

SARS COV 2 positive healthcare workers in obstetrics and gynaecology- Save the saviour study

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ABSTRACT

Context: Health-care workers (HCWs), being the front-line warriors, have been at increased risk for COVID-19 throughout the pandemic. However, the current extent of SARS-CoV-2 transmission and associated risk factors is still unclear in low- and middle-income countries, like India, especially in the department of obstetrics and gynaecology, which propelled this study. **Aims:** (i) Frequency of infection among HCWs among OBGYN department and cycle threshold value (Ct_v) of SARS-CoV-2 on RT-PCR. (ii) Clinical presentation, assessment of risk factors, and its impact on HCWs. **Settings and Design:** This was a prospective study conducted at the Department of Obstetrics and Gynaecology, VMMC and Safdarjung Hospital, New Delhi for the duration of 6 months. **Methods and Material:** All SARS-CoV-2-positive HCWs in the department were interviewed verbatim after recovery, through a self-formulated, validated questionnaire, and answers recorded on pre-designed proforma. **Statistical Analysis Used:** Categorical variables were presented as number and percentage (%), whereas continuous variables as mean \pm standard deviation (SD) and median values. Data were transferred on Microsoft Excel spreadsheet and analysed using SPSS v 27.0. **Results:** Amongst 727 HCWs working in the department, 350 RT-PCR tests were performed, and 110 tested positive (prevalence of 15.13%). Mean Ct_v of RT-PCR was 28.03. Most HCWs were symptomatic ($n = 94$) with mild infection; working as nursing officers (40%). Majority of them acquired virus while working in non-COVID wards (76%). Noncompliance with IPC practices (40%) and lack of social distancing (34.5%) were key risk factors. **Conclusion:** Adept knowledge of the risk factors and IPC practices can aid in averting casualties due to SARS-CoV-2 amongst the HCWs

Keywords: Behaviour modification, clinical features, risk factors, SARS COV-2 positive health-care workers

Introduction

Ever since being declared a pandemic by World Health Organization (WHO) in March 2020, the health-care facilities worldwide are struggling to provide protection to their health-care workers (HCWs) from the novel coronavirus (SARS-COV-2). As this had been an unexpected and bewildering medical emergency,

the supplies of personal protective equipment (PPE) fell short to combat the initial surge of cases. Although use of adequate PPE is thought to be the rate-limiting step in preventing infection from SARS-COV-2, other strategies, such as hospital-based surveillance, contact tracing, and prompt isolation and treatment, are also to be implemented for breaking the chain of transmission.^[1]

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Health providers have been at the receiving edge of the COVID-19 flare-up response, and as such are presented to perils of contracting the virus. The first report from China on HCWs being afflicted by SARS-COV-2 in early March 2020

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revealed 3300 infected cases, along with 22 deaths.^[2] In the US, 100,481 health-care personnel were infected within a time span of 4 months.^[3] According to CDC report in October 2020, 5.9% of adults admitted in hospitals were HCWs, with a death rate of 4.2%.^[4] Recently, WHO on 29 January 2021 updated the number of deaths in HCWs which was estimated to be close to 1.29 million COVID-19 cases, or 8% of cases.^[5]

The MOHFW, India has laid down guidelines for rationalized use of PPE, enlisting adequate PPE as per work area risk stratification in a health facility, in order to optimize its use and provide a baseline for saving our saviours.^[6] It has also issued advisory for management of HCWs for minimizing exposure and loss of workforce in the hospitals, including doctors, nurses and other paramedical staff.^[7] These guidelines have become applicable in all hospitals, across all departments.

The Obstetrics and Gynaecology (OBGY) department at Safdarjung Hospital caters to around 30,000 deliveries per year. Because of the large patient encumber, and being a tertiary referral centre with no available refusal policy, one-bed-one-patient norm cannot be followed, even during COVID-19 times. So, all the wards in the department remain flooded with patients hailing from all over Delhi NCR, Haryana, UP and Bihar, in addition to critical patients being referred from as far as Madhya Pradesh.

