaling for stakeholders and decision makers to establish mental support program that may lead to prevent and mitigate the psychological bad impact of COVID- 19 pandemic.

Objective of the Study: To assess the health care workers' perception and opinions about the psychological safety COVID-19 pandemic at the environment of their health organizations by using closed ended questions of psychological safety questionnaire.

Subjects and Methods: Through a cross-sectional design, the study had recruited 420 subjects who fulfill the inclusion and exclusion criteria during October and November of 2020. Data collection carried out by questionnaire designed and revised by an expert panel of health professionals. Population of current study approached through the electronic questionnaire by using Whats app, Facebook and Twitter, which are the most popular social media used by Saudi nation.

Results: Descriptive statistics showed that their mean age was 33.45 ± 7 years that ranged between 23 - 65 years. The great majorities of them (92%) were Saudi. Two-Third of them (67%) were female. Half of the participants were married, had more than 7 years of work experience and had bachelor degree. 74% of participants were from Ministry of Health and majority of them (70%) were staff nurses, public health specialists and physicians. Through the team wok level, 29% of participants had thoughts of resign, 23% of them expressed how difficult to ask for help from other team members and 28% of them expressed the same issue when seeking help and support from the team leader. Although 40% of participants had willingness to receive the psychosocial support if it was available but 76% of them don't know about the "Daem" service provided by the Saudi Commission for Health Specialties or the psychological support that provided internally at their workplaces.

Conclusion: Problem-solving strategies and psychological support during the pandemic enabling resilience of the health organizations from individual to organizational levels. Thus will lead the healthcare workers to trust their organization, to feel psychologically safe with maintaining the high qualified level of patient care.

Keywords: *Support; Health Care Workers; Psychological Safety; Organizational Resilience; COVID 19*

Abbreviations

HCW: Health Care Workers; MOH: Ministry of Health; COVID 19: Coronavirus Disease 2019

Introduction

COVID-19 identified as the cause of the respiratory disease outbreak that had first detected in Wuhan, China since December 2019 [1]. At the first quarter of 2020, The World Health Organization (WHO) declared this disease as global pandemic and therefore, it has become imperative for each country to take all necessary precautions and decisions to reduce the number of incidence cases and control the spread of COVID 19 [2]. Since the occurrence of the disease until today, there are many medical studies conducted in the medical field to build up the reference knowledge and scientific facts. These studies are mainly related to the transmission methods of COVID 19 [3,4], risk factors of hospitalization or severity of COVID 19 [5-7] and proper treatment protocols [8-10]. In addition to finding a suitable vaccines with cost effectiveness features without serious side effects.

Healthcare workers are the backbone of effective healthcare systems and they used to face burdens and hazards as they respond to the current COVID-19 pandemic [12]. In addition to the pathogen exposure, there are psychological distress, fatigue, long working hours, burnout, and physical and psychological violence [13,14]. The World Health Organization reported that one of every ten health care workers is infected with coronavirus (SARS 2) in some countries [15].

However, all employers need to establish national and international best practices to combat these burdens by early detecting the suspected cases of COVID 19, increasing access to personal protective equipment and implementing the psychological support to maintain a healthy work environment [1,12].

In Saudi Arabia, the online survey of The Patient Health Questionnaire (PHQ-9) and Generalized Anxiety Disorder-7 (GAD-7) showed that the prevalence of depression and anxiety among the general population was 9.4% and 7.3% respectively [16]. Another study in Saudi Arabia of 1,311 participants was carried out by using the Depression, Anxiety and Stress Scale - 21 Items (DASS-21) to measure the psychological impact of the COVID-19 pandemic. The results showed that 4.3% of participants had severe depression, 3.3% had severe anxiety, and 5.6% had severe stress [17]. The Peritraumatic Distress Index used in a cross-sectional study of 3036 participants to classify individuals in the sample as having normal, mild or severe distress levels. The distress levels are particularly high amongst the young, females, private sector employees and health workers, especially those working on the frontline [18].

