

Social Stigma towards Health Care Workers during COVID Pandemic : A Hospital based Cross-sectional Study in Kolkata

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Abstract:

Introduction: With the rise of COVID-19 pandemic, the health staffs have faced resistance and disrespect by the society. They have been stigmatised unnecessarily that has been resulted from fear and poor knowledge of general population regarding spread of COVID-19 infection. **Objective :** To estimate the proportion of health care workers who experienced social stigma during COVID-19 pandemic and to determine the association of social stigma with their socio-demographic and other background characteristics. **Method:** A descriptive type of observational study, cross-sectional in design was carried out among health care workers(HCWs) of a tertiary care hospital in Kolkata during the COVID-19 lockdown period (19th May 2020– 20th July 2020) using a pre-designed, pre-tested, structured schedule. By simple random sampling, 422 HCWs were selected and 410 of them had given consent to participate in this study. MS Excel 2010 and SPSS v20.0 were used for data entry and binary logistic regression. **Results :** About 52.68 % had experienced 'Significant Social Stigma', 32.92% experienced 'Insignificant Social Stigma' and only 14.39% had 'no stigma'. Age groups of 25-40 years and mode of transport by hospital vehicle had significant association with social stigma. **Conclusion:** More than half of the study population experienced "Significant Social Stigma". The HCWs who were travelling by hospital vehicles from home to attend their duties and HCWs of younger age group were stigmatised in different ways.


Key words: COVID-19, Pandemics, SARS-CoV-2, Social Stigma

Introduction:

Social stigma in the framework of health is the negative association between a person or group of persons who share a specific disease and certain characteristics.^[1] In an epidemic/pandemic, this mean people are labelled, discriminated against, stereotyped, treated separately, and/or experience loss of status because of a recognized connection with a disease. Such behaviour can affect those with the disease, caregivers, family, friends, doctors and nurses and even communities at large.^[1] The COVID-

19 pandemic, being an unfamiliar communicable disease, has provoked social stigma and discrimination against people perceived to have been in contact with the virus, may be patients or healthcare providers.^[1] Even the family members of the health care workers have been stigmatized.

Among the 'Corona Warriors'; the healthcare workers (HCWs) are considered the most vulnerable for their close contact with patients, their contacts, and asymptomatic carriers. As participation of health care personnel in the treatment of COVID-19 are

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rising, they are increasingly considered by the public as petri dishes of the virus- a source of viral dissemination.^[2]

Prior to this, there were already alarming number of incidences of physical and verbal assault on healthcare provider.^[3] Now during COVID-19 pandemic, many incidents of stigmatization of healthcare workers, have come up across the world.^[4] For instance, in Mexico, doctors and nurses used bicycles during this pandemic, because they were denied access to public transport and faced physical assaults; in Malawi, healthcare workers were disallowed to use public transport, insulted in the road, and evicted from rented apartments.^[4] A mob of locals threw stones and spat upon a team of health care workers and civic officials in Ranipura, Indore who had gone to screen residents' there.^[5] An Auxiliary Nurse Midwife was obstructed from entering her house and manhandled in Bareilly.^[2] In Moradabad's Nawabganj area a team of doctors and medical staff were stoned.^[2] A group of ASHA (Accredited Social Health Activist) workers were assaulted in the Sadiq, area of Bangalore during conducting survey on symptomatic people.^[2] There was a complain of obscenity lodged by Chief Medical Superintendent (CMS) of MMG District hospital of Ghaziabad against a group of five suspected coronavirus patients.^[6] A lady doctor in Surat was verbally abused by her neighbour.^[7] Health Care Workers raised their voices and showed their concern over these increasing instances of stigma on them. Funeral of a nurse who died of COVID-19 in Sewakul village, West Ungaran, Semarang regency in Central java was rejected by several residents.^[8] In Chennai, a neuro surgeon, who died of COVID-19 infection, was denied decent burial.^[9] To tackle the social stigma in COVID-19 pandemic, WHO tells to create an environment where open discussion among healthcare workers and people is possible.^[4]

There are several studies worldwide which speaks about psychological problems, depression, stress and mental health of HCWs during COVID-19 pandemic. However there is dearth of epidemiological research regarding social stigma

towards them during this pandemic and with the best of our knowledge, probably this is the first study in this part of India. With this background this study was conducted on social stigma perceived by the health care workers working in a tertiary care hospital in Kolkata.

