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Status of COVID-19 Patients and Associated Stigma After Discharge from Designated Health Facilities of Kathmandu Valley: A Telephonic Survey

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ABSTRACT

Background: COVID-19 is a highly contagious viral disease. The anxiety, misinformation about COVID-19, and the fear of being infected by the virus have led to widespread stigma in local communities. Thus, we conducted a study to evaluate the status of patients and disease-associated stigma of patients who recovered from COVID-19.

Methods: Status of discharged/ improved COVID-19 individuals were followed after their discharge within 2 months after COVID-19 status through telephonic interview. Data of interview was recorded in excel sheets, which was imported in Stata v. 15. Simple descriptive analysis performed and finding presented in appropriate tabulation. Further binomial logistic regression analysis was performed for post-treatment stigmatization.

Results: Among 365 case details retrieved, 262 cases contained contact details. Among them, 221 total phone calls were made, of which only 94 could reach for phone interview. 50 (53.19%) were male; 59 (62.77%) were married; and 85 (90.43%) were Hinduism by religion. Majority (n=74, 78.72%) were asymptomatic. The average hospital/ isolation stay of patients was 11.23±4.75 days. Among interviewed individuals, 24 (25.81%) reported some type of stigmatization. Individuals with comorbidities and tested for travel purpose has less chance of stigmatization comparing than others. Higher the age in years and longer the duration of hospital/isolation stay; higher the odds of having stigmatization.

Conclusions: High level of stigma was seen among COVID-19 survivors. The stigma associated with COVID-19 was shown to increase with age and length of hospital stay while the stigma decreased with the presence of co-morbidities and was tested for travel purposes.

Keywords: Anxiety disorders; COVID-19; social stigma; survivors; treatment outcome

INTRODUCTION

COVID-19 pandemic has infected 94.1 million people claiming the lives of 2 million people around the world as of 20 January, 2021.[1] In Nepal, 267,992 people were infected with 1969 deaths as of 19 January, 2021.[2] Nationwide lockdowns to contain the virus resulted in an increase of psychiatric disorders like grief, anxiety, post-traumatic disorders, and depression.[3] The anxiety, misinformation about COVID-19, and the fear of being infected by the virus have led to widespread stigma in local communities.[4] Goffman described stigma as "an attribute that is deeply discrediting which reduces a person from a whole and usual person to a tainted, discounted one".[5] Patients with COVID-19 have experienced stigma similar to other infectious diseases like tuberculosis and AIDS.[6] Stigma can cause feelings of social exclusion, shame, helplessness, and worthlessness among patients even after recovery. Stigma experienced by patients may be perceived, anticipated, experienced, or internalized.[4,7,8]

Previous studies in Nepal reported stigma caused by the pandemic resulted in unwanted hatred and marginalization of recovered patients.[7] Thus, we conducted a study to evaluate the status and stigma of patients who recovered from COVID-19 from various health facilities in Kathmandu.

METHODS

Data of COVID-19 individuals discharged/ improved after appropriate care was taken from Epidemiology and Disease Control Division (EDCD). The status of individuals was followed through COVID-19 Crisis Management Center (CCMC) after their discharge within 2 months

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after COVID-19 status through telephonic interview using a preset proforma. The study was carried from July 21, 2020 to August 7, 2020.

For this study institutional review committee of the Nepalese Army Institute of Health Sciences granted the permission (ref. no. 396). Verbal informed expressed consent was taken from participants for this study before beginning the telephonic interview. Those giving consent and interested in the study were enrolled for the further interview session. To prevent subjective bias, during the study period telephonic interview was carried out by single individual from the authors representing CCMC.

The sample size was calculated by using formula, N = (z^2×p×q)/d^2, Where, N= number of required sample, p= estimated prevalence of repeat cesarean section, d= maximum tolerable error (5 %), z= 1.96 taken at 95 % of confidence interval.

According to prior study conducted to gauge stigma due to severe acute respiratory syndrome (SARS), prevalence of reported stigma was 35.7%[9] so taking this study, estimated prevalence (P) = 37.5%, using above formula calculated sample size was 353.