The mental health status literature during the pandemic has reported the lack of reassurance, support, and acknowledgment from leaders of heath care worker [19]. Moreover, worker burnout from emotional distress has become a growing concern during the pandemic. Researchers concluded that maintaining the psychological well-being of the heath care workers would increase the team members' performance and empower them. Recently, promising initiative named (Daem initiative) [20] launched from Saudi Commission for Health Specialties that strive to build up psychologically safe environment and to reduce the negative psychosocial effects of the COVID 19 pandemic. The present study aimed to highlight how the psychological safety in the work environment mainly contributed to facilitate and sustain the culture of safety and organizational resilience despite the mounting pressures, threats and public health crisis like COVID 19 pandemic.

Materials and Methods

Rationale

There are considerable published medical researches that addressed the psychological impact of COVID-19 among the health care workers by using different scale system. It would be relevant to highlight how the psychological safety in the work environment mainly

contributed to the facilitation and sustainment of a culture of safety and organizational resilience driving performance outcomes of heath care workers despite mounting pressures, threats and public health crisis like COVID 19 pandemic. However, there is a limited of research in the health care workers' perception and opinions of the psychological support services at the work environment in terms of accessibility and availability among different health organizations in Saudi Arabia.

Objective

Primary objective

To assess the health care workers' perception and opinions about the psychological safety COVID-19 pandemic at the environment of their health organizations by using closed ended questions of psychological safety questionnaire.

Secondary objectives

- To assess the Depression, Anxiety and Stress level among health care workers by using the Depression, Anxiety and Stress Scale - 21 Items (DASS-21).
- To assess the association between the level of Depression, Anxiety and Stress among the heath care workers and their demographic characteristics.

Study design

The research design was cross sectional study.

Study setting

The study carried out in Saudi Arabia, the population of current study approached through the electronic questionnaire and by using Whats app, Facebook and Twitter, which are the most popular social media used by Saudi nation.

Population

The study recruited the health care workers who met the inclusion and exclusion criteria as the following: the inclusion criteria were

1. Health care workers who are actively practicing and working at all the health inistitues in Saudi Arabia.
2. Health care workers who are Saudi and non-Saudi nationality
3. Health care workers who are Male and Female staff.
4. Occupations of heath care workers who will included in the study are:
    - Physician staff with only Bachelor degree MD or MBBS
    - Physician (resident)
    - Board certified Physician
    - Dentist

- Nurse
- Respiratory therapist
- EMD
- Public health specialist
- Radiology Technician.
- Medical Technology
- Lab Technician
- Pharmacy
- Heath admin
- Patient services

5. Health care workers who are involved or not involved in the COVID 19 heath service will be included in the study.

On the other hand, the Exclusion criteria were as the following:

- Health care worker who are on practical or clinical educational rotation during the COVID 19 pandemic like internship.
- Health care worker who are outside Saudi Arabia.

Sample size and sampling

384 of health care providers from 400,000(21) the total number of the health care providers who meet the inclusion and exclusion criteria will be recruited in the present study at 5% margin of error and confidence level of 95%.

Through the snowballing sampling technique (non-probability) sampling, the study recruited the heath care workers who met the inclusion and exclusion criteria by using self-administered online questionnaire that used to apply the inclusion and exclusion criteria on the participants.

Operation definition

Health care worker: Healthcare workers include physicians, nurses, emergency medical personnel, dental professionals and students, medical and nursing students, laboratory technicians, pharmacists, hospital volunteers, and administrative staff [22].

Psychological safety: is a kind of safety awareness based on the psychological climate of certain events in organization, current scholars generally. It divided into three levels: individual, group, organizational psychological safety [23].

- Individual level of psychological safety (24) is a kind of feeling of confidence, safety and freedom detachment out fear and anxiety, in particular, it contains the feeling a person meet current and future needs.

- Group level of psychological safety (23) means:
  - Organizational members can speak one's mind freely and the organization encouraged and allowed risk-taking.
  - Organizational members trust and respect each other
  - Organization members have the same beliefs and opinions for things.
- Organizational level of psychological safety (25) is a formal and informal organization management practices and procedures, guide and support an open atmosphere and trustworthy in the work environment.

Data collection

Questionnaire

The questionnaire of this study is electronic, self-administered, and consisted of four sections as the following:

First section included the following information: (Age, gender, nationality, marital status, profession, level of education, the facility you work at, length of practice, type of work during COVID19 Pandemic).

Second section

Included closed end questions related to medical history of COVID 19 (How many times did you do the Swabbing, history of diagnosis with COVID 19, Losing member of the family or friends, source of infection if diagnosed with COVID 19).