Though during this pandemic, elective medical procedures are being deferred in practically all branches of medicine, obstetricians are not left with any choice as labour cases always present as emergency round the clock. Most aerosolizing procedures that have been labelled as high-risk (e.g. intubation) include direct contact with respiratory tract.^[1,8,9] However, a rapidly spreading debatable theory of laboured breathing and expulsive forces of pushing in the second stage of labour in a parturient leading to aerosol generation, has become a cause of worry amongst obstetricians worldwide.^[10]

Following the MOHFW guidelines of a staggered staffing during lockdown, as such the current HCW at any time in OBGY department were at an additional increased danger of getting infected. Gradual casualties over those 3 months left the rest of the HCWs with even greater work-load physically and psychologically.

Despite the fact that adherence to IPC procedures is vital, published evidence recommends that medical care experts, including obstetricians, have opportunities for improvement.^[11] The key is to be familiar with consistent and correct use of adequate PPE, as per their working stations (including donning and doffing). Likewise, constant preparation and continuous training about IPC practices ought to be done periodically to keep HCWs appraised and to ensure strict observance of the guidelines by them.

Keeping all this in mind, supplemented by the scarcity of literature on COVID-19 in HCWs in the OBGY department,

this study was conducted to gauge the incidence of SARS-COV-2 in HCW in OBGY (and infectivity), clinical presentation, risk factors which led them to contract the virus, and consequent change in behaviour. The ultimate goal is to curb this chain of infection, eliminating the frequently encountered risk factors, and formulating innovative and up-to-date guidelines for optimally managing HCWs, safeguarding their health and rights, along with supporting them whenever ill, as they continue to fulfil their responsibilities of patient care. The conclusions drawn would aid in improving the IPC practices and infectivity rates in rural hospitals and First referral units/primary health centres in the region, where bulk of the low-risk deliveries occur. They should also be periodically reinforced to wear adequate PPE while examining and conducting deliveries, besides exercising precautions and strict adherence to COVID appropriate behaviour, in order to break the chain of transmission amongst the health force.

Materials and Methods

This study was conducted over a period of 6 months (April to September 2020) in the department of OBGY, which is one of the busiest departments of the hospital. The study was done after taking institutional ethical clearance (vide no. IEC/VMMC/SJH/Project/2020-07/CC-04) adhering to the Helsinki declaration 1975, wherein all SARS-COV-2 positive HCWs in OBGY department, who willingly consented, were enrolled.

Post recovery or joining back in the department, each of the participants was interviewed verbatim through a self-formulated, validated questionnaire, and answers recorded on pre-designed proforma. Outcomes measured were frequency of infection among HCWs of OBGY department, the Cycle threshold value (C_{tv}) of SARS-COV-2 on RT-PCR, clinical presentation and severity of the disease, IPC practices followed by them prior to infection, management and outcome, behavioural modifications after recovery, and suggestions given by them for enhanced control of viral spread amongst HCWs.

Results

During the 6-month study period, there were a total of 727 healthcare workers working in the Department of Obstetrics and Gynaecology of Safdarjung Hospital in New Delhi, India at the time of this study. Since April 2020, 350 RT-PCR tests were done upon HCWs of this department, out of which, 110 were positive, thereby, indicating a prevalence of 15.13% and test positivity of 31.43%.

Socio-demographic factors and general characteristics of HCWs (N = 110)

Of these 110 HCWs with SARS COV-2, 87% (*n* = 96) were females. The mean age was 31.81 ± 8.57 years. Most of them were working as nursing officers (*n* = 44, 40%) FOLLOWED by junior residents (*n* = 22, 20%), senior residents (*n* = 12, 11%), and nursing attendants (*n* = 10, 9%). Majority were posted in the

non-COVID ward ($n = 84, 76\%$). The average working hours in a week for each HCW was 49.01 ± 10.54 . Maximum HCWs with COVID-19 were residing at homes with their families ($n = 44, 40\%$). A further breakdown of facilities at residence depicted overcrowding at place of stay amongst paramedical and support staff [Table 1].

