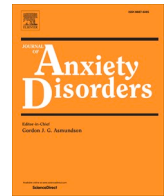




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Fear and avoidance of healthcare workers: An important, under-recognized form of stigmatization during the COVID-19 pandemic

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ABSTRACT

Background: During past disease outbreaks, healthcare workers (HCWs) have been stigmatized (e.g., shunned, ostracized) by members in their community, for fear that HCWs are sources of infection. There has been no systematic evaluation of HCW stigmatization during the COVID-19 pandemic.

Methods: Non-HCW adults from the United States and Canada (N = 3551) completed an online survey, including measures of HCW stigmatization, COVID Stress Syndrome, and avoidance.

Results: Over a quarter of respondents believed that HCWs should have severe restrictions placed on their freedoms, such as being kept in isolation from their communities and their families. Over a third of respondents avoided HCWs for fear of infection. Participation in altruistic support of HCWs (i.e., evening clapping and cheering) was unrelated to stigmatizing attitudes. Demographic variables had small or trivial correlations with HCW stigmatization. People who stigmatized HCWs also tended to avoid other people, avoid drug stores and supermarkets, and avoid leaving their homes. Factor analysis suggested that HCW stigmatization is linked to the COVID Stress Syndrome.

Conclusion: Fear and avoidance of HCWs is a widespread, under-recognized problem during the COVID-19 pandemic. It is associated with the COVID Stress Syndrome and might be reduced by interventions targeting this syndrome.

1. Introduction

Being the target of stigmatization is stressful (Goffman, 1963). During widespread outbreaks of infectious disease, healthcare workers (HCWs) are often stigmatized by people in their communities; that is, HCWs have been feared, avoided, shunned, or ostracized due to public fear that HCWs are sources of infection (Bagcchi, 2020; Taylor, 2019). To illustrate, during the 2003 outbreak of Severe Acute Respiratory Syndrome (SARS), in studies conducted in Taiwan and Hong Kong, 20–49 % of HCWs involved in the care of SARS patients reported being shunned, avoided, or otherwise stigmatized by people in their community, for fear that HCWs were infected with the SARS coronavirus (Bai et al., 2004; Koh et al., 2005). Even the families of HCWs were subject to such discrimination (Bai et al., 2004). Stigmatization adds an unnecessary burden to the lives of HCWs and can contribute to worker burnout (Lai et al., 2020; Ramaci, Barattucci, Ledda, & Rapisarda, 2020).

During the COVID-19 pandemic, HCWs have been widely praised as

heroes in the popular media and by government leaders. Across the globe, it has become an evening ritual for people to publicly applaud HCWs. Does this mean that, unlike SARS, HCW stigmatization is not a problem during the COVID-19 pandemic? Cheering from the safety of one's balcony does not preclude the possibility of discriminatory attitudes toward HCWs, based on fears that these workers are carriers of SARSCoV2. To our knowledge, this issue has not been investigated in any systematic way.

The purpose of the present study was to investigate the prevalence and correlates of HCW stigmatization during the COVID-19 pandemic in a large sample of adults from the United States and Canada. We sought to assess the prevalence of stigma-related beliefs that HCWs are sources of infection with SARSCoV2, and identify the correlates of such attitudes, particularly the question of whether HCW-related stigmatizing attitudes are associated with the COVID Stress Syndrome. Recent research provides evidence of this syndrome (Taylor et al., 2020a, b). The core of the syndrome consists of (a) fears that COVID-19 is highly

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Table 1
Responses to the Healthcare Worker Stigmatization Survey (% endorsement).