Third section

Included An Arabic version of the Depression, Anxiety, and Stress Scale-21 (DASS-21) which is valid, reliable, granted to use (26, 27), and used to assess the mental health status in the last week. DASS- 21 is a self-assessment questionnaire consisting of 21 items concerning three subscales: depression, anxiety, and stress. Each subscale has seven items. The subscales assess depressive symptoms (e.g. life was meaningless), anxiety symptoms (e.g. finding it difficult to relax), and general stress symptoms (e.g. feeling rather touchy). Items are reported on a 4-point scale (0 = did not apply to me at all and 3 = applied to me most of the time). Higher scores signify severe psychological distress.

Fourth section

Included psychological safety questionnaire that consisted of closed ended questions (not on scoring system) designed to assess a respondent's opinion on psychological safety based on the three levels of psychological safety. To ensure the face and content validity, these questions were translated to Arabic then to English again and were revised by an expert panel of specialists in health quality, health informatics, community medicine, and mental health. It was tested for reliability by measuring its internal consistency. The Cronbach alpha coefficient was 0.72, indicating good reliability.

Worker level included

- Are you maintaining regular contact with friends and family?
- Do you feel that you are having excessive fear and worry about your own health and the health of your loved ones?

- Are you feeling sadness, anger, or frustration because friends or loved ones have unfounded fears of contracting the disease from contact with you because of your work?

Team work level

- Have you ever thought to resign from your job because the work team members at workplaces are not considering your psychological situation?
- Hard to ask other employees for help and support for whatever reason?
- Hard when seeking help and support from the manager (team leader) for whatever reason?
- If you make a mistake on this team, it is often held against you.

Organization level

- Do you know if your workplace provides internal psychological support as a service to the employees to overcome the psychological effects of the COVID 19 pandemic?
- Would you consider receiving psychosocial support if it was available?
- Did you have training courses before or during the Corona pandemic (Covid 19) related to stress management or psychological safety at work?
- Do you have an idea about the "Daem" service provided by the Saudi Commission for Health Specialties?

Study plan

1. Data collected for two months duration (October and November of 2020) and to minimize the face-to-face interaction and to comply with physical distancing restrictions, we developed a questionnaire with an electronic format that widely distributed to health care workers via social media (including, Facebook, Twitter, and what's app).
2. Data collection started after getting the permission from ethical and scientific committee.
3. Approval for data collection of required authorities and institutions obtained. In addition, the participants' privacy and confidentiality were assured, no identifiers collected, and all data, both hard and soft copies kept in a secure place within NGHA premises.

Data management and statistical analysis

For the Data entry and statistical analysis, SPSS 20.0 statistical software package used. Quality control performed at the stages of coding and data entry. Data presented using descriptive statistics in the form of frequencies and percentages for qualitative variables, and means and standard deviations, medians and inert-quartile range for quantitative variables. Chi-square test used to record the statistically significant between participants' answers and their demographic characteristics among the participants.

Results and Discussion

Results

Characteristics of the study subjects

According to the study design, 420 participants were included in the study; their mean age was 33.45 ± 7 years that ranged between 23-65 years. The great majorities of them (92%) were Saudi. Two-Third of them (67%) were female. Half of the participants were married, had more than 7 years of work experience and had bachelor degree (Table 1).

Demographic characteristics	Frequency	Percent (%)
Age		
Range	23-65 years	
Mode	32 years	
Mean ± SD	33.45 ± 7 years	
Gender		
Male	140	33
Female	280	67
Nationality		
Saudi	388	92
Non-Saudi	32	8
Marital Status		
Single	152	36.2
Married	244	58
Divorced, separated, or widowed	24	6
Years of experience		
0 - 4	152	36
5 - 7	66	16
More than 7	202	48
Level of education		
Diploma	84	20
Bachelor	252	60
Master	56	13
PhD	28	7

Table 1*: General characteristics of the Participants (n=420).*

Figure 1 indicates that 74% of participants were from Ministry of Health and majority of them (70%) were staff nurses, public health specialists and physicians.

HCWs and their health, experience and work history during COVID 19 pandemic

There were 33% of heath care workers who were not included with COVID 19 work and 60% of particpants were included in field work, contact clinics, heath adminstartion and statistic work (Figure 2).