Symptomatology of HCWs ($N = 110$)

These 110 HCWs underwent RT-PCR for SARS-COV-2 because of either experiencing symptoms ($n = 94, 85.5\%$) or becoming asymptomatic contacts of an infected positive patient/other HCW. Out of 94 HCWs with clinical features of COVID-19, mean duration of symptom appearance following exposure was 4.75 ± 2.69 days. The number of symptoms experienced by each varied from 1 to 6 [Median (IQR) = 2 (2–3)]. Fever was the most common symptom ($n = 78, 83\%$) followed by sore throat ($n = 64, 68\%$), anosmia ($n = 30, 32\%$), headache ($n = 30, 32\%$), dry cough ($n = 24, 26\%$) and body ache ($n = 10, 11\%$) [Figure 1].

The mean cycle threshold value (CTv) of RT PCR of the HCWs was $28.03 (\pm 6.58)$ with a range of $16.01 - 37.81$; with majority ($n = 40, 36.4\%$) having a CTv of >32 [Table 2].

Risk factors for acquiring SARS-COV-2

Around 40 HCWs had failed to attend COVID-19 training before start of the posting. Only 71% ($n = 78$) HCWs had taken prophylactic dose of hydroxy-chloroquine (HCQ). All the HCWs used PPE kits adequately, though two of them experienced a breach in PPE which was thought later on. Buddy system was not followed by 32.7%. Also, social distancing norms were flouted by around 36HCWs (34.5%). Further analysis showed that 1/ 4th of HCWs got infected while giving handing-over to the next team, during eating and chit-chat sessions. The IPC strategies were not stringently practiced by 40% of HCWs, indicating protocol violation. [Table 3]

Management and outcome of infected HCWs

Most of the HCWs were home quarantined ($n = 74, 67\%$). They were quarantined for a period of 17 days as per MOHFW guidelines. Out of 94 symptomatic HCWs, only eight had moderate symptoms, remaining having infection of mild category. Out of these eight HCWs, with moderate infection, four HCWs had associated co-morbidities like diabetes, hypertension. However, there were no ICU admissions or fatalities. [Table 3 and Figure 2]

Behavioural modifications of HCWs post recovery

All the study subjects were afraid of meeting family and friends post-COVID, though none of them sought psychosocial support. Around 12 members (10.9%) faced violence from the society in the form of verbal abuse due to social stigma. Majority of the HCWs exhibited no hesitation for coming to work ($n = 86, 78.2\%$). Once smitten, 58.18%HCWs admitted to have become fearless, and were not afraid of keeping the guard down. Also, 76.4% ($n = 84$) were willing to donate their plasma for community benefit / on

Table 1: General characteristics of the study participants

General characteristic	Parameter	Number (n=110)	Percent
Age	<25 years	14	12.7
	25-40 years	84	76.4
	41-55 years	8	7.3
	>55 years	4	3.6
Sex	Female	96	87.3
	Male	14	12.7
Place of residence	With family	44	40
	Room	56	50.9
	Hostel	10	9.1
Persons per room	1	56	50.9
	2-3	42	38.2
	>3	12	10.9
Designation	Nursing officer	44	40
	PG resident	22	20
	Senior Resident	12	10.9
	Nursing attendant	10	9.1
	Intern	8	7.3
	Consultant	6	5.5
	Cleaning personnel	4	3.6
	Counsellor	2	1.8
	Sample collector	2	1.8
	Place of posting	Non-COVID ward	84
COVID ward		24	21.8
COVID-suspect		2	1.8
Work station in the hospital	Ward	70	63.6
	OT	18	16.4
	LR	10	9.1
	OPD	6	5.5
	Fever clinic	4	3.6
	Triage	2	1.8
Place of residence	At home with family	44	40
	Room alone	56	50.9
	Hostel	10	9.1

Table 2: Cycle threshold value and symptomatology of COVID-19 positive healthcare workers (n=110)

Attribute	Parameter	n	Percent
Need for testing for COVID 19	Symptomatic	94	85.5
	Asymptomatic but positive contact history	16	14.5
CT value	<17	4	3.6%
	17-24	30	27.3%
	>24-32	36	32.7%
	>32	40	36.4%
Number of symptoms	1-2	60	54.7
	3-4	30	27.2
	≥ 5	4	3.6
Co-morbidities	No co-morbidity	98	89.1
	DM	2	1.8
	DM and HTN	4	3.6
	HTN	4	3.6
	Gluten sensitivity	2	1.8

humanitarian grounds. However, only 20% could donate and rest were rejected due to low or absent antibody titre [Table 4]