	Strongly disagree	Disagree	Undecided	Agree	Strongly agree	Sum of agree or strongly agree
Healthcare workers who work in hospitals are likely to have COVID-19	6	26	36	26	6	32
For the safety of the community, healthcare workers should not go out in public	14	34	27	19	6	25
Healthcare workers should have some restrictions on their freedom	20	29	26	21	5	26
Healthcare workers who treat people with COVID-19 should be isolated	14	22	29	26	10	36
I do not want to be around healthcare workers who treat COVID-19 patients	11	19	24	33	14	47
I do not want to be around someone who works in a healthcare setting	15	28	25	24	9	33
Healthcare workers who treat people with COVID-19 should be separated from their families	17	21	32	23	8	31
I would not be comfortable visiting a healthcare worker for medical reasons because I would be worried I might get COVID-19	15	25	26	24	10	34

dangerous, combined with fears about coming into contact with fomites (surfaces or objects potentially contaminated with SARS-CoV-2), (b) fears about the personal socio-economic impact of COVID-19, and (c) xenophobic fears that foreigners are sources of infection. These fears are intercorrelated with one another and associated with COVID-related checking and reassurance-seeking, as well as COVID-related intrusive thoughts and nightmares (Taylor et al., 2020a, b).

Given that strongly-held fears about COVID-19 are at the core of the COVID Stress Syndrome, we expected that HCW-related stigmatizing attitudes (e.g., beliefs that HCWs are sources of COVID-19) would be strongly correlated with the COVID Stress Syndrome. If this is the case then it is also predicted that HCW-related stigmatizing attitudes, which involve fear and avoidance of HCWs, would be associated with other forms of avoidance during the COVID-19 pandemic, such as the avoidance of leaving the safety of one's home, avoidance of other people, and avoidance of essential stores such as supermarkets and drug stores because infected people might be at these stores.

We were further interested in the question of whether the nightly applauding of HCWs has any meaningful relationship to HCW stigma. Can stigmatization be reduced by encouraging people to applaud HCWs? If so, then the two should be negatively correlated. Alternatively, there might be no meaningful relationship between the two; people might applaud HCWs from the safety of their homes, while simultaneously fearing that HCWs are sources of infection and therefore having negative (e.g., shunning, avoidance) attitudes about HCWs.

2. Method

2.1. Sample and data collection procedures

Data were collected during May 6–19, 2020, from a random sample of adults from the United States and Canada. HCWs were excluded from the sample for the purpose of this study, resulting in 3551 non-HCW adults (1716 from the U.S., and 1835 from Canada). Data were collected using an internet-based self-report survey delivered in English by Qualtrics, a commercial survey sampling and administration company. All respondents provided written informed consent. Sample mean age was 54 years ($SD = 15$ years). A total of 42 % were female, most (92 %) were employed full- or part-time, and most (82 %) had completed full or partial college education. Most (69 %) were Caucasian, with the

remainder being Asian (12 %), African American/Black (9%), Latino/Hispanic (6%), or other (4%). A total of 43 % reported having a pre-existing (i.e., pre-COVID-19) medical condition, and 16 % reported having a current (past year) mental health condition. Only 2% of the sample reported that they had been diagnosed with COVID-19.

2.2. Measures

Demographic and background variables were measured and coded as follows: Female sex (1 = yes, 0 = no), age (years), ethnic minority status (1 = yes, 0 = no), unemployed (1 = yes, 0 = no), full or partial college education (1 = yes, 0 = no), current (past year) mental health condition (1 = yes, 0 = no), pre-existing medical condition (1 = yes, 0 = no), and country (United States = 1, Canada = 0). Participants also completed the HCW Stigmatization Survey, which is an 8-item face-valid scale, developed for the purpose of the present study, measuring stigmatizing attitudes towards HCWs during COVID-19. The items, which are listed in Table 1, were rated on a 5-point scale (0=strongly disagree, 4=strongly agree). The items were unifactorial (as per Maximum Likelihood factor analysis plus parallel analysis), strongly correlated with one another (corrected item-total r s ranged from .48 to .78), and the reliability (internal consistency) was excellent; McDonald's $\omega = .93$. McDonald's ω was used instead of Cronbach's α because the former is a more accurate measure of reliability (McNeish, 2018). Values of ω are interpreted in the same way as α ; that is, values in the range of .70–.80 indicate acceptable reliability, .80–.90 are good, and values greater than .90 are excellent.

