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Status of adherence to national guidelines for Home Isolation amongst COVID -19 cases in a rural area of Haryana

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ABSTRACT

The COVID-19 pandemic, surged ahead in 2020 infecting large number of persons across nations and precipitating unprecedented burden on the health system especially in the developing countries. The policy of "Home Isolation" was adopted and guidelines issued by the Indian Council of Medical Research (ICMR) in May 2020 for inland citizens in India, a move taken timely to free the hospital beds ,manpower and the resources for the moderate and severe cases, without being a cause of harm to the mild and the asymptomatic cases . The objective is to describe the status of compliance of the "Home Isolation guidelines" for COVID-19 positive cases and identify issues if any . A descriptive cross-sectional study. The sample consisted of all the positive cases (253) enrolled with a primary health centre during a period of three months in 2021. A structured interview schedule developed and finalised after pretesting and administered by phone call to the positive cases. by three trained interviewers , after obtaining verbal consent from the interviewee. All the 253 patients were contacted thrice but only 214 co-operated to give the full interview and respond to all the questions of the investigators. All the study subjects 214 had been advised home isolation as per ICMR guidelines after testing positive by RT/PCR, by the health staff. The patient and the family members were asked to follow the instructions given by the health staff . A health staff made phone calls to the family members every day to enquire about the positive case's health during the period of isolation . Cases asked to maintain record of the temperature daily , to measure SPO2 twice a day and if the reading went below 94% or developed breathlessness or pain in chest, or deterioration in the health condition occurred ,to immediately inform the health staff .The mean age of the 214 patients was 32.1 years (SD +/-10.1) with 81 % between 20 to 39 years. Males exceeded the females as cases 72 % vs 28%..Amongst the cases 12% were asymptomatic while majority (81%) below 40 years had mild symptoms .Commonest symptom was fever in (62%) followed by cold , cough and sore throat 23% in all age groups . Females had less symptoms than males. The average number of symptoms was 0.93 per female compared to 1.15 for per male, the difference being significant chi sq 21.69 (p< 0.05) . Hospitalisation needed for 6 patients (3%) with two deaths due to hydrothorax . Secondary cases observed in 21(10%) subjects .Families residing in one room and using the same toilet were 20% while the rest had 2-4 rooms in the house with two toilets. Majority 81 % used the cloth mask.. Majority of the households 88% used alcohol based sanitizers, along with soap & water. Guidelines not given for post isolation sanitation .The strategy of Home Isolation is useful. Issue of post isolation sanitation guidelines and regular communication will prevent secondary cases amongst contacts.

Key Words: Covid -Home isolation guidelines, , compliance ,India.

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INTRODUCTION

The COVID-19 pandemic which had been declared a Public Health Emergency of International Concern (PHEIC) by WHO on 30 January 2020, surged ahead infecting large number of persons across nations and precipitating unprecedented burden on the health care system especially in the developing countries. Every country framed strategies based on accumulated knowledge from prompt research on this novel virus . The highly infectious COVID-19 with air and fomite borne modes of transmission necessitated isolation and quarantine as the chief modes of prevention. The clinical picture of the Covid-19 affected individuals presented with varying gradients of intensity ranging from the asymptomatic to severe illness requiring hospitalization and for some could end in death.[1] As the cases increased globally the sheer number challenged even the best of health systems available in the developed countries to provide medical care and isolation facilities to all the loads of cases. At the beginning of the epidemic the government of India also issued guidelines for isolation of cases in Community Care Centers but had to abandon the idea when positive cases started complaining about the facilities provided by government and

many left them to return home.[2,3] The practice of isolation had been started in USA as advocated by Centre for Disease Control (CDC). Based on scientific evidence the infected subjects were advised a 14-day period of isolation for both the cases and the contacts by the authorities.[4]. Taking cue from there in March 2020 one of the steps taken by the Indian government, was the Home Isolation guidelines issued by the Directorate General for Disease Surveillance & Control and these became applicable to the international travellers . The order specified that any infected or exposed person who has symptoms or not, but not requiring admission in the hospital should be under isolation to prevent transmission . The preferred place of isolation was to be home unless sent elsewhere. Thus the international travellers who were mild or asymptomatic were assigned to "Home isolation" following the rules laid down in the guideline.[5] As the pandemic advanced in 2020 so the number of cases , of whom majority were mild or asymptomatic [1] thus the policy of "Home Isolation" was adopted and guidelines issued by the Indian Council of Medical Research (ICMR). " in May 2020 for inland citizens. Guidelines since then has been updated thrice , in July 2020 , April 2021 and finally in January 2022 [5, 6 7] The document gives details regarding who are eligible for isolation , the precautions to be taken to curb the transmission of COVID-19 to others in the family , instructions to the Care Giver for safe handling of the case , methods of sanitization , when to seek medical help and from whom based on the signs & symptoms , and when to end the isolation. Besides the guidelines, a health staff was allotted to enquire on daily basis by phone about the health status of the case during the whole period of isolation and in case the condition deteriorated the health staff would arrange for an ambulance to be taken to the hospital [5, 6] So the decision for "Home Isolation" was a judicious move taken timely to free the hospital beds ,manpower and the resources for the needy, without being a cause of harm to the mild and the asymptomatic cases . The advantage of Home Isolation has been proved to be cost effective besides demonstrating socially and psychologically more beneficial to the patient compared to isolation in a hospital as inferred in a study in Jodhpur.[8] Given the highly infectious and unpredictable nature of the COVID-19 disease the strategy of "Home Isolation" meant shifting the responsibility of care and support of the positive COVID-19 cases into the hands of the common man with added accountability of preventing infecting others present in the household. Though detailed guidelines by ICMR [5,6,7] are in place, studies are lacking about the implementation of the guidelines inside the Indian homes. The current study is an effort to fulfil this gap and identify issues if any.