Data of interview was recorded in excel sheets, which was imported in **Stata v. 15** after necessary cleaning and coding. Simple descriptive analysis performed and finding presented in the appropriate tabulation. Further binomial logistic regression analysis was performed for post-treatment stigmatization. Stigmatization reported by the subjects for this study was perceived stigma faced by particular individual. Perceived stigma is fear of being discriminated against or the fear of enacted stigma that arises due to societal belief. For logistic regression analysis, the dependent variable stigma was coded as "1=yes" and "0=no". Regression for having stigma "yes" in comparison to "no" was carried out for other independent variables after omitting collinear variables. Adjusted odds ratio with their 95% confidence interval drawn considering 5% Standard error (SE).

RESULTS

Among 365 case details retrieved from EDCD, 262 cases contained contact details. Among them 221 total phone calls were made, of which only 94 could reach for phone interview. Among those who could not reach for phone interview, 55 did not answer to call, 26 were not available to talk/ not willing to answer, 23 were switched off, 16 were wrong number, and 7 were disconnected without completing the interview (Figure 1).

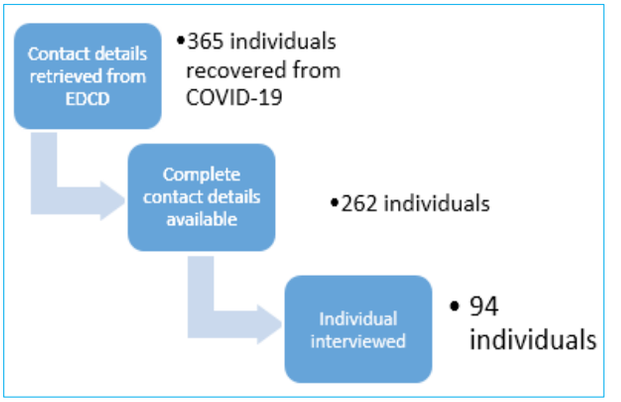

Figure 1. Flow chart detailing subject enrollment in study.

Among 94 interviewed individuals, 50 (53.19%) were male; 59 (62.77%) were married; and 85 (90.43%) were Hinduism by religion. Majority (n=74, 78.72%) were asymptomatic while presenting for testing. 50 (53.19%) gave history of recent travel (Table 1).

Table 1. Baseline patient's characteristics.

Variables		Frequency	Percent
Sex	Female	50	53.19
	Male	44	46.81
Marital status	Married	59	62.77
	Unmarried	35	37.23
Religion	Buddhist	8	8.51
	Hindu	85	90.43
	Muslim	1	1.06
History Recent travel	No	44	46.81
	Yes	50	53.19
Type of travel	Domestic	9	18
	International	41	82
Any comorbidities	None	58	61.7
	Yes	36	38.3
Symptomatology during testing	Asymptomatic	74	78.72
	Symptomatic	20	21.28
History of possible contact	No	56	59.57
	Yes	38	40.43
Known hypertension	Hypertension	14	38.89
	No	22	61.11
Reason for Testing	Contact history	26	27.66
	For further treatment	16	17.02
	Post-travel	37	39.36
	Travel purpose	10	10.64
	Other	5	5.32

Average age of interviewed individual was 33.01±11.79 years with average hospital/isolation stay of 11.23±4.75 days. Number of family members and relatives tested ranges from 1-11 with test positive ranged from 1-8 (Table 2).

Among tested individuals, both oro-pharyngeal (OP) and Naso-pharyngeal (NP) swabs were taken in 61 (64.89%). Majority of contacted individuals tested in Patan Hospital (n=51, 54.26%). Only 8 (8.51%) individuals received interventional treatment like corticosteroids and other care in intensive care unit rest took only supportive care, observation, or isolation. Majority were tested for negative result before discharge/termination of isolation/care, while 15 (15.96%) did not re-test for negative PCR results. Majority opted for mask and hand hygiene as preventive measures after treatment (n=70, 74.47%). All individuals interviewed were from Kathmandu and took treatment from different COVID-19 treatment centers of Kathmandu. Among interviewed individuals, 24 (25.81%) reported some type of stigmatization during and following their treatments (Table 3).

Binary logistic regression analysis performed for dependent variable Stigmatization taking other studied independent variables for stigma omitting collinear variables. Adjusted odds ratio is presented in Table 4. In regression analysis, individuals with comorbidities has less chance of stigmatization comparing with those without comorbidities (OR, 0.01; CI, 0.0001-0.8166; P=0.04). Similarly, individuals tested for travel purpose has less chances of stigmatization comparing with those with contact history. Further, individuals tested with both OP and NP swab have less stigmatization comparing to those with only NP swab. Higher the age in years of tested individual and longer the duration of hospital/isolation stay; they have higher odds of having stigmatization (Table 4). Rest other independent variables do not have significant odds for stigma.

