

COVID-19 Stigma Correlates with Burnout among Healthcare Workers: Evidence from Healthcare Workers Practicing in Saudi Arabia

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Keywords

COVID-19 · Stigma · Burnout · Healthcare workers · Saudi Arabia

Abstract

Introduction: COVID-19-related stigma is the level of stigma associated with being involved with the pandemic. It has been reported that a significant number of healthcare workers experienced anxiety, depression, stigmatization, physical violence, harassment during the COVID-19 pandemic; even the families of the healthcare workers were victims of discrimination and stigmatization. The aim of our study was to determine the prevalence of COVID-19-related stigma among the healthcare workers in Saudi Arabia and to assess the COVID-19-related stigma, its associated factors, and burnout correlate. **Methods:** Web-based, self-administered questionnaire has been sent to healthcare workers' official emails through the internal communication department in the targeted hospitals. It includes the COVID-19-related stigma-validated scale "E16-COVID19-S" and two questions relative to the full Maslach Burnout Inventory assessing the burnout. The required sample is 377 based on the sample size calculation with a response rate of 50%. **Results:** A total

of 407 responses were received from the targeted population. Of them, 49.4% scored high on the COVID-19-related stigma scale. The correlation between the COVID-19-related stigma and burnout was found to be moderately positive and statistically significant ($r_s = 0.515$, $p = <0.001$). **Conclusion:** It has been found that gender, workplace capacity, ever taking COVID-19 test during the pandemic had a significant impact on scoring high on the COVID-19-related stigma scale. Moreover, there is a correlation between being stigmatized during the pandemic and being burned out.

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Introduction

COVID-19 is a viral infection caused by the SARS-CoV-2, one of the coronaviruses known for causing severe acute respiratory syndrome [1–4]. On March 11, 2020, the WHO announced that COVID-19 is a global pandemic [2, 3, 5–7]. Based on COVID-19 report by World Health Organization and Saudi Arabia Ministry of Health Dashboard, globally, as of February 2022, there have been more than 388 million confirmed cases of the disease including more than 5 million deaths. Nationally,

there have been 699,000 confirmed cases including more than 8,000 deaths [8, 9].

COVID-19-related stigma is the level of stigma associated with being involved with the pandemic. For instance, it has been documented that healthcare workers (HCWs) have been labelled, avoided, and discriminated against based on their characteristics of pandemic involvement [10–12]. Multiple studies have discussed the COVID-19-related psychological and mental distress issues among the HCWs [13, 14]. It has been reported that a significant number of HCWs experienced anxiety, depression, stigmatization, physical violence, harassment during the COVID-19 pandemic [15, 16]. Surprisingly, existing evidence reported that even the families of the HCWs were victims of discrimination and stigmatization [10].

The panic over the pandemic has negatively affected the global population behaviours and attitudes [16]. For instance, in Egypt and Nigeria, studies exploring the COVID-19-related stigma among the HCWs revealed that a considerable proportion of physicians and frontliners experienced a COVID-19-related stigma [17, 18]. In Nepal, a significant number of HCWs experienced some sort of depression and anxiety during the pandemic [15]. In Hail region of Saudi Arabia, nurses caring for COVID-19 patients reported being stigmatized and labelled as “COVID nurses” [19].

It is important that healthcare institutions pay close attention to the mental health status of their HCWs because mental health status directly affects the productivity. Attempts to explore how prevalent the COVID-19 stigma is and the factors associated with being psychologically unwell are crucial so that suitable interventions can be planned early enough. The aim of our study was to determine the prevalence of COVID-19-related stigma among the HCWs in Saudi Arabia.

Materials and Methods

This study has been approved by the Institutional Review [committee name withheld for review]. Study approval number and date withheld for review.