Method:

A descriptive type of observational study, cross-sectional in design was conducted during the COVID-19 lockdown period (19th May 2020– 20th July 2020) over a period of 2 months among health care workers of a tertiary care teaching institute of Kolkata, West Bengal, India.

Inclusion and Exclusion Criteria: All persons who were involved in any type of health care or health care related work and were travelling daily from outside the hospital for their duty (either by their own vehicle or vehicle provided by the administration) or those who had hostel accommodation but were availing hospital transport to go home on holidays/ off-days were included in the study. Health care workers who did not give informed written consent were excluded.

Sample Size and Sampling Technique: Assuming proportion (p) of social stigma as 50%, standard normal deviate $Z = 1.96$ (for 95% confidence interval) and 5% absolute precision (d), sample size was calculated using Cochran's formula as $(Z^2 \times p \times (1-p)/(d)^2) = 384$. After adding 10% non-response rate, final sample size was calculated to be 422. By simple random sampling method, 422 people were chosen from an available list of the staffs from the travel register for data collection. However, 12 of them did not gave their consent to participate in the study. Thus a total of 410 people were included.

Study tool: A pre-designed, pre-tested structured schedule was used for data collection which was prepared in consultation with 3 experts; 1 public health specialist, 1 social scientist and 1 psychologists. After the schedule was designed it was pretested among 20 HCWs of the same institution who were not included in final study. Minor corrections were made in the schedule. From their responses Cronbach's Alpha (α) was calculated for

each question. The question with $\alpha > 0.7$ were included in final schedule. The schedule consisted of two parts:

First part included Socio-demographic characteristics (age, gender, religion, caste, marital status, type of family, education, socioeconomic status, current residence, department of work, addictions etc.).

Second part included 17 Components to assess social stigma. Responses of social stigma components were noted in 5 point Likert Scale scoring '0'(zero) to 4 for their responses of 'Never', 'Rarely', 'Sometimes', 'Often' and 'Very often' respectively. Median of the social stigma response score (aggregated) was calculated and it was found to be 7. Scores below 7 were considered to be 'No- significant Social Stigma' (NSS) and scores ≥ 7 were taken as having 'Significant Social Stigma'. Among the NSS, those having '0' score were marked as 'No social stigma', scores 1 to 6 as 'Insignificant Social Stigma'.

Study variables: The study variables were broadly Dependent variables (Social Stigma to HCWs) and Independent variables (age in completed years, gender, religion, caste, marital status, residence, currently living with, type of family,^[10] level of education, occupation, socio-economic status,^[11] transport, addiction).

Data collection technique: After obtaining approval from Institutional Ethics Committee (IEC), data collection was done by face-to-face interview by the investigator and co-investigators, maintaining physical distance and wearing mask, face shield & cap. Informed written consent was taken from all the participants after explaining the purpose & nature of the study and ensuring their anonymity & confidentiality.

Data analysis: Data were entered in Microsoft Office Excel 2010 (Microsoft Corp, Redmond, WA, USA) and analysis were done using Statistical Package for the Social Sciences (SPSS for Windows, version 20.0, SPSS Inc., Chicago, USA). Descriptive and Inferential Statistics for study variables were performed. Descriptive results were expressed by

frequency and percentage; binary logistic regression was done; Pearson's Chi Square Test and odds ratio with 95% Confidence Intervals were calculated. A p value of < 0.05 was considered statistically significant.

Ethics Committee Approval: Approval from Institutional Ethics Committee (IEC) was taken vide memo no. IPGMER/IEC/2020/391 dated 18/05/2020.

Operational Definitions:

Health Care Workers: Health care worker or "HCW" means any paid (by the government or by the contractors) or unpaid person (including health care students/ volunteers) working in a health care facility or hospital on permanent or contractual basis, and involved directly or indirectly in patient care/ academics/ hospital administration/ hospital upkeep and security on a consistent and regularly scheduled basis for five or more hours per week. In Indian context, they include doctors, nurses, support staffs, technicians, para medical staffs, medical students, interns, externs, house-staffs etc.