The Objective of this paper is to describe the status of implementation of the "Home Isolation guidelines" for COVID-19 positive patients undergoing Home Isolation and identify associated issues if any in a semiurban area of Gurgaon Haryana .

MATERIAL AND METHODS

A descriptive cross-sectional study was conducted in a semi urban area of Gurgaon district amongst Covid-19 patients tested positive by RT-PCR who had undergone "Home Isolation" during positivity for a period of 14 days . The study area was Maneshwar tehsil in Gurgaon district. The sample consisted of all the positive cases (253) enrolled with primary health center during the three months ie (January to March 2021). A structured interview schedule was developed and finalised after pretesting on 30 patients, not from the study area, to test the implementation of the as per the directive of the ICMR home isolation guidelines.[6] The variables studied were grouped as advice given by the medical doctor of PHC , socio demographic profile, signs and symptoms, any complications during the 14 days isolation period of the positive cases, preventive practices adopted by the caregiver and the family members. Data collection was done through telephonic interview by three trained interviewers using a structured interview schedule to elicit information , after explaining the study purpose and obtaining verbal consent from the interviewee. All the 253 patients were contacted thrice to complete the schedule. In some cases members of household gave the answers to the enquiries along with the patient. Out of the total of 253 patients contacted , only 214 co-operated to give the full interview and respond to all the questions of the investigators Sttistical analysis. Data was entered in Microsoft Excel and transported to SPSS version 26 for analysis. Descriptive statistics such as percentage proportions, mean and standard deviation were calculated and chi sq test applied for deriving association between variables.

Ethical approval

Ethical clearance was obtained from the Institutional Review Committee (IRC) of the Faculty of Medical &Health Sciences SGT Medical college , Hospital and Research Centre. Informed consents were taken from the participant before inclusion in the study, and confidentiality was maintained throughout.

RESULTS

All the study subjects 214 had been advised home isolation as per ICMR guidelines after testing positive by RT/PCR, by the health staff from the office of the Civil Surgeon of district Gurgaon. The patient and the family members were asked to follow the instructions given by the health staff . No document on guidelines

was handed to the Covid-19 positive case's family members , but advised verbally about the precautions to be taken at home to prevent further spread of infection by COVID-19. A health staff made phone calls to the family members everyday to enquire about the positive case's health during the period of isolation . Advice was given to the case , to maintain record of the temperature daily , to measure SPO2 twice a day and if the reading went below 94% or developed breathlessness or pain in chest, or deterioration in the health condition occurred ,to immediately inform the health staff or ANM so that arrangement for an ambulance for transport of case to the hospital could be promptly made.

Sociodemographic characteristics of the COVID-19 positive cases.

The mean age of the 214 patients was 32.1 years (SD +/-10.1) with majority 81 % between 20 to 39 years. Males exceeded the females as cases 72 % vs 28%. . Sixty percent of them were educated as graduate and above. Illiterate patients were 16% (Table 1).

Table 1. Sociodemographic characteristics of COVID-19 positive cases

Sociodemographic characteristics	Frequency	Percentage
20-29 years	110	51.4
30-39 years	63	29.4
40-49 years	22	10.3
>50 years	19	8.8
Female	60	28.0
Male	154	72
Illiterate	34	15.9
Till 5th class	12	5.6
Till 8th class	9	4.2
Till 10th class	4	1.9
Till 12th class	26	12.2
Graduate	107	50.0
Professional	22	10.3
Base Total	214	100

Clinical profile of positive cases --The patients under "Home isolation" were with none or mild respiratory symptoms as per the guidelines for keeping positives at home. The advice given by the health staff for regular assessment and record of fever, SPO2 by the case himself using the Pulse Oxymeter and intake of drugs as per the doctor's advice. They were asked to keep in touch with the health system by responding to all queries made by them through phone call. Any deterioration in the condition was to be reported promptly and be shifted to the hospital.