Survey

Web-based, self-administered questionnaire has been sent to official emails of HCWs through the internal communication department in the targeted hospitals. Section 1 collected personal and occupational data: age, gender, marital status, qualification, workplace, provision of direct care to COVID-19 patients, and ever took COVID-19 test during the pandemic. Section 2 assessed the stigma using the 16-item COVID-19 stigma scale “E16-COVID19-S.” It is a newly designed scale adapted from a scale originally developed

to measure HIV-related stigma [20]. The E16-COVID19-S consisted of 16 items (E16-COVID19-S) that supported a three-factor structure: personalized stigma (8 items); concerns of disclosure and public attitudes (5 items); and negative experiences (3 items). The four-point Likert scale responses are “strongly disagree,” “disagree,” “agree,” and “strongly agree,” scoring 1–4, respectively. The total or overall COVID-19-related stigma score was calculated as the sum of the scores of its 16 items, ranging from 16 to 64, with a higher score indicating a higher level of stigma. In regards to the burnout assessment, the current standard for burnout assessment is the Maslach Burnout Inventory (MBI), a well-validated instrument consisting of 22 items answered on a 7-point Likert scale. However, because of MBI length that limits its application, we have measured the burnout using single questions suggested and validated to be a useful burnout scale [21], measuring the emotional exhaustion (“I feel burned out from my work”) and depersonalization (“I have become more callous toward people since I took this job”) domains of burnout.

Statistical Analysis and Sample Size

The required sample size was calculated using the Raosoft website (http://www.raosoft.com/sample_size.html; 5% margin of error and 95% CI) based on the number of HCWs practicing in Saudi Arabia. Based on these calculations, a sufficient sample size was found to be 377 participants of total HCWs, with a response rate of 50%.

Data were processed using the SPSS Statistics for Windows, version 25 (IBM Corp., Armonk, NY, USA). Descriptive statistics were used to describe all the variables. χ^2 was utilized to measure the association between the stigma prevalence of independent variables and dependent variables (total stigma score) recoded into high and low (based on the median as cutoff = 24); those who scored below 24 were categorized as low stigma group, and those who scored 24 and above were categorized as high stigma group. Correlations between stigma and burnout were assessed using Spearman’s correlation. Binary logistic regression was utilized to identify factors associated with the COVID-19-related stigma prevalence. *p* value <0.05 was considered statistically significant. Odds ratio (OR) and 95% confidence interval (CI) were reported as the measures of association.

Results

Study Sample Characteristics

A total of 407 responses were received from the targeted population, representing more than 50% response rate. Table 1 presents the characteristics of the respondents. The majority of the respondents were within the 35–44 age group (40%) and the 24–34 age group (37.6%). Of the respondents, 59.7% were female, 61.9% were married, 63.1% were holding bachelor degree, 76.6% were working in public hospitals, 89.9% were involved directly in the care of COVID-19 patients, and 78.6% had taken COVID-19 test during the pandemic.

Table 1. Background characteristics and total COVID-19-related stigma prevalence among a sample of HCWs, Jeddah, 2022 ($n = 407$)

	Characteristics of COVID-19-related stigma prevalence						statistics ^a	p value ^b
	all		high		low			
	n	%	n	%	n	%		
Age								
24–34 years	153	37.6	82	53.6	71	46.4	5.92	0.115
35–44 years	164	40.3	74	45.1	90	54.9		
45–54 years	66	16.2	29	43.9	37	56.1		
+55 years	24	5.9	16	66.7	8	33.3		
Gender								
Male	164	40.3	65	39.6	99	60.4	10.45	<0.001
Female	243	59.7	136	56.0	27	44.0		
Marital status								
Married	252	61.9	128	50.8	124	49.2	0.525	0.469
Unmarried	155	38.1	73	47.1	82	52.9		
Qualification								
PhD	20	4.9	10	50.0	10	50.0	1.10	0.776
Masters	62	15.2	33	53.2	29	46.8		
Bachelor	257	63.1	123	47.9	134	52.1		
Diploma	65	16.0	35	53.8	30	46.2		
Took COVID-19 test								
Yes	320	78.6	172	53.8	148	46.3	11.40	<0.001
No	87	21.4	29	33.3	58	66.7		
Workplace								
Public hospital	312	76.6	140	44.9	172	55.1	15.65*	0.005*
University hospital	13	3.2	8	61.5	5	38.5		
Private hospital/clinic	19	4.7	9	47.4	10	52.6		
Primary healthcare	52	12.8	38	73.1	14	26.9		
Field hospital ^c	2	0.5	1	50.0	1	50.0		
Quarantine facilities ^d	9	2.2	5	55.6	4	44.4		
Worked directly with COVID-19 patients								
Yes	366	89.9	175	47.8	191	52.2	3.59	0.058
No	41	10.1	26	63.4	15	36.6		
Stigma prevalence								
High	201	49.4	–	–	–	–	–	–
Low	206	50.6	–	–	–	–	–	–

^a χ^2 statistic for χ^2 test. ^b Bold number p values <0.05 indicate statistically significant differences between participants who were scored high or low in the “E16-COVID19-S” based on the cutoff. ^c Field hospitals got established during the COVID-19 pandemic which receive COVID-19 confirmed patients needing medical attention. ^d Quarantine facility hotels selected during the COVID-19 pandemic which receive COVID-19-confirmed patients needing isolation with minimal medical attention. * Fisher’s exact for groups with less than 5 participants.