Residence (hostel): Health Care Workers who had hostel accommodation but used to go their home during holidays/ off-days.

Socio Economic Classification: Revision of the Prasad's social classification for the year 2020^[11]

Other background characteristics: It includes type of transport used by the HCWs, contact with COVID-19 positive patient, posting in fever clinic.

Table 1 shows distribution of the study population as per their Socio-demographic profile. Out of 410 HCWs, 54.6% were females and 45.4% were males. About 39.3 % were in the age group of 25-40 years with mean age of 36.53 ± 12.3 years, median age of 34 years and a range of 18 to 62 years. Most (80.2%) of the participants followed Hinduism; 59.8% were married; 28.8% belonged to Scheduled Caste, 3.2% to Scheduled Tribe, 15.1% to Other Backward Classes and 52.9% to General category. Regarding education, majority (54.1%) were Graduate & above. About 87.3% lived with

Table 1: Socio-demographic profile of study population (N=410)

Socio-demographic characteristics		n(%)
Age group (in completed years)	<25	101(24.6)
	25-40	161(39.3)
	41-55	97(23.7)
	>55	51(12.4)
Gender	Female	224(54.6)
	Male	186(45.4)
Religion	Hindu	329(80.2)
	Muslim	76(18.7)
	Christian	3(0.7)
	Other (Buddhist, Jain, Secular)	2(0.5)
Caste	Others (general)	217(52.9)
	SC	118(28.8)
	OBC	62(15.1)
	ST	13(3.2)
Marital status	Married	245(59.8)
	Unmarried	161(39.2)
	Others(Separated, divorced,Widow)	4(1.0)
Current Residence	Hostel	10(2.4)
	Quarter	13(3.2)
	Rented house	174(42.4)
	Own house	213(52.0)
Living with	Alone	52(12.7)
	Family	358(87.3)
Type of family	Joint	149(36.3)
	Nuclear	261(63.7)
Level of education	Non-formal education	14(3.4)
	Primary	6(1.5)
	Middle school	26(6.4)
	Secondary	57(13.9)
	Higher secondary	85(20.7)
	Graduates and above	222(54.1)

Occupation	Doctor	48(11.7)
	Nurse	176(42.9)
	Paramedical staff (Lab Technician, Physiotherapy interns)	25(6.1)
	Others (House-keeping, clerical staffs, administrative staffs, Security, Lab technician, GDA* etc.)	161(39.3)
Socio-economic class (Modified BG Prasad Scale 2020) ^[11]	Class I (Upper)	216(52.7)
	Class II (Upper Middle)	164(40.0)
	Class III (Middle)	16(3.9)
	Class IV (Lower Middle)	11(2.7)
	Class V(Lower)	3(0.7)
Addictions (if any)	Yes	89(21.7)
	No	321(78.3)

family members whereas rest 12.7% lived alone. Among the respondents, 42.9% were Nurses, 11.7% were Doctors and 6.1% were Paramedical staffs. As per Modified BG Prasad Scale, January 2020,^[11] majority (52.7%) belonged to Class I while only 0.7% were in Class V. Most of them (87.3%) were travelling by hospital vehicles and 12.7% by own vehicles. Addiction was found among 21.7% of the study population.

Distribution of the study population according to response to different components of social stigma was demonstrated in Table 2A and Table 2B which revealed that people did not avoid talking to 46.1% of the HCWs; only 38.0% of the HCWs were not considered as source of infection; 9.5% were ordered to vacate the house by their landlord. Only 52% of the respondents had no fear to step out of their residence. When enquired about psychological status, 13.9% of the HCWs reported to be depressed sometimes and 13.0% were depressed more often. Though 13.9% faced verbal abuse sometimes or more by the patient's relatives and 6.4% faced verbal abuse by their neighbours sometimes or more during last 1 month, there was no incidence of physical abuse. Social media harassment was faced by 7.7% of HCWs.