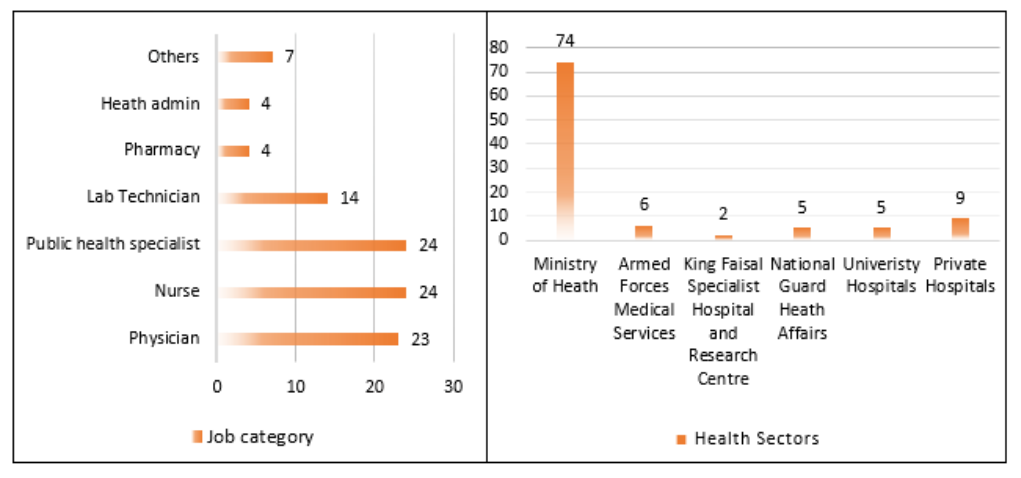

Figure 1: *Percentage of different job titles and heath sectors of the participants (n=420).*

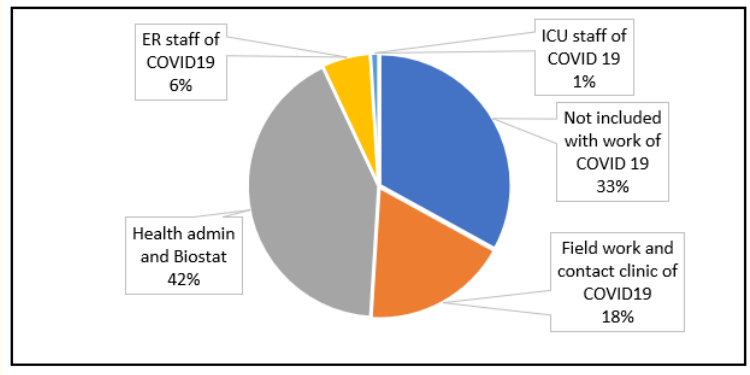

Figure 2: *Percentage of HCWs who were included in the COVID 19 teamwork.*

Figure 2 shows that the majority (67%) of participants had at least one nasopharyngeal swap. 16% of them were recovered from COVID 19 and 80% of the recovered cases expressed not knowing the source of infection. Almost one third of the participants lost their loved one because of COVID 19.

Psychological responses and levels of depression, anxiety and stress regarding COVID-19 among the HCWs

As shown in Figure 3 and 4, 8% of participants had severe depression, 5% had severe anxiety, and 8% had severe stress.On other hand, the results showed at least half of the particpants were within normal level of depression,anxiety and sress.