COVID Stress Syndrome was assessed by the five COVID Stress Scales (see Table 3), which have very good reliability and validity (Taylor et al., 2020a). Avoidance of essential stores (i.e., supermarkets and drug stores) was assessed by two items, in which participants rated the extent of their avoidance of these stores during the past seven days on a 5-point scale (0=never, 4=almost always). Reliability of this scale was excellent ($\omega = .95$). The preference for avoiding people and for staying at home was assessed by two scales from the Hikikomori Questionnaire (Teo et al., 2018). Items for those scales were rated on a 5-point scale (0=strongly disagree, 4=strongly agree). Preference for avoiding people was assessed by an 8-item scale (e.g., "I prefer to stay away from other people"), and preference for remaining at home was measured by a 7-item scale (e.g., "I prefer to spend most of my time at home"). The reliabilities of these scales were acceptable-to-good; ω s were .88 and .79,

Table 2
Stigmatizing attitudes (% agree or strongly agree) for respondents who reported that they often or very often clapped or cheered for healthcare workers ($n = 623$).

	% agree or strongly agree
Healthcare workers who work in hospitals are likely to have COVID-19	39
For the safety of the community, healthcare workers should not go out in public	28
Healthcare workers should have some restrictions on their freedom	29
Healthcare workers who treat people with COVID-19 should be isolated	39
I do not want to be around healthcare workers who treat COVID-19 patients	42
I do not want to be around someone who works in a healthcare setting	30
Healthcare workers who treat people with COVID-19 should be separated from their families	35
I would not be comfortable visiting a healthcare worker for medical reasons because I would be worried I might get COVID-19	38

Table 3
Correlations with the total score on the Healthcare Worker Stigmatization Survey.

	<i>r</i>	<i>p</i>
Female sex	.12	<.001
Age	-.15	<.001
Minority status	.08	<.001
Unemployed	.03	.048
Completed full or partial college	-.03	.061
Pre-existing medical condition	-.03	.091
Current (past year) mental health condition	.05	<.001
Country (United States vs. Canada)	.00	.993
CSS: Fears about COVID-19 dangerousness and contamination	.45	<.001
CSS: Fears that foreigners are spreading COVID-19	.41	<.001
CSS: Fears about socio-economic effects of COVID-19	.32	<.001
CSS: COVID-related traumatic stress symptoms	.30	<.001
CSS: COVID-related compulsive checking and reassurance-seeking	.24	<.001
Avoidance of supermarkets and drug stores	.30	<.001
Preference for staying home	.31	<.001
Preference for avoiding people	.28	<.001

CSS = COVID Stress Scales. Classification of effect sizes: Yellow = small, pink = medium, red = large.

respectively. Applauding HCWs was assessed by asking respondents to rate their agreement with the following face valid statement: “In the past seven days, I have clapped and cheered for healthcare workers” (5-point rating, ranging from 0=never to 4=very often).

3. Results

Table 1 presents the descriptive statistics (% agreement) for the HCW Stigmatization Survey. More than a quarter of respondents believed that HCWs should have restrictions placed on their freedoms, such as not being allowed to go out in public, being isolated from the community, and being separated from their families. More than a third of respondents stated that they would avoid HCWs for fear of contracting COVID-19.

Table 4
Factor loadings for measures of stigma, avoidance, and COVID Stress Syndrome.

	Factor 1	Factor 2
CSS: Fears about COVID-19 dangerousness and contamination	.81	.07
CSS: Fears about socio-economic effects of COVID-19	.80	-.04
CSS: Fears that foreigners are spreading COVID-19	.69	-.06
CSS: COVID-related traumatic stress symptoms	.68	.03
CSS: COVID-related compulsive checking and reassurance-seeking	.69	-.13
Avoidance of supermarkets and drug stores	.43	.13
Healthcare Worker Stigmatization Survey	.42	.19
Preference for staying home	-.03	.90
Preference for avoiding people	.08	.76

CSS = COVID Stress Scales. Bold: Salient ($\geq .30$) loading.