Table 2A: Distribution of the study population according to response to different components of social stigma (N=410)

Information sought	Never n (%)	Rarely n (%)	Sometimes n (%)	Often n (%)	Very often n (%)
1. People avoid talking to me when they see me.	189(46.1)	102(24.9)	94(22.9)	22(5.4)	3(0.7)
2. People behave strangely and show unusual expression when they see me leaving for duty or returning.	203(49.5)	94(22.9)	90(22.0)	19(4.6)	4(1.0)
3. My family members, relatives and friends are avoiding me and not spending time with me like they used to.	288(70.2)	82(20.0)	25(6.1)	15(3.7)	0(0)
4. People think I might be infected with Covid-19 and transmit infection to them.	156(38.0)	69(16.8)	111(27.1)	67(16.3)	7(1.7)
5. My landlord has asked me to vacate house.	371(90.5)	12(2.9)	16(3.9)	11(2.7)	0(0)
6. My family has asked me to stay in hospital premises and not to return home.	361(88.0)	25(6.1)	13(3.2)	4(1.0)	7(1.7)
7. My neighbours are avoiding meeting and talking to my family members.	244(59.5)	34(8.3)	76(18.5)	35(8.5)	21(5.1)
8. I feel scared to step out of my house for duty.	213(52.0)	105(25.6)	68(16.6)	21(5.1)	3(0.7)
9. My colleagues have changed their behaviour towards me and started behaving strangely.	377(92.0)	15(3.7)	15(3.7)	3(0.7)	0(0)

Out of the 410 participants, 16.1% had difficulties in car parking / water supply/ supply of essential items to their home. During this pandemic, only 61% of the study population never regretted to be in this noble.

Table 3 depicted predictors of social stigma using binary logistic regression. In simple binary logistic regression analysis, age of the participant, female gender, general caste, currently residing in rented house, nuclear family, education up to mid school, living alone, Per Capita Monthly Income, occupation (doctors), mode of transport by hospital vehicle, addiction and contact with COVID-19 patient were found to be statistically significant.

These were considered for final binary logistic regression analysis and age group, female gender, general caste, mid school education, living in rented house, mode of transport by hospital vehicle, and contact with COVID-19 patient were proved to be

statistically significant with stigma score.

Figure 1 showed that about 53% of the study population faced 'Significant Social Stigma'; 33% had 'Insignificant Social Stigma' and only 14% had faced 'No Social Stigma'.

Discussion:

Engagement of HCWs in hospitals & clinic sputs them at high risk of contracting the severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2).^[12] The accelerating spread of COVID-19 and its outcomes has led people to fear, panic, concern, anxiety and thus constitutes stigma.^[13]

In the present study 52.34% of the HCWs faced significant social stigma. A study by Uvais et al ^[14] at Calicut, Kerala among healthcare workers (haemodialysis staff -nurses and technicians) during COVID-19 showed that 54.6% of the dialysis staff

Table 2B: Distribution of the study population according to abuse faced by them (N=410)

Information sought	Never n (%)	Rarely n (%)	Sometimes n (%)	Often n (%)	Very often n (%)
1. I have been feeling depressed and in low mood since last 1 month.	227(55.4)	73(17.8)	57(13.9)	47(11.5)	6(1.5)
2. I have faced verbal abuse by neighbours in last 1 month.	317(77.3)	36(8.8)	48(11.7)	9(2.2)	0(0)
3. I have faced verbal abuse by patients' relatives/other people in last 1 month.	297(72.4)	87(21.2)	13(3.2)	13(3.2)	0(0)
4. I have faced physical abuse by neighbours in last 1 month.	410(100)	0(0)	0(0)	0(0)	0(0)
5. I have faced physical abuse by patients' relatives/other people in last 1 month.	402(98.0)	4(1.0)	4(1.0)	0(0)	0(0)
6. I have faced problem regarding car parking/ water supply/ home delivery of items at my residence.	322(78.5)	22(5.4)	51(12.4)	15(3.7)	0(0)
7. I have been harassed on social media.	358(85.6)	28(6.8)	22(5.4)	6(1.6)	3(0.7)
8. I feel I would have preferred to be in some other job rather than being a health care worker.	250(61.0)	59(14.4)	46(11.2)	28(6.8)	27(6.6)

perceived significant stigma during COVID-19. Another study by Uvais et al^[15] among doctors working in COVID-19-designated hospitals in India revealed that 62.1% had higher levels of perceived stigma. Ramaci et al at Italy^[16] has suggested that stigma has a high impact on workers' outcomes and compliance. Perceived stigma among the HCWs is a major mediator for psychiatric problems during COVID-19 pandemic. The WHO issued specific psychosocial considerations to reduce the growing stigma of COVID-19.^[17]