Suggestions given by infected HCWs to decrease infection rate

Most of the HCWs ($n = 84, 76.36\%$) suggested that all patients coming to OBGY department should be screened at the point of care itself for SARS-COV2, and isolated in time to decrease exposure. Maximum HCWs ($n = 102, 92.72\%$) wanted to ensure continued supply of optimal PPE in COVID and non-COVID areas of the department. Also, 48 HCWs recommended mandatory rotational testing of all HCWs and/or antibody testing prior to posting to identify those who have already developed

immunity. Most of the paramedical staff (60%) advocated rotational posting/duties in COVID dedicated areas and lesser working hours to decrease the exposure. Around half of the study subjects were of the opinion that the hospital should be either a dedicated COVID hospital or entirely non-COVID facility. Around 10% of the HCWs wanted risk allowance as monetary benefit for motivation to work in COVID areas; 3% refrained from giving any suggestions.

Discussion

The novel coronavirus disease, previously designated as pneumonia of unknown cause, that originated from Wuhan province in China was declared a pandemic by WHO on March 11th, 2020.^[12] Since its identification, China was the first to report 3300 infected cases, along with 22 deaths among HCWs during WHO-China joint mission.^[13-15] It has been observed that HCWs are constantly being exposed to the virus due to their continuous susceptibility for the same during patient care.^[13]

The OBGY department at Safdarjung hospital being one of the largest in New Delhi caters to large patient influx. Owing to the corona pandemic, with gradual increase in number of high-risk patients, a separate dedicated facility was identified in the super-specialty block of this hospital with state-of-the-art COVID labour room and OT facilities. From amongst the existing staff only, separate HCWs from the OBGY department were identified (by rotation) for dispensing antenatal and postnatal services to SARS-COV-2 positive women. All HCWs were managed according to the existing MOHFW guidelines.^[6] They were oriented and trained in batches at the start of the posting in collaboration with the department of Medicine, Microbiology and OBGY to make them versed with IPC practices.

Also, OBGY is the second-largest department at the hospital, after anaesthesiology, in terms of both workforce and patient load, with around 650 OPD and 100 admissions per day. There are long working hours in labour wards to follow up all patients besides casualty and emergency OT. As such, there is anticipated increased exposure from infected patients.

Table 5 depicts an analogy of findings of extant research from India with other recent reports on HCWs. The current study

Table 3: Outcome of HCWs with SARS COV-2

	Number	Percentage
Home quarantine	74	67
Hospital quarantine	36	33
Asymptomatic/Mild infection	102	92.7
Moderate infection	8	7.3
Severe/critical infection	0	0
ICU admission	0	0
Mechanical ventilation	0	0
Death	0	0

Table 4: Practices followed by healthcare workers before getting infection (n=110)

Practices followed by HCWs	Parameter	Number	Percent
Undertook COVID- 19 training	Yes	70	63.6
	No	40	36.4
HCQ prophylaxis	Yes	78	70.9
	No	32	29.1
Experienced breach in PPE	Yes	2	1.8
	No	108	98.2
Buddy system followed	Yes	74	67.3
	No	36	32.7
Social distancing at work	Yes	72	65.5
	No	38	34.5
IPC practices	Yes	66	60
	No	44	40
Quarantined previously	Yes	2	1.8
	No	108	98.2
Place of quarantine after testing positive	Home	74	67.3
	Hospital	36	32.7