COVID-19-Related Stigma Prevalence

COVID-19-related stigma prevalence is illustrated in Table 1. It has been found that the COVID-19-related stigma score was high and prevalent among the female (56%) HCWs, respondents within the age of 55 years and above (66.7%), and those who reported to be married (50.8%). In addition, respondents who reported to ever taking COVID-19 test during the pandemic (53.8%) scored high when compared to their counterpart. Also,

those who reported not to be directly involved in the care of COVID-19 patients (63.4%) scored high when compared to their counterpart.

Stigma and Burnout Correlate

Table 2 presents the COVID-19 stigma scale “E16-COVID19-S” and subscale scores among a sample of HCWs and their correlation with emotional exhaustion (“I feel burned out from my work”) and depersonaliza-

Table 2. Total COVID-19 stigma scale “E16-COVID-19-S” and subscale scores among a sample of HCWs and their correlation with burnout, Jeddah, 2022 ($n = 407$)

COVID-19 stigma scale “E16-COVID-19-S”	Items	Max score	Median \pm SD	Burnout score	
				statistics ^a	p value ^b
Subscale 1					
Personalized stigma	8	32	14.00 \pm 6.25	0.512	<0.001
Subscale 2					
Concerns of disclosure	5	20	7.00 \pm 3.28	0.469	<0.001
Subscale 3					
Negative experience	3	12	3.00 \pm 1.90	0.436	<0.001
Total stigma score					
Total	16	64	24.00 \pm 10.76	0.515	<0.001

^a Statistics for Spearman’s. ^b Bold number p values <0.05 indicate statistically significant correlations between stigma and burnout.

tion, two items from the MBI to assess burnout. The correlation between the COVID-19-related stigma and burnout is $r_s = 0.515$, $p < 0.001$. Moreover, there has been a correlation between burnout and personalized stigma ($r_s = 0.512$, $p < 0.001$); burnout and concerns of disclosure ($r_s = 0.469$, $p < 0.001$); burnout and negative experience ($r_s = 0.436$, $p < 0.001$).

Association with COVID-19-Related Stigma Prevalence

In order to examine the relationship between scoring high or low on the COVID-19-related stigma scale and the categorical variables, χ^2 independence test got utilized. χ^2 test revealed no evidence of association among number of factors on scoring high or low on COVID-19-related stigma scale. For instance, age ($\chi^2 = 5.92$, $p = 0.115$); marital status ($\chi^2 = 0.525$, $p = 0.469$); qualifications ($\chi^2 = 1.10$, $p = 0.776$); worked directly with COVID-19 patients ($\chi^2 = 3.59$, $p = 0.058$) are all factors that lack the evidence of association on scoring high on stigma scale. However, it has been found that gender was associated with scoring high on the stigma scale ($\chi^2 = 10.45$, $p = <0.001$). Moreover, ever tested for COVID-19 infection has been found to be associated with scoring high on the stigma scale ($\chi^2 = 11.40$, $p = <0.001$). In regards to the workplace impact on scoring high on stigma scale, Fisher’s exact test was used to determine if there was a significant association between the two variables. There was a statistically significant association between the variables (two-tailed $p = 0.005$).