Table 2. Summary details of continuous variables.

Variables (n=94)	Mean	SD	Median	Smallest	Largest
Age in years	33.01064	11.79347	29	9	70
Duration of stay in hospital or isolation center (in days)	11.23404	4.75061	11	3	26
Total number of family members	4.595745	5.716076	4	1	50
Number of family members tested	3.244681	5.731794	2	1	11
Number of members positive	1.255319	1.015325	1	1	8

Table 3. Test and treatment details.

Variables		Frequency	Percent
Swabs taken for sample	NP only	21	22.34
	OP and NP both	61	64.89
	OP only	12	12.77
Swab collection center	Patan hospital	51	54.26
	Teku hospital	22	23.4
	TUTH	21	22.34
Negative test before Discharge	1 negative	46	48.94
	2 negatives	33	35.11
	Not done	15	15.96
Treatment received	Interventional	8	8.51
	Isolation/observation	56	59.57
	Supportive care	30	31.91
Preventive measures adopted	Mask only	1	1.06
	Mask and Hand hygiene	70	74.47
	Mask, Hand Hygiene and Social distancing	23	24.47

Treatment center	APF hospital	22	23.4
	KMC duwakot	21	22.34
	Teku hospital	17	18.09
	Patan hospital	12	12.77
	Hams hospital	9	9.57
	Home isolation	5	5.32
	Kirtipur isolation	3	3.19
	Hotel isolation	2	2.13
	TUTH	2	2.13
	Mediciti	1	1.06
Social stigma after treatment	No	69	74.19
	Yes	24	25.81

Table 4. Binary Logistic Regression analysis (n=93).

Independent variables for stigma		Adjusted OR	Lower value of OR (95% CI)	Upper value of OR (95% CI)	SE	Z	p-value
Sex	Male®						
	Female	8.469431	0.9628806	74.49652	9.395576	1.93	0.054
Marital status	Married®						
	Unmarried	0.263416	0.028186	2.461782	0.300368	-1.17	0.242
Religion	Buddhist®						
	Hindu	0.253402	0.018837	3.408806	0.336041	-1.04	0.301
	Muslim	1					
Occupation	Non-Healthcare®						
	Healthcare	0.150397	0.006474	3.494124	0.241373	-1.18	0.238
History Recent travel	No®						
	Yes	4.155017	0.087353	197.6368	8.187473	0.72	0.47
Any comorbidities	None®						
	Yes	0.011131	0.000152	0.8166	0.024395	-2.05	0.04*
Symptomatology during testing	Asymptomatic®						
	Asymptomatic	1.363211	0.085201	21.81132	1.928413	0.22	0.827
History of possible contact	No®						
	Yes	1.431375	0.079794	25.67647	2.108351	0.24	0.808
Reason for Testing	Contact history®						
	For further treatment	12.40601	0.017224	8935.764	41.6472	0.75	0.453
	Other	1					
	Post-travel	0.003978	0.000010	1.459074	0.011985	-1.83	0.067
	Travel purpose	0.000809	7.48E-07	0.875396	0.002885	-2	0.046*
Swabs taken for sample	NP only®						
	OP and NP both	0.040725	0.002585	0.641555	0.057287	-2.28	0.023*
	OP only	0.782699	0.029348	20.87447	1.311258	-0.15	0.884
Negative test before discharge	1 negative®						
	2 negatives	2.719011	0.297581	24.84372	3.069122	0.89	0.376
	Not done	0.385149	0.021097	7.031275	0.570756	-0.64	0.52

Treatment received	Interventional®						
	Isolation/Observation	0.401874	0.005782	27.92997	0.869646	-0.42	0.674
	Supportive care	1.172409	0.027432	50.10812	2.246235	0.08	0.934
Preventive measures adopted	Mask and Hand hygiene®						
	Mask only	1					
	Mask, Hand Hygiene and Social distancing	2.684116	0.228809	31.48683	3.371939	0.79	0.432
Age in years		1.142627	1.020311	1.279607	0.066007	2.31	0.021*
Duration of hospital stay		1.406159	1.074584	1.840046	0.19294	2.48	0.013*
Total number of family members		0.891868	0.555955	1.430742	0.215067	-0.47	0.635
Number of members positive		0.177509	0.021332	1.477124	0.191897	-1.6	0.11
Number of members tested		1.14624	0.690659	1.902338	0.296272	0.53	0.597
Constant		0.99832	0.00103	967.7071	3.502646	0	1

