Final Technical Report

for

Research Project

Evolving Epidemiology of Long Haul COVID in Rajasthan- A Cohort Study

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Disclaimer

The final technical report is submitted by the research on completion of a research project funded and sponsored by WHO regional office for South-East Asia and the WHO country offices in the South-East Asia Region. The final technical report publishes preliminary and unpolished results and aim to provide a vehicle for early access to research finding to maximize their use for informing policies and programs. The reports have not been edited, proof-read or peer reviewed, and have been published as presented. The findings, interpretations, and conclusions expressed in the final technical report are entirely those of the author(s) and should not be attributed in any manner to the World Health Organization, or to its affiliated organizations. Citation and the use of material presented in the final technical report should take into account this provisional character. The sponsoring technical team and author(s) bear full responsibility for the quality of the technical contents and presentation of material in the series.

Summary Technical Report

('Evolving Epidemiology of Long Covid in Rajasthan: A Retrospective Study.')

The study was titled, 'Evolving Epidemiology of Long Covid in Rajasthan: A Retrospective Study.' The study was conducted in collaboration with the Rajasthan State Health Society, AIIMs Delhi, Khushi Baby Rajasthan, with technical and funding support from WCO India. The Rajasthan WHO-NPSP provided field support in the study.

Background

At the time of designing the study, COVID-19 pandemic had already affected more than 520 million people and killed 6.2 million worldwide. The first case of COVID-19 in Rajasthan was reported in March 2020. After recovering from acute phase, patients experienced a wide range of symptoms collectively termed as Long COVID or post COVID-19 condition or Long COVID, the implications of which are a growing concern. Long COVID significantly impacts morbidity and mortality as it often involves multiple organ systems.

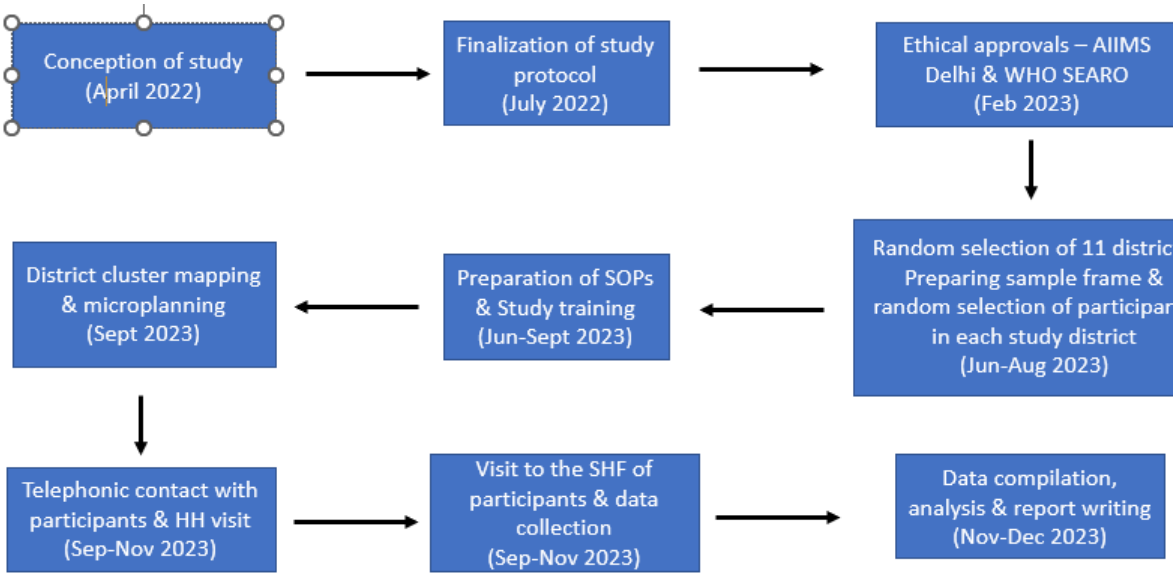
The present study was conducted with the primary objectives to estimate the proportion of COVID patients developing Long COVID, to characterize the clinical features of Long covid, to assess the association of risk factors like co-morbidities, disease severity etc. on Long COVID and to compare the occurrence of Long COVID in different time periods (Delta wave and Omicron wave)

Methodology

The study was planned to be retrospective study of participants in the selected eleven districts of Rajasthan state. Participants were selected based on health records suggestive of COVID-19 positive lab test report or CT findings. All cases of COVID-19 diagnosed between 1 April 2021 and 31 March 2022 were considered for enrollment. Data on initial COVID and long COVID status was collected from the date of diagnosis of COVID till the date of enrollment in the study. The study was conducted in 11 districts of Rajasthan as shown in the map below.

The total sample size per district was 175 giving a total of 1925 participants to be enrolled in 11 study districts of Rajasthan.

Study Flow Chart



Microplanning

Preparation of sample frame for each district was done using the line list. From the sampling frame, list of randomly selected participants was prepared from each district.