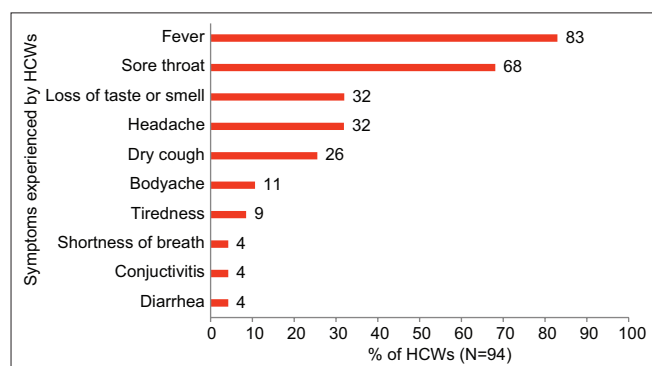


Figure 1: Distribution of symptoms experienced by the HCWs (N=94)*

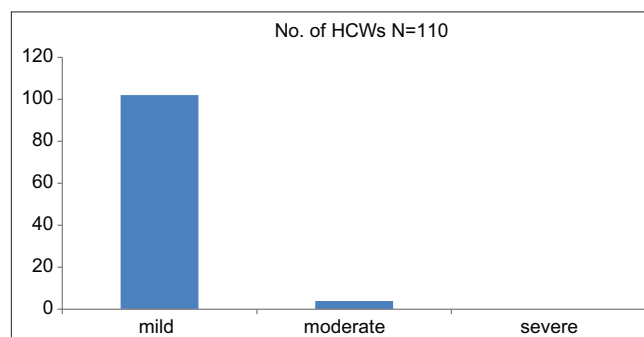


Figure 2: Severity of infection of HCWs

Table 5: Comparative evaluation of findings of extant study with other recent reports on HCWs worldwide

Author/ Year	Country Type of study	Duration/ sample size	Outcomes measured	Results
Chatterjee <i>et al.</i> May, 2020 ^[22]	India, cross sectional study	8-23 rd May, 2020/624 cases, 549 controls	Place of work, HCQ intake, use of PPE, procedures conducted	Endotracheal intubation has higher risk of infection, HCQ intake & use of PPE is associated with less chances of infection
Maskari Z <i>et al.</i> ^[23]	Oman, cross sectional descriptive study	March 18- July 11, 2020/204 HCWs	Demographic data, acquisition, symptoms & clinical outcome	Incidence- 4.3%, test positivity- 21.2%, community acquired- 61.3%, Fever and acute respiratory infection- 44%
Ran <i>et al.</i> ^[15]	China, retrospective cohort study	January, 2020/72 HCWs	Demographic factors, contact history, risk factors, symptomatology	Most common symptom-fever, cough Maximum Relative risk is with contact history with household member- 2.76 Improper PPE, failure to follow IPC practices, higher working hours were risk factors.
Fusco <i>et al.</i> ^[20]	Southern Italy/ cross sectional surveillance study	March- April, 2020/115 HCWs	Presence of COVID-19 infection, or probable previous infection	Overall prevalence of current/probable previous infection was 3.4%, Half were nurses, and those working in emergency
Lai <i>et al.</i> ^[24]	China/ single centre case series	January 1 st - 9 th February/110 HCWs	Infection risk, clinical characteristics of HCWs with COVID-19, possible prevention measures.	Infection rate of 1.1%, 0.5% among first-line HCWs while 1.4% among non-first-line HCWs, 84.5% with COVID-19 had non severe disease, fever was most common symptom.
Sheeba <i>et al.</i> (Present Study)	India, prospective study	April- September, 2020, 110 HCWs	Incidence, Ctv of RT-PCR, risk factors, symptomatology, management & outcome, behavioural modifications	Incidence-15.13%. Mean Ctv of RT-PCR- 28.03; Symptomatic-94 HCWs, amongst which 40% were nursing officers. 76% got infected in Non-COVID wards; Key risk factors were-Non-compliance with IPC practices (40%), lack of social distancing (34.5%)

conducted among HCWs in OBGY department over 6 months revealed a prevalence of 15.13%, which is very much higher than the ICMR and WHO estimates (reporting a pooled prevalence of 4.13% among HCWs).^[16,17] A recent cross sectional study by Sabetian *et al.*^[18] also reported an infection rate of 5.62%. It is even higher than the work done in Italy (3.4%) and Netherlands (9%), and at par with the findings of Keeley *et al.* in UK (18%).^[19-21] These diverse results in incidence when compared to previous data is due to the limited testing of only symptomatic persons/asymptomatic high-risk contacts of SARS-COV-2 positive patients/HCWs according to MOHFW guidelines. India has still not implemented policy on regular testing and monitoring of HCWs in Covid-19 facilities. This in turn implicates higher spread among HCWs if by any chance, one has contracted the SARS-COV-2 and indirectly affecting the patients and community. Besides, a report of WHO states that at least 60-80% of SARS CoV-2 positives are asymptomatic carriers who have the propensity to spread the virus, which applies to HCWs in OBGY department.