Due to the lack of studies on the perceived stigma by HCWs during COVID-19, studies were drawn from other sources- Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome coronavirus (MERS-CoV). A study by Verma et al^[18] among General Practitioners (GPs) and Traditional Chinese Medicine Practitioners after the outbreak of SARS pandemic in Singapore revealed that stigma towards GPs who were involved in SARS-affected patient care was significantly higher than that of

Traditional Chinese Medicine (TCM) practitioners. Study by Koh et al in Singapore^[19] among HCWs during SARS pandemic demonstrated that 49% HCWs experienced social stigmatization. In Taiwan 20% of HCWs engaged with the SARS outbreak felt stigmatization and rejection from their neighbourhood revealed from a study by Bai et al.^[20] Stigma had both direct and indirect influence on mental health among nurses working at a government-designated hospital in Gyeonggi-do, South Korea during MERS-CoV epidemic described by Park et al.^[21]

A study by Taylor et al^[22] from the United States and Canada showed that avoidance of HCWs is a widespread problem during the COVID-19 pandemic. Over a quarter of Non-HCW adults believed that HCWs should be isolated from communities and their families too because of fear that HCW is a source of infection. Netherland study by Kluytmans et al^[23] found that HCWs are more likely to acquire COVID-19 in the community, rather than in hospital settings like non-HCWs.

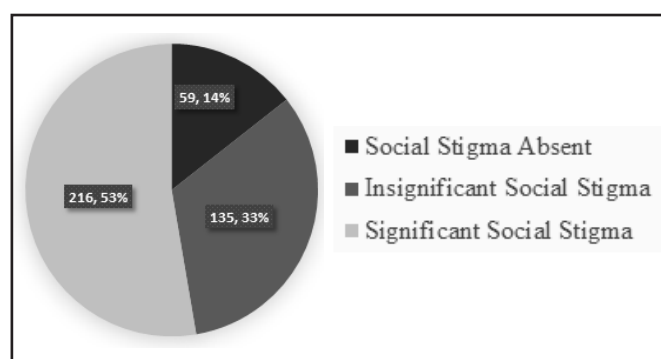
Table 3: Predictors of social stigma: Binary logistic regression (N=410)

Independent variables		Significant Social Stigma present (n=216)	OR (95% CI)	AOR (95% CI)	p value
Age group (in completed years)	<25	61	4.45(2.11-9.39)	34.89(9.29-131.01)	p<0.001
	25-40	92	3.89(1.93-7.87)	14.89(4.92-45.14)	p<0.001
	41-55	50	3.11(1.48-6.55)	11.38(3.87-33.49)	p<0.001
	>55	13	1	1	-
Gender	Female	142	2.62(1.76-3.91)	5.93(2.09-16.82)	0.001
	Male	74	1	1	-
Caste	SC	58	0.82(0.53-1.29)	0.38(0.19-0.77)	0.007
	ST	10	2.85(0.76-10.64)	1.58(0.31-8.19)	0.580
	OBC	31	0.85(0.49-1.50)	0.14(0.05-0.34)	p<0.001
	Others (General)	117	1	1	-
Level of Education	Non formal education	4	0.31(0.09-1.02)	0.81(0.126-5.49)	0.833
	Middle School	20	2.59(1.00-6.69)	38.02(7.99-180.91)	<0.001
	Secondary	26	0.65(0.36-1.17)	1.69(0.51-5.57)	0.389
	Higher Secondary	41	0.72(0.44-1.19)	0.26(0.12-0.57)	0.001
	Graduate and above	125	1	1	-
Residence	Hostel	6	2.01(0.55-7.33)	5.74(0.47-70.19)	0.171
	Quarter	10	4.47(1.19-16.70)	12.69(1.66-97.23)	0.014
	Rented house	109	2.25(1.49-3.39)	3.29(1.62-6.72)	0.001
	Own house	91	1	1	-
Living with	Alone	35	2.01(1.09-3.72)	0.97(0.32-2.97)	0.962
	Family	181	1	1	-
Type of family	Joint	65	0.56(0.37-0.85)	0.60(0.34-1.07)	0.085
	Nuclear	151	1	1	-
Occupation	Doctor	19	2.90(1.31-6.40)	1.75(0.45-6.79)	0.419
	Nurse	118	2.71(1.74-4.22)	1.67(0.49-5.79)	0.413
	Paramedical Staff	10	0.88(0.38-2.09)	0.48(0.11-1.99)	0.310
	Others	69	1	1	-