Participation in altruistic support of HCWs was unrelated to stigmatizing attitudes. The tendency to clap and cheer for HCWs during the evening applauding ritual had a near zero correlation ($r = .03, p = .08$) with the total score on the HCW Stigmatization Survey. Even for people who “often” or “very often” clapped and cheered for HCWs, many of these respondents feared and avoided HCWs. This is illustrated in Table 2, which presents the % agreement data of Table 1 but only for people who reported that they often or very often clapped and cheered for HCWs. Here, it can be seen that for people who applauded HCWs, more than a third believed that HCWs should have restrictions on their freedoms, be socially isolated, and separated from their families. More than a third of people who applauded HCWs stated that they would not want to be around HCWs, for fear of infection. Clearly, clapping and cheering for HCWs from the safety of one’s home can occur in people who strongly fear, avoid, and stigmatize HCWs.

Table 3 presents the correlations (Pearson’s *r* and, for dichotomous variables, biserial *rs*) between HCW stigmatization and demographic and other variables. Given the large sample size, substantively trivial correlations were statistically significant (e.g., for $r = .05, p < .001$). Accordingly, to facilitate the interpretation of correlations, we used Cohen (1988) criteria to classify correlations as small ($r = .10$), medium ($r = .30$), or large ($r = .50$). To give precision to these classifications for *rs* falling between the cutoffs, we classified *r* in terms of ranges, using the midpoints between .10 and .30, and between .30 and .50, so as to distinguish among small, medium, and large *rs*; that is, small .10-.19, medium .20-.39, and large $> .39$.

Table 3 shows that demographic and most other background variables had small or trivial correlations with HCW stigmatization. Stigmatization was more strongly correlated with the COVID Stress Scales and with measures of avoidance. People who stigmatized HCWs also tended to have features of the COVID Stress Syndrome (i.e., the five CSS variables in Table 3), to avoid other people, drug stores and supermarkets, and to avoid leaving their homes. The CSS was significantly correlated with the stigmatization scale, based on our community sample. This means that people with high scores on the CSS would tend to have higher levels of stigmatization than people randomly selected from the communities and countries that were sampled.

A Maximum Likelihood factor analysis of the COVID Stress Scales, avoidance measures, and HCW Stigmatization Survey yielded two correlated factors (as per parallel analysis; 51 % variance explained). Factors were correlated .37. Table 4 shows the factor loadings. Here, it can be seen that HCW stigmatization is linked to the COVID Stress Syndrome in that it loaded on the same factor as the COVID Stress Scales. Avoidance of people in general and the preference to stay at home formed a separate but correlated factor.

4. Discussion

Behind the facade of altruistic cheering and clapping for HCWs, there are important, under-recognized, and widespread stigmatizing attitudes toward healthcare providers. Our research suggests that many respondents in the community have grossly exaggerated estimates of the odds that HCWs are carriers of SARSCoV2. That is, almost a third (32 %) of respondents believed that HCWs are likely to have COVID-19 (Table 1). This stands in marked contrast to the research on COVID-19, which shows that the typical HCW is highly unlikely to be infected with SARSCoV2. American data (collected from February-April, 2020) shows that the majority of reported COVID-19 cases (89 %) were not HCWs (CDC COVID-19 Response Team, 2020). Canadian research shows that HCWs as a group (i.e., regardless of whether they specifically care for COVID-19 patients) have a risk of only 0.14 % of developing COVID-19, as compared to 0.10 % in the general population (COVID-19 Scientific Advisory Group, 2020). The higher prevalence was due, in part, to HCWs having a higher prevalence of testing for COVID-19 as compared to non-HCWs (15 % vs. 3%; COVID-19 Scientific Advisory Group, 2020). Among HCWs, the risk of being infected specifically as

part of their occupations was only .01 % (COVID-19 Scientific Advisory Group, 2020). This is consistent with research conducted in the Netherlands, which found that HCWs are more likely to acquire COVID-19 in the community, rather than in hospital settings (Kluytmans-van den Bergh et al., 2020). That is, just like non-HCWs, HCWs were most likely to be infected in the community rather than in hospital settings. Therefore, there is no sound basis for the attitudes of many of our participants, who believed that HCWs should be separated from their communities or families (see Table 1).