Number of clusters according to the districts:

Name of District	Number of clusters	Number of SHF
Bharatpur	11	11
Bikaner	10	7
Bundi	8	8
Dholpur	8	5
Jaipur	15	15
Jaisalmer	12	12
Jhalawar	7	7
Pratapgarh	9	8
Rajsamand	10	8
Sawai Madopur	10	8
Udaipur	12	12

Contacts with Participants

DISTRICT	NO. OF PARTICIPANTS IN CLUSTER	GREEN CLUSTER						ORANGE CLUSTER						RED CLUSTER						DEATH CASE
		TOTAL CALL	ENROLLMENT	NOT AGREED	UP TO FAMILY/ WAITING /AGREED NEXT DATE	NOT CONNECTED/WRONG NO./SWITCH OFF	OUT OF DIS./STATE	TOTAL CALL	ENROLLMENT	NOT AGREED	UP TO FAMILY/ WAITING /AGREED NEXT DATE	NOT CONNECTED/WRONG NO./SWITCH OFF	OUT OF DIS./STATE	TOTAL CALL	ENROLLMENT	NOT AGREED	UP TO FAMILY/ WAITING /AGREED NEXT DATE	NOT CONNECTED/WRONG NO./SWITCH OFF	OUT OF DIS./STATE	
UDAIPUR	175	175	73	26	10	30	31	195	57	19	36	40	42	112	24	8	22	20	30	9
PARTAPGARH	175	174	86	35	4	34	17	163	60	35	6	35	27	39	27	3	0	7	2	2
RAJSAMND	175	162	73	28	4	33	23	161	65	36	4	33	19	64	25	10	3	21	18	7
BUNDI	175	175	49	17	11	26	27	161	44	24	8	24	33	26	9	2	1	4	5	5
JHALAWAR	175	171	77	29	13	19	33	171	62	36	19	24	26	93	36	19	17	10	9	5
BHARATPUR	175	170	84	8	10	42	26	156	61	4	11	42	31	31	17	0	0	7	7	3
BIKANER	175	175	67	25	7	40	30	142	42	39	6	28	23	129	35	34	5	26	29	3
DHOLPUR	175	175	91	30	2	34	26	98	59	21	9	13	8	36	16	7	1	11	3	3
JAIPUR	175	177	66	49	11	31	15	217	41	64	4	55	41	177	38	0	8	19	12	2
SAWAIMADHOPUR	175	175	76	35	3	36	25	150	66	28	2	28	25	68	34	9	1	13	12	3
JAISALMER	175	175	58	25	13	52	21	157	72	23	12	26	27	65	25	5	2	18	12	2
RAJASTHAN	1925	1904	800	307	88	377	274	1771	629	329	117	348	302	840	286	97	60	156	139	44

Results

Demographic details, Long Covid Study - Rajasthan (N=1927)

Parameter	Frequency (%)
Gender	
Male	1256 (65)
Education	
Below Primary	308 (4)
Primary	278 (8)
Secondary	333 (14)
Higher Secondary	253 (15)
Graduate	427 (31)
Graduate & above	328 (28)
Smoking before covid	
Yes	158 (8)
Current smoker	
Yes	128 (6.7)

Parameter	Frequency (%)
Alcohol use before covid	
Yes	160 (8.3)
Current Alcohol user	
Yes	135 (7)
Hospital admission before Covid	
Yes	115 (6)
No	1781 (92.4)
Received Covid Vaccine	
Yes	1769 (91.8)
Doses received (N=1769)	
1 dose	85 (4.8)
2 doses	1521 (86)
3 doses	158 (9)

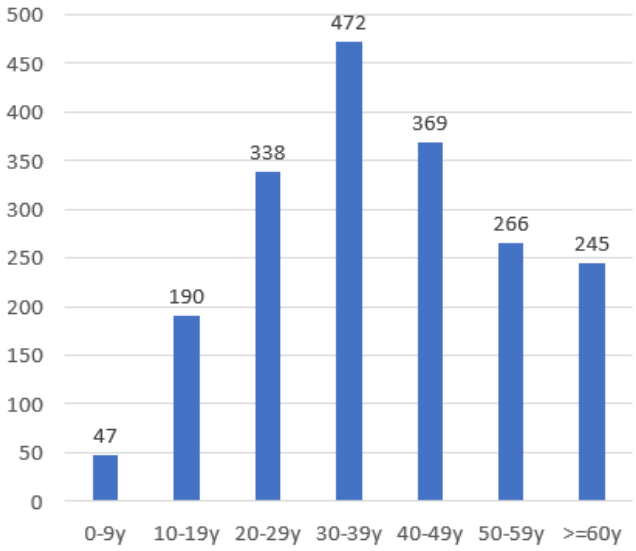
Results, Long Covid Study - Rajasthan (N=1927)

Parameter	Frequency (%)
Pregnancy	
Yes	20 (3)
Pregnancy outcome	
Live birth	18 (90)
Miscarriage	2 (10)
Acute Symptoms	
Yes	1295 (67)
No	512 (26.6)
Treatment received	
Yes	1599 (83)
Antibiotic received (N=1599)	
Yes	1389 (86.9)

Parameter	Frequency (%)
Pre covid existing conditions	
Hypertension	124 (6.4)
Diabetes	69 (3.6)
Obesity	45 (2.34)
Chronic heart disease	22 (1.1)
Chronic lung disease	21 (1)
Tuberculosis	16 (0.8)
Chronic neurological disorder	8 (0.4)
Mental health condition	8 (0.4)
Cancer	4 (0.2)
Chronic kidney disease	3 (0.16)
Asplenia	1 (0.05)
Chronic liver disease	0 (0)

Age Group wise number of participants (N=1927)

Age Group	Frequency	%
0-9y	47	2%
10-19y	190	10%
20-29y	338	18%
30-39y	472	24%
40-49y	369	19%
50-59y	266	14%
>=60y	245	13%



A detailed univariate and multivariate analysis will be later.