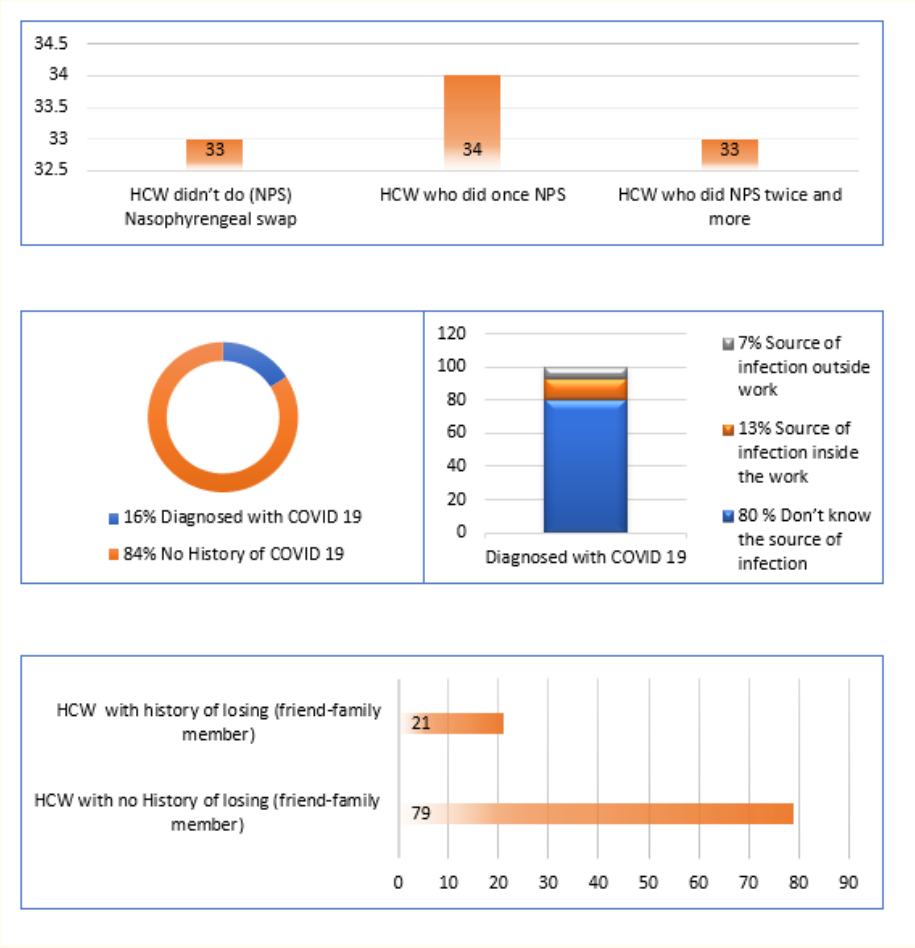

Figure 3: *HCWs and their health, experience and work history during COVID 19 pandemic.*

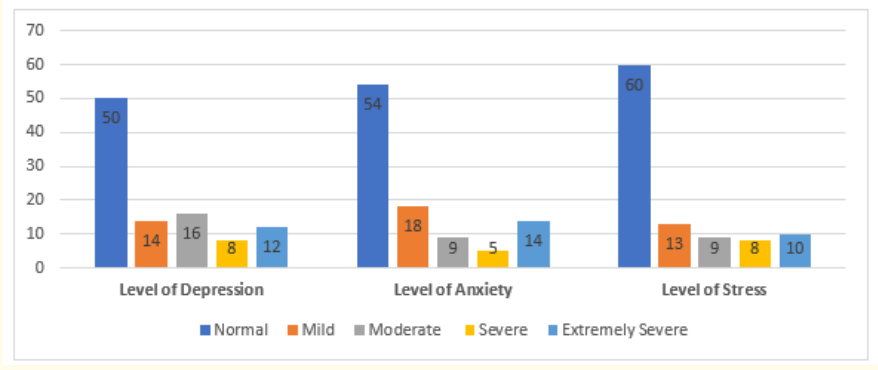

Figure 4: *Psychological responses regarding COVID-19 among the HCWs.*

According to the participants (Table 2), two third of them were maintaining regular contact with their friends and families with excessive fear and worry about their health and the health of the loved ones. Half of the particpants experienced the sadnes and anger when their families have unfounded fears of contracting the COVID 19 from contact with them because of the type work of HCW.

Participants' Perception	Yes	
	No.	%
Individual level		
○ Are you maintaining regular contact with friends and family?	290	69
○ Do you feel that you are having excessive fear and worry about your own health and the health of your loved ones?	282	67
○ Are you feeling sadness, anger, or frustration because friends or loved ones have unfounded fears of contracting the disease from contact with you because of your work?	198	47
Team work level		
○ Have you ever thought to resign from your job because the work team members at workplaces are not considering your psychological situation?	120	29
○ Hard to ask other employees for help and support for whatever reason?	98	23
○ Hard when seeking help and support from the manager (team leader) for whatever reason?	118	28
○ If you make a mistake on this team, it is often held against you.	128	30
Organization level		
○ Do you know if your workplace provides internal psychological support as a service to the employees to overcome the psychological effects of the COVID 19 pandemic?	100	24
○ Would you consider receiving psychosocial support if it was available?	174	41
○ Did you have training courses before or during the Corona pandemic (COVID 19) related to stress management or psychological safety at work?	76	18
○ Do you have an idea about the "Daem" service provided by the Saudi Commission for Health Specialties?	108	26

***Table 2**: Participants' Perception about the levels of psychological safety in their health organization (n=420).*

Through the team wok level, 29% of particpants had thoughs of resign, 23% of them expressed how diffucult to ask for help from other team members and 28% of them expressed the same issue when seeking help and support from the team leader.