Globally, HCWs have a higher risk of acquiring COVID-19 as compared to non-HCWs (Koh, 2020), but even so, the majority (97 %) of HCWs have not been infected (COVID-19 Scientific Advisory Group, 2020). Although HCWs working with COVID-19 patients (e.g., in intensive care units) are at greater risk of exposure to SARS-CoV2, these workers are effectively protected by personal protective equipment (e.g., face masks, gloves, visors), which reduces the risk of infection to minimal levels (Liu et al., 2020). To illustrate, even among frontline HCWs in Wuhan, China (January-February, 2020), working in high-risk settings (i.e., clinics devoted to COVID-19), the incidence of COVID-19 was only 0.55 % (Lai et al., 2020). In other words, even in high risk settings, the overwhelming majority of HCWs (99.45 %) did not develop COVID-19. As observed by Cheng, Wong, and Yuen (2020), “this relatively low infection rate is reassuring, as it suggests that personal protective equipment, if available, can protect frontline HCWs directly caring for patients with COVID-19” (p. 1).

Although HCWs are at increased risk of infection with SARS-CoV2 as compared to the general public, to our knowledge no health authority or government has recommended that HCWs be isolated from their communities or families during the COVID-19 pandemic. Indeed, such harsh measures would unnecessarily compound the stress already experienced by HCWs. Yet, our study revealed that a remarkably high percentage of Canadians and Americans expressed harsh attitudes about isolating HCWs, even to the point of believing that they should be denied access to their families.

How do these unrealistic attitudes arise? In some important ways, the COVID-19 pandemic had largely been a hidden pandemic, at least at the time of data collection (May 6–19, 2020). During the 1918 influenza pandemic, people were widely exposed to deaths in their communities, and the sight of coffins, hearses, and funerals were commonplace (Crosby, 2003). This has not been the case during the COVID-19 pandemic, where exposure to sickness and death has been, for the majority of people, a largely abstract experience in which fatalities are simply reported in the news media, rather than personally experienced. The majority of our respondents (84 %) did not even personally know anyone who had been diagnosed with COVID-19. HCW stigmatization was unrelated to whether the respondent personally knew anyone who had been infected by SARS-CoV2 ($r = .02, p > .10$). Exposure to dramatic images of fatalities from the news media, along with dramatic news images of HCWs tending to the sick and dying, can cause the viewing public to overestimate the personal risk of infection (Taylor, 2019). In this context, many people in the present study held unrealistic attitudes about the dangers of coming into contact with HCWs.

The present study found evidence that the fear and avoidance of HCWs is part of a broader pattern of stigmatization. That is, people who tend to stigmatize (fear and avoid) HCWs also tend to stigmatize foreigners (i.e., are xenophobic, as assessed by the COVID Stress Scales) and also tend to avoid drug stores and pharmacies and, by extension, avoid retail workers in those stores. A question for further investigation concerns the breadth and boundaries of fear and avoidance. People with a high degree of fear and avoidance of HCWs may also tend to avoid other groups of people, for fear that the latter might be vectors of disease (e.g., children or sickly-looking people). Indeed, previous research concerning perceived vulnerability to disease suggests that people who are highly fearful of infection even stigmatize (e.g., avoid) people who only remotely have features suggestive of ill health (e.g., people who are old, disabled, or obese) (Schaller & Park, 2011). An issue for further research

is whether HCW stigmatization is associated with stigmatization of people who have been infected with, and recovered from SARS-CoV2. People who recovered from SARS were stigmatized (shunned, avoided) (Taylor, 2019) and there is concern that survivors of COVID-19 may be similarly stigmatized (World Health Organization, 2020). It remains to be determined whether this is part of a broader tendency to stigmatize people who are associated in some way with illness, and whether it is associated with the COVID Stress Syndrome.