Transport	Hospital vehicle	205	4.99(2.49-10.03)	39.94(7.59—210.26)	p<0.001
	Own vehicle	11	1	1	-
Contact with COVID19 Positive patient	Yes	38	1.76(0.99-3.11)	2.41(1.05-5.54)	0.038
	No	178	1	1	-
Addictions (if any)	Yes	40	1.49(0.93-2.38)	1.33(0.59-2.95)	0.49
	No	176	1	1	-

Model Fit: Cox and Snell R-Square=0.365, Nagelkerke R-Square=0.487, Omnibus Test p <0.001, Hosmer-Lemeshow Test p=0.074

Figure 1: Pie diagram showing distribution of study population according to presence of social stigma (N=410)



American data collected from February-April, 2020 revealed that the majority of reported COVID-19 cases (89%) were non HCWs.^[24] Similarly Canadian research demonstrated that HCWs had a risk of only 0.14 % of developing COVID-19, compared to 0.10 % in the general population.^[25] In a study by Jha et al^[26] in Max Superspeciality Hospital in India, 14.7% of HCWs who participated had flu-like symptoms, and only 1.8% of them had COVID-19 infection. Thus there is no basis for the attitudes that HCWs should be separated from their communities and/or families.

Strengths & Limitations:

Strengths of the present study are:

- There is a dearth of epidemiological research study about healthcare worker's stigmatization during COVID-19 pandemic and to the best of our knowledge this is probably the first study carried out in this part of India.

- Large sample size.
- High response rate(97.15%).
- Our findings provide valuable information that HCWs are associated with the "COVID Stress Syndrome" and interventions that reduce "COVID Stress Syndrome" may also reduce stigma towards HCWs.

Limitations:

- Firstly, there was lack of a validated scale that specifically assesses the stigma associated with COVID-19.
- Secondly, the cross-sectional design did not allow exploring the changes in stigma pattern over time.
- The third limitation was possibility of social desirability bias, that is, responses to some questions being socially favourable. Moreover the study population were recruited from a single institute for this study which limit the external validity. Last but not the least qualitative method was not used which would have added more insights to the problem.

Conclusion and Recommendations:

The COVID-19 has emotionally affected the lives of HCWs- both for the physical threat of the disease, and fear of stigmatisation. This study has revealed that more than half of the study population experienced "Significant Social Stigma".The HCWs who were travelling from home to attend their duties were stigmatised in different ways. Many of them were considered as source of infection by the society. People avoided them and reacted strangely when

they had seen them going to duty or coming home. Few Rented house residents were ordered to vacate the house by their landlords. They had difficulties regarding water supply, car parking and delivery of essential items to their home.

It is not known at this point whether this pandemic will have a continuing effect, or it will end after an extended time-hence it is important that stigma towards these HCWs be explored and treated. Community awareness generation through mass media will play an important role. Accommodation of the HCWs in hospital facility may be considered, especially during the pandemic. Co-operation, assistance and strict measures from administration for the safety of HCWs and their family members can reduce the stigma. Development of an environment/forum, where open discussion among health care workers and people is possible, will educate the general population and clear their doubt and it will reduce the stigma.

Declaration:

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Conflict of Interest: Nil

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