Although 40% of partipants had wilingness to receive the psychosocial support if it was available but 76% of them don't know about the "Daem" service provided by the Saudi Commission for Health Specialties or the psychological support that provided internally at their workplaces to overcome the psychological effects of the COVID 19 pandemic. 18% of the participants have training courses before or during the COVID 19pandemic that related to stress management or psychological safety at work (Table 2).

Relation between participants' level of depression, anxiety and stress with their demographic characteristics

Table 3 illustrates that female HCWs had modreate and sever level of depression compared with male HCWs but no statistical significance. The saudi HCWs and single HCWs dpressed more than nonsaudi or married HCWs with P-value < 0.05 that indicates statistical significance. Majority of HCWs with years of experience less than four years had sever level of deoression compared with years of experi-

ence more than four years. HCWs who were not included in the COVID 19 work had low level of dression compred with the HCWs who recruited under the COVID 19 wrkplan (P-value < 0.05).

Demographic characteristics	Level of Depression			P value
	Mild	Moderate	Severe	
Gender				
Male	20	24	22	0.067
Female	38	44	60	
Nationality				
Saudi	54	66	82	0.004*
Non-Saudi	4	2	0	
Marital Status				
Single	16	24	42	0.005*
Married	38	40	34	
Divorced	4	4	6	
Years of experience				
0 - 4	14	26	38	0.06
5 - 7	10	12	10	
More than 7	34	30	34	
COVID 19 teamwork				
No participation	24	28	10	0.001*
Health Admin and Biostatic	30	26	48	
Field visit and contact clinic	4	12	14	
ICU staff	0	2	10	
ER staff	0	0	0	

Table 3: *Relation between participants' level of depression and their demographic characteristics.*
(*) Statistically significant at p<0.05.

Concering the relation with anxiety, level of anxiety was high among female HCWs, married HCWs, had years of experience more than 7 yaers (P-value < 0.05). Particpants who were included to be under the heath adminsatrstion and statistical analysis teams had high level of anxiey compared with HCWs who were not participated or their participation were uner other teams (Table 4).

Demographic characteristics	Level of Anxiety			P value
	Mild	Moderate	Severe	
Gender				
Male	18	20	16	0.001*
Female	56	20	62	
Nationality				
Saudi	68	36	78	0.087
Non-Saudi	6	4	0	
Marital Status				
Single	28	18	32	0.001*
Married	42	22	40	
Divorced	4	0	6	
Years of experience				
0 - 4	26	16	36	0.017*
5 - 7	18	6	4	
More than 7	30	18	38	
COVID 19 teamwork				
No participation	34	8	14	0.001*
Health Admin and Biostatic	30	26	40	
Field visit and contact clinic	6	6	18	
ICU staff	4	0	6	
ER staff	0	0	0	

Table 4: *Relation between participants' level of Anxiety and their demographic characteristics.*
(*) Statistically significant at p<0.05.

Table 5 shows the the staistical associations (P-value <0.05) between the high level of stress with Saudi HCWs, married and HCWs who were working under the team of field visit and contact clinic(patients and public exposure).

Demographic characteristics	Level of Stress			P value
	Mild	Moderate	Severe	
Gender				
Male	16	12	20	0.53
Female	38	28	54	
Nationality				
Saudi	52	40	74	0.002*
Non-Saudi	2	0	0	
Marital Status				
Single	22	18	34	0.001*
Married	30	18	36	
Divorced	2	4	4	
Years of experience				
0 - 4	26	16	36	0.136
5 - 7	18	6	4	
More than 7	30	18	38	
COVID 19 teamwork				
No participation	18	6	14	0.001*
Health Admin and Biostatic	2	0	0	
Field visit and contact clinic	28	22	40	
ICU staff	10	8	14	
ER staff	0	4	6	

Table 5: *Relation between participants' level of stress and their demographic characteristics.*
(*) Statistically significant at p<0.05.