Based on the model of multiple logistic regression, a number of factors were found to be associated with the HCWs being categorized as having COVID-19-related stigma. Table 3 presents the factors associated with the COVID-19-related stigma scale. The probability of scoring high on stigma scale was observed to increase by OR: 2.01; 95% CI: 1.31–3.09 among the female HCWs, given the other variables in the model are held constant. The probability of scoring high on stigma scale was observed to increase by OR: 2.50; 95% CI: 1.00–6.21 among above 55 years age group, given the other variables in the model are held constant. For the HCWs who stated to work in hospitals with more than 500 beds compared to those who work in hospitals with less than 500 beds, the probability of scoring high on stigma scale was observed to increase by OR: 3.01; 95% CI: 1.59–5.68, given the other variables in the model are held constant. The probability of scoring high on stigma scale was observed to decrease by OR: 0.453; 95% CI: 0.26–0.76 among the HCWs who reported to ever test for COVID-19 infection during the pandemic, given the other variables in the model are held constant. Moreover, if the total burnout score assessed using the two questions from the MBI increases by one, the probability of scoring high on stigma scale was observed to increase by a factor of OR: 1.28; 95% CI: 1.20–1.36, given the other variables in the model are held constant. The model of predicting HCWs who will score high on stigma scale based on their education level ($p = 0.947$), marital status ($p = 0.497$), or working directly with COVID-19-infected patients ($p = 0.130$) was found to be not statistically significant.

Table 3. Factors associated with E16-COVID19-S

Factors	Association with COVID-19-related stigma prevalence				
	<i>n</i>	%	OR ^a	[95% CI]	<i>p</i> value
Gender					
Male	164	40.3	1.00	[Reference]	0.001
Female	243	59.7	2.01	[1.31–3.09]	
Age group					
Under the age of 55 years	383	94.1	1.00	[Reference]	0.048
+55 years	24	5.9	2.50	[1.00–6.21]	
Education level					
Higher education	341	83.8	1.00	[Reference]	0.947
Diploma	66	16.2	1.02	[0.56–1.83]	
Marital status					
Married	252	61.9	1.00	[Reference]	0.497
Unmarried	155	38.1	1.16	[0.75–1.79]	
Workplace					
+500 beds COVID-19 facility	344	84.5	3.01	[1.59–5.68]	0.001
Under 500 beds COVID-19 facility	63	15.5	1.00	[Reference]	
Worked directly with COVID-19 patients					
No	41	10.1	1.00	[Reference]	0.130
Yes	366	89.9	1.74	[0.84–3.59]	
Took COVID test					
No	87	21.4	1.00	[Reference]	0.003
Yes	320	78.6	0.453	[0.26–0.76]	
Burnout score	–	–	1.28	[1.20–1.36]	<0.001

^aSimple binary logistic regression was fitted. Odds ratios (OR) are reported.

Discussion

Due to the fear of SARS-CoV-2 infection transmission through the HCWs, it has been found that those who worked in hospitals affected by COVID-19 faced stigmatization and avoidance by people in their communities [10]. In our sample of HCWs practicing in Saudi Arabia, our findings indicated that a large number of respondents experienced COVID-19-related stigma. Gender, age, workplace capacity, ever tested for COVID-19 infection, and feeling of burnout are factors found to be associated with the COVID-19-related stigma scale.

The disease related stigmatization is a global public health issue that is not directed only to HCWs but also against the diagnosed individuals and their families [22, 23]. It has been researched previously in link to chronic diseases [23, 24] and coronavirus infection [25, 26]. In our study, nearly half of the HCWs who responded to our survey scored high on the COVID-19-related stigma scale (E16-COVID19-S). Our results are in agreement with previous studies investigated COVID-19-related stigma using different methods of assessment [11, 19, 27].

In current study, age, marital status, qualifications, and working directly with COVID-19 patients are all factors that lack the evidence of association on scoring high on stigma scale. However, being female has been found to be significantly associated with scoring high on the COVID-19-related stigma scale. In the same token, previous studies investigated the role of gender on the stress level of HCWs involved in the care of COVID-19 patients revealed females to be significantly affected by distress, anxiety, and depression related to the pandemic [28–31]. Moreover, a study to investigate the psychological impact of COVID-19 outbreak in Wuhan revealed that women with children are more likely to experience avoidance by family and friends [32].

Further, workplace capacity assumed by the number of beds was significantly associated with scoring high on the stigma scale. Similarly, previous studies reported that direct contact and duration of contact to COVID-19-confirmed patients increased the workers' psychological burden [17, 33–35]. HCWs practicing in big hospitals with a large number of patients are under great pressure and demand, affecting the mental health of HCWs.

Moreover, it has been confirmed that ever taking COVID-19 test during the pandemic had a statistically significant impact on the COVID-19-related stigma score. The increased fear of being a source of infection to the beloved ones impacted the status of COVID-19 testing in HCWs.