Forty percent affected being nursing officers (40%), can be attributed to prolonged close contact with patients while dispensing nursing care to them.^[13-15,19-21] Also, this can be due to less application of scientific reasoning while delivering the care by them. Higher number of cases among HCWs posted in non-COVID wards (76%) is in congruence with the few previous conclusions.^[19-21] This can be postulated by HCWs posted in COVID wards following IPC practices more stringently as compared to the ones serving the non-COVID wards. The second possible explanation could be majority of HCWs residing in homes with their families (40%), as the infection could

have been transmitted by their household members. Another reason could be the presence of asymptomatic carriage of SARS-COV-2 in patients attending the non-COVID wards, who could have transmitted infection to the HCWs because of their unknown status. Also, HCWs might have been lenient for taking precautions/following standard norms in non- COVID wards.

Fever surfacing as the most common symptom was in agreement with other previous reports^[15,19-21] A meta-analysis done by Gholami *et al.*^[25] also shows that the most common symptom was fever in 27.5% followed by cough in 26.1%. The number of cycles required for SARS-COV-2 to amplify and reach a detectable level is called cycle threshold. The mean Ctv was 28.03 which is similar to other studies.^[26] Early reports showed that lower Ctv is associated with both increased severity of the disease and infectivity but the later studies refutes as there is no standardization and the values can alter with differences in specimen collection.^[26]

ICMR has proposed prophylaxis with hydroxychloroquine (HCQ), albeit with limited evidence.^[16] However, the HCQ prophylaxis in current study played no major role in infection prevention alike few previous systematic reviews that have pointed out lack of clinical data to support use of HCQ and its efficacy.^[27,28] Although HCQ did not prevent the infection, among the 8 HCWs with moderate symptoms, none of them required high oxygen therapy highlighting that HCQ prophylaxis might have a role in decreasing the severity of COVID-19. All the infected study personnel took vitamins and the eight members with moderate infection were given steroids. However, certain aspects like hand hygiene, minor breach in PPE was often neglected which was

not reported to nodal officer/HOD in time and social distancing outside work place could not be explored in the current study. Moreover, longer working hours results in less time for personal space and relaxation. Maintaining social distance at all times while working in the hospital is practically not always possible owing to long working hours during clinical rounds, eating at staff canteens, and refreshment breaks with colleagues when they remove their masks. Thus it's evident that the protocol for breaking chain of COVID-19 transmission was not followed perfectly among HCWs. So, more stringent training drills, along with explaining the morbidity of COVID-19 including brain fogging and post COVID sequelae should be undertaken. India has already surpassed the third wave of COVID-19, and the increasing case load, along with ongoing casualties in HCWs has created a shortage of staff especially in urban areas, thus quarantine period has been minimized to meet the needs of increased patient load both in COVID as well as NON-COVID wards.

This COVID-19 outbreak has impacted the psychological and mental health of HCWs as they are the frontline warriors.^[29] A systematic review has reported depression (50.4%), anxiety (44.6%) and difficulty in sleeping among 34% HCWs.^[29] They are afraid to contact their family and friends due to the risk of exposure. In the current study also, HCWs were afraid of infecting their families and meeting friends. However, none of the HCW sought psychological support or any counselling service. Thereby, mental health of HCWs is another crucial aspect that needs to be considered for better productivity in terms of battling COVID-19, and post-COVID clinics should be started manned by multidisciplinary clinicians including psychiatrists.