*Note: ®=Reference category, *significant at 95% CI, with SE 5%*

Among 24 who were stigmatized, 23 revealed their stigmatization details. Majority of them faced a delay in their appropriate treatment/care, rest faced difficulties in job resumption and some faced other forms of social stigma (Table 1).

DISCUSSION

Infectious diseases like tuberculosis, Hepatitis, HIV and Zika have been associated with great stigma in the society from the past.[10] Outbreaks of infectious diseases like SARS, MERS, Ebola, etc have created fear, uncertainty and discrimination towards people infected by the disease in the past.[11,12] In the same breath, COVID-19 has caused enormous fear due to the uncertain course and unpredictable nature of the illness resulting in fear of acquiring the infection. In the absence of proper treatment and questions looming over the period of protection offered by the vaccines, people try to limit their communication and possibly avoid infected patients even after their recovery. In the end, COVID-19 survivors are prone to be marginalized, discriminated, treated in a different way at their workplace and community due to the perceived threat people think they pose. Thus, we conducted our study regarding the social stigma, socio-demographic variables, treatment modalities and centers to assess the status of people who recovered from COVID-19 in a low income developing nation like ours.

Our study found that 26.88% of patients who recovered from COVID-19 experienced various forms of stigma in their day to day lives. We found that about 30.4% of patient's work was affected either due to loss of job, difficulty finding job or lack of approval of family members to work. COVID-19 has been shown to have a negative effect on job demand and lead to burnout and fatigue among healthcare workers in a study done in Italy.[13]stigmatisation, and potentially exposing their families to infection were prominent themes for healthcare workers (HCWs Thus, the infection destabilized survivors job and threatens the livelihood of survivors as the financial burden can result in frustration, depression, anger and increased risk of suicide which has been seen in Subbaraman et al's study.[14] Similarly, survivor experienced enacted stigma like social isolation, alienation by neighbors and lack of care takers during pregnancy. These findings are similar to the study in India where enacted stigma like losing friends, being boycotted or hurt by friends received the highest score among COVID-19 survivors.[15] Further, the study showed increased cases of enacted stigma in males, association of both enacted and internalized stigma with education.[15] In our study, we examined the relation of total stigma with various socio-demographic variables and did not classify the subtypes of stigma and did not evaluate the association of various subtypes of stigma. All forms of stigma including the total stigma were shown to be associated with occupation, as per Dar et al. study.[15] However, we found no association between stigma with sex and occupation in our study.

We found that people with co-morbidities are less likely to experience stigmatization compared to those without co-morbidities. This could be explained by the fact that patients with co-morbidities need care and emotional support from their family members and are more likely to receive empathy from the community members due to their diseased status. Similarly, people tested with travel purpose faced lesser stigma compared to other

groups most likely due to emotional attachment of the family members and the awareness that they would depart soon. We also found that older people are more likely to experience stigma and the stigma increases with duration of stay in the hospital. This can be explained by the fact that old people are more likely to be stigmatized shown by Richeson et al. and the stigma worsens further with COVID-19 infection.[16] People comprehend the longer duration of hospital stay to be related to the severe illness which explains why stigma increases with the duration of hospital stay. People are more likely to be fearful and avoid COVID-19 survivors who had longer hospital stays believing they had severe illness and were likely to infect them even after recovery. We could not demonstrate a possible relationship between stigma and other independent variables like history of travel, marital status, treatment received, etc through binary logistic regression analysis.

Our study had several limitations. Firstly, the small sample size makes our findings difficult to generalize. Secondly, we could not use a scoring system to classify different types of stigma as we used telephone interview for data collection. Thirdly, most of the survivors lived in the urban environment, leading to a lack of knowledge about experiences shared by COVID-19 survivors in the rural areas.

CONCLUSIONS

A high level of stigma was seen among COVID-19 survivors. The stigma associated with COVID-19 was shown to increase with age and length of hospital stay while the stigma decreased with the presence of co-morbidities and travel purpose.

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