Assessing the impact of COVID-19 stigma on performance of HCWs cannot be emphasized enough. Our study confirmed a positive correlation between scoring high on stigma scale and feeling burned out. A study confirmed the impact of stigma on fatigue, burnout, and job satisfaction [36]. In the same context, another study including HCWs confirmed the relationship between being mentally exhausted and employees' choice to leave their job [37]. Burnout not only affects the individual HCW but also has negative reflections on the organization's performance, the quality of care provided to patients, and the healthcare system as a whole. Although it is hard to determine a causal relationship, burnout has been linked to increased patient safety incidents [38]. Moreover, burnout has important implications on the counterproductive work behaviour [39]. This is usually associated with economic losses as a result of intentional behaviour displayed by the workers including absenteeism [40].

Conclusion

It has been found that gender, workplace capacity, ever taking COVID-19 test during the pandemic had a significant impact on scoring high on the COVID-19-related stigma scale. Moreover, there is a correlation between being stigmatized during the pandemic and feeling burned out.

Healthcare facilities must be equipped with staff supportive system, and HCWs must be encouraged to utilize the hospital resources. Measures must be taken to enhance the working environment. Also, improve the access to effective and ongoing training programs to support and guide the HCWs during such events.

It is important that healthcare institutions pay close attention to the mental health status of their HCWs. Attempts to explore the factors associated with being psychologically unwell are crucial so that suitable interventions can be planned early enough to avoid the negative reflections mentioned. Engaging the healthcare providers in decision-making and in the planning of strategies to tackle occupational stress may help in understanding the challenges that affected their well-being. It is crucial to recognize how the healthcare providers react to job stress-

ors to avoid the impact of this problem on the scarcity of healthcare workforce. Health policymakers should adopt evidence-based approaches to be effective in preventing potential occupational stress. Future pandemics are inevitable; policymakers must learn their lesson and intervene early enough to promote a healthy workplace and prevent burnout among healthcare providers.

Limitations

Our study has several limitations. Firstly, the findings of our study applied only to HCWs and cannot be generalized to the whole population. Secondly, we had to use a newly designed scale adapted from a scale originally developed to measure HIV-related stigma. Although this tool got validated by a number of studies, more studies are needed to confirm the validity of the scale to assess the COVID-19-related stigma. The comparison of our findings with those of other studies was very challenging since studies assessing COVID-19-related stigma and burnout are yet to be available. Finally, the low response rate of 50% is expected and associated with studies targeting HCWs and using questionnaires. Further studies are required to address our limitations and improve our knowledge in the area of COVID-19, mental health, and their impact on the quality of life of HCWs.

Despite the study limitations, to the best of our knowledge, this is the first study in Saudi Arabia to determine the prevalence of COVID-19-related stigma among the HCWs using the "E16-COVID19-S" and to correlate it with the feeling of burnout in HCWs. This study confirmed the existence of COVID-19 stigma among the HCWs practicing in Saudi Arabia and its correlation with burnout.

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Statement of Ethics

This study protocol was reviewed and approved. The study has been granted an exemption from requiring written informed consent since it is a web-based questionnaire. The need for written informed consent was waived by the Institutional Review Board holding the national registration number with NCBE-KACST, KSA: (H-02-J-002) based at Jeddah Health Affairs. IRB Log No (A01330) February 03, 2022. Those who responded to the questionnaire were assumed to be agreeing to take part in the study.

Conflict of Interest Statement

The authors have no conflict of interest to declare.

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Author Contributions

Omar S. Alnahdi, Faisal A. Albuqaytah, Najla Alotaibi, Marwah A. Afeef, Zuhair S. Natto, and Razin H. Subahi conceived and planned the study and carried out the study in their workplace. Omar S. Alnahdi, Faisal A. Albuqaytah, Najla Alotaibi, and Mar-

wah A. Afeef contributed to the study literature review. Najla Alotaibi, Marwah A. Afeef, and Zuhair S. Natto contributed to the data analysis and interpretation of the results. Marwah A. Afeef and Zuhair S. Natto took the lead in writing the manuscript. All authors provided critical feedback and helped shape the research, analysis, and the manuscript. I certify that we have participated sufficiently in the intellectual content, conception, and design of this work.

Data availability statement

All data generated or analysed during this study are included in this article. Further enquiries can be directed to the corresponding author.

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