More than half of the infected HCWs had taken IPC practices and PPE lightly thinking that they became immune to the virus. At the same time, fear of meeting family and friends was present in all of them owing to the fact that there can be a minute chance of infecting their dear ones even after quarantine. This pandemic has definitely created a panic among both the common people and HCWs across India. There were many incidents where HCWs were abused openly.^[30] Our study showed that 10.9% faced verbal abuse from society but the actual number might be even higher as we interviewed only SARS-COV-2-infected HCWs. Quintessential is to allay this fear and evade this stigma currently rampant in the mind-set of the entire nation.

Institutions should be able to accept feasible working hours of their working force and at the same time, equal distribution of work which helps in maintaining their physical and mental health. Also, prolonged working hours in PPE can lead to skin-related problems.^[15] A little pat on the back gives motivation for the HCWs to work better which can be done giving incentives and performance certificates. Screening of all women being admitted in our department and rotational screening of all HCWs before start of COVID posting has been implemented by considering the suggestions given.

Strengths and limitations

It is one of the pioneer large-scale research undertaken to explore the extent to which the HCWs in the OBGY department follow the prevention protocol of COVID-19. It enabled us to identify which key areas need to be targeted for preventing disease transmission among HCWs. There was a highly active surveillance undertaken in the department to thwart the chain of transmission by timely isolation and quarantine of suspects and treatment of infected ones following early testing. However, many HCW engaged in contractual posts in the department were not reporting their symptoms due to fear of losing their jobs. Despite the active surveillance, it wasn't possible to differentiate between nosocomial infections or community-acquired COVID-19. A sufficiently powered case-control study could be a better way of exploring predictors or risk factors that determine the SARS-COV-2 status of HCWs.

Conclusion and Recommendations

Although initial lockdown gave adequate time for COVID preparedness, there is still a high patient-doctor ratio that should be taken care of. Correct and consistent attitude towards applying knowledge in patient dealing and IPC practices are required to prevent SARS-COV2 transmission among HCWs in the department even during times of slogging. Routine testing of HCWs before the start of posting and targeted vaccination of all HCWs in COVID facilities is required. Taking a leaf from suggestions given by the study populace, we recommend the segregation of COVID and NON-COVID healthcare facilities for optimal utilization of health resources and delivering adept patient care. Quality control measures should be undertaken by formulating separate teams to monitor HCWs on a daily basis, conduct periodic audits to identify and thereby prevent breach in PPE, and give SMART recommendations to improvise on preventive strategies. Till an effective vaccine is administered, Social distancing norms both inside and outside the department ought to be strictly followed by the HCWs. Psychosocial counselling for all HCWs irrespective of their SARS-COV-2 status to cope up with these hard times. Larger, Multi centric studies are required to validate our results.

Summary

This is the first and largest study done exclusively on the HCWs infected with SARS-COV-2 in the Department of Obstetrics and Gynaecology. The infectivity rate amongst 727 HCWs working in the Department was 15.13%. Mean C_{tv} of RT-PCR was 28.03. Most HCWs were symptomatic ($n = 94$) with mild infection; working as nursing officers (40%). The predominant symptom reported was fever in 83% of infected. Majority HCWs acquired the virus while working in non-COVID wards (76%). Non-compliance with IPC practices (40%) and lack of social distancing (34.5%) were key risk factors Observed. The study thus emphasized that COVID appropriate behaviour should be followed by HCWs both in the hospital, and out of the hospital. All HCWs, and especially those posted in labour wards should

use adequate PPE. During the pandemic, all HCWs should be provided with adept psychosocial support to cope up with the exigencies and hardship of duties in both COVID and non-COVID areas of the department. This in turn will ensure their mental well-being during these testing times.

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Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Key Message/highlight of the present study

There is a scarcity of literature on COVID-19 in HCWs in the OBGY department. It is one of the preliminary researches worldwide to gauge the incidence of SARS-COV-2 in HCW in OBGY (and infectivity), clinical presentation, risk factors which led them to contract the virus, and consequent change in behaviour, besides exploration of reasons of increased infectivity rates in HCWs in OBGY department. It thus enabled us to identify which key areas need to be targeted for preventing disease transmission among HCWs.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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