Discussion

Since the pandemic started, there are many researchers were studying the impact of psychological impact of COVID 19 among health care workers that should in turn activate the evaluative studies of the provided mental support to them. The present study involved HCWs from different heath organizations in Saudi Arabia in order to assess their perception and opinions about the psychological safety during COVID-19 pandemic by utilizing the internet surveys to minimize the face-to-face interaction and to comply with physical distancing restrictions of COVID 19. Snowball sampling technique was the only viable choice of sampling strategy to achieve the objectives of the research and used because there is no other way of accessing the sample.

Health workers used to be in the form of medical teams that need psychological safety to be effective. Psychological safety plays a role in wellbeing by creating an environment in which conflict can be resolved. Based on the participants' responses, two third of them

were with excessive fear and worry about their health and the health of the loved ones and almost half of the participants experienced the sadness and anger when their families have unfounded fears of contracting the COVID 19 from contact with them because of the type work of HCW. In congruence with this, 95.7% of HCWs agreeing that they should limit their social activities due to Covid-19 and 16.5% not feeling satisfied of telling their family if they get infected; these results were shown in the Saudi cross sectional study that carried out among National Guards hospitals [28].

Concerning the psychological safety of HCWs at level of team member, third of participants had thought to resign from their jobs, this might be attributed to the bad or difficult communication with other team member or team leader while the majority of participants got support from their team leaders and team members and they have no plan to resign. Recommendations set up from an Italian study [29] based on the Italian COVID-19 experience encourage removing the stigma associated with help-seeking by establishing infrastructure and readily available opportunities for peer support during and post-crisis. However, processes for supporting team development should be embedded in general healthcare practice.

The role of the organizational support in psychological safety of HCWs is crucial to develop solutions to unexpected problems, thereby enabling patient care to be delivered safely despite obstacles. The present study showed that 40% of partisans had willingness to receive the psychosocial support if it was available and about two third of them don't know about the psychological support that provided internally at their workplaces to overcome the psychological effects of the COVID 19 pandemic. Low level of awareness about the availability of psychological support is may explained by the busy time with the giving daily critical duties of HCWs with COVID 19 patients and contacts, in addition to the weak announcements and communication inside the different health organization with HCWs. Process of mitigation the psychological distress among HCWs includes foresight, coping and recovery elements; results of the present study highlight the important of the coping strategy in decreasing the level of psychological burden. A recent systematic review and meta-analysis addressed the prevention strategy that include adequate breaks, greater experience, positive feedback, confidence in infection control measures, and adequate protective gear were all shown to decrease the risk of psychological stress [30].

Lastly, the current study set a secondary objective of assessing the Depression, Anxiety and Stress level among health care workers. The findings showed that half of the participants screened positive for depression, 46% for anxiety, and 40% for stress with different severities ranging from mild to extremely severe. The results go in line with the outcome with published literature in Saudi Arabia [31,32] or Spain [33] and higher than Singapore study [13].

In the present study, participants' levels of depression, anxiety and stress had demonstrated the significant associations with their demographic characteristics, mainly female, married and years of experience. This is come in line with previous studies [18,31,32] that identified the most risky groups for psychological consequences of COVID 19.

Concerning the limitation of the present study, our survey was based on self-reported information which might suffer from a recall bias, in addition to not stratified the HCWs based on their health organization and most of the participants were HCWs in tertiary hospitals, all of that could limit the generalizability of the findings. Despite these limitations, our study addresses a psychological safety as mandatory requirement for the health care workers and patient safety.

Conclusion

Psychological burden of public health crisis among health care workers is alarming and stakeholders and decision makers are advised to provide continuous monitoring of the psychological consequences during this pandemic, and provide mental support. When HCWs trust that their organization prioritizes their well-being, they feel psychologically safe and empowered to speak up about safety concerns, which enables patient safety to improve in everyday clinical practice. Problem-solving strategies and psychological support during the pandemic enabling resilience of the health organizations from individual to organizational levels.

Conflict of Interest

There is no financial interest or any conflict of interest exists.

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Volume 10 Issue 1 January 2021