Shunning, ostracism, and avoidance have been notable features of past pandemics and outbreaks, such as during the SARS outbreak (Taylor, 2019). Historians of pandemics have noted that survivors, public health officials, and political leaders tend to forget the lessons learned from previous pandemics (Crosby, 2003). The problem of pandemic-related stigmatization of HCWs is a lesson we have not learned. Cheering for HCWs is not enough. What is needed are clear, sensible, public education campaigns concerning the risks that HCWs pose to the public (see also Bhaumik, Moola, Tyagi, Nambiar, & Kakoti, 2020; Centers for Disease Control & Prevention, 2020).

The present study offers some clues about how to address the problem of HCW stigmatization. Correlational and factor analysis in this study indicates that the tendency to stigmatize HCWs is associated with the COVID Stress Syndrome. Previous research shows that the severity of this syndrome is correlated with the tendency to overestimate health risks in general (Taylor et al., 2020a, b). Thus, the fear and avoidance of HCWs is part of a broader tendency to overestimate health threats. Given that HCW stigmatization is linked to the COVID Stress Syndrome, it is possible that treating this syndrome might lead to a reduction in excessive fears of HCW, thereby reducing stigmatization. This could be done by means of cognitive-behavioral interventions or educational programs (Taylor & Asmundson, 2004; Taylor, 2019). Whether this is beneficial remains to be investigated in future research.

The present study has various strengths and limitations. In terms of strengths, the sample was large and, to our knowledge, this was the first systematic study to empirically investigate HCW stigmatization during COVID-19. In terms of limitations, the study was cross-sectional, conducted several months into the pandemic, and so it is possible that the attitudes and behaviors of respondents may change over time. Our assessment was limited to the self-report of attitudes and behaviors, rather than direct observational assessments of actual behaviors. Nevertheless, the findings are in keeping with studies conducted during the SARS outbreak (Bai et al., 2004; Koh et al., 2005). Further research into the largely unrecognized and under-appreciated issue of HCW stigmatization is needed to better understand and overcome this important societal problem.

There are many different avenues for further investigation. Future research is needed to evaluate the replicability and generalizability of the findings obtained in the present study. Research could be conducted to determine whether the findings are replicated using different methods to assess stigmatization. As part of this, alternative methods could be used to assess the respondents' estimations of the odds that HCWs are infected with SARS-CoV2. Respondents could be asked, for example, to estimate the percentage of HCWs in their community that are currently infected with SARS-CoV2, and this percentage could be compared with local prevalence statistics. The temporal stability of the tendency to stigmatize HCWs also needs to be investigated. Pandemics are dynamic events, in which psychological reactions change over time and circumstance (Taylor, 2019). The tendency to stigmatize HCWs could be trait-like or it might fluctuate, depending on whether the person feels personally threatened with infection. Alternatively, the tendency to stigmatize HCWs could have trait-like qualities (i.e., a baseline tendency to stigmatize) that are exacerbated and expressed when the person perceives that they are threatened with infection. Research on the perceived vulnerability to disease supports this combined trait and state conceptualization. That is, there is an enduring tendency (trait) for people to perceive themselves to be vulnerable to disease, and this vulnerability can be exacerbated when the person is exposed to health

threats, which has been shown to increase their tendency to stigmatize people who have superficial characteristics suggestive of poor health (e. g., the elderly, obese, or disabled) (Schaller & Park, 2011). Answers to these and related questions will help address the under-recognized and significant issue of pandemic-related HCW stigmatization.

Declaration of Competing Interest

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