Amongst the patients 12% were asymptomatic while majority (81%) below 40 years had mild symptoms .Commonest symptom was fever in (62%) followed by cold , cough and sore throat 23% in all age groups . Females had less symptoms than males except loss of taste and smell which was predominant in females. The average number of symptoms was 0.93 per female compared to 1.15 for per male, the difference being significant chi sq 21.69 ($p< 0.05$)

Complications: Hospitalisation during isolation period was needed for 6 patients (3%)and prompt provision of ambulance was done by the health staff. Two deaths occurred due to hydrothorax amongst male cases above 60 years with comorbid condition of diabetes. Another two suffered from typhoid but recovered .A pregnant lady delivered a dead baby and the 6th case was admitted with breathlessness but recovered and returned home

. Secondary infection occurred in 21 (10%) households and of these, 61% households had no separate washroom for the positive cases.

Housing facilities : Families residing in one room and using the same toilet were 20% while the rest had 2-4 rooms in the house with two toilets. Six positive cases from outstation were identified on contact tracing and had to undergo isolation by staying in rented rooms for 14 days.

Advice to households for prevention of infection. Advice regarding isolation of cases and quarantine of household members to prevent transmission was given by the medical doctor followed by the health worker to the patients' household members at the start of the isolation period of 14 days. Details regarding social distancing, use of mask, hand washing, managing the patient by adopting the disinfection practices of use of soap water & detergents for cleaning of utensils after feeding and to wash clothes with warm

water and detergents. , were elaborately explained. The list of advice did not specify disinfection practices for the isolation room used by the positive case after the period of isolation was over.

Use of mask :Majority 81 % used the cloth mask at home which was washed in two to three days and reused. The guideline of using a triple layered medical mask meant for one time use, and disposing it on the same day, was followed by only (15) 7 % of the attendants. Few families 12% were using N95 mask for self and cases.

Hand hygiene : Frequent washing of hands for 40 seconds each time was not practiced amongst the household members of the positive cases.. Hands were washed with soap & water only after toilet use, before eating or any other time if the hand became dirty. Sanitizers were used for hand cleaning by the 67%care giver during interaction with the positive case .

Sanitation practices :Sodium hypochlorite solution for disinfection as per guideline was not available in any home. Majority of the households 88% used alcohol based sanitizers available in the market, along with soap & water. Those educated till intermediate and above used sanitizers more than those less educated ,the difference being significant ($p<0.05$) The patients washed their own clothes in 67 % cases using soap or detergent powder.The used utensils were cleaned with or soap & water, while 13 % families used disposable plates & glasses for the cases during the isolation period. Those educated till intermediate and below , majority (76%) in them used soap & water or phenyl for disinfection, the preference changed to use of sanitizers along with others amongst those educated till graduate and above . Sanitization of the toilet especially the surfaces and the door handles were not considered important for disinfection by 54% families though using same toilet.

Post isolation sanitation of the isolation room– were not specified by the doctor or the health staff to the family. Forty four families did not do any sanitization of the isolation room after the end of the isolation period .There are no instructions given in the ICMR guidelines regarding the sanitation of the room where the patient was staying during isolation.

DISCUSSION

The management of the COVID-19 epidemic was done in the context of the nature of epidemic there and the available resources. WHO issued a comprehensive document detailing the epidemiology and management of the pandemic. [1] Countries adopted strategies considering the national and regional context. The Indian government made all efforts to slow down transmission and prevent mortality within the available resources and Home Isolation measure was a step in this direction [9].The adoption of the Home Isolation strategy by India has proved to be a boon for the cases , the households and simultaneously for the health system , especially in a nation with a large population base and absence of good health infrastructure across the country. Home isolation has been well accepted by the general population and guidelines are followed as per the facilities available and the perceived threat to the case and the family.The concern arises for those families living in one roomed houses and trying to maintain the preventive practices as per the guidelines, but refuse government facilities such as the Community Care Centres for isolation.

As per the guidelines all with none or mild respiratory symptoms were advised isolation of cases and quarantine of family members As reported globally [1] fever was the commonest symptom reported by 62% concurring with the observations made by other researchers from India[9]. Nearly 81% were below 40 years . Females were more likely to have mild or asymptomatic disease compared to males as observed globally[10] During the period of 14 days of Home isolation only 6 cases (3%) required hospitalization of whom 4 recovered but two deaths occurred , same as in another study [11] but 10.5% amongst asymptomatics progressing to moderate or severe illness have been studied , in an isolation facility from southern India.[12] Old age with comorbidity is an important risk factor for fatal outcomes in COVID-19 patients observed in many studies was demonstrated in this study too.[1,9 ,12]

The disinfection practices, use of masks and maintaining distancing and hand washing are not fully followed as per guidelines , as each household is not socioeconomically empowered to implement the advice given by the health staff fully especially the availability of more number of rooms or toilets. Apparently the inability to observe the stringent measures for disinfection have resulted in secondary cases in 10% (21) households, the observation similar to the 4—10% probability of risk amongst contacts reported in another Indian study .[13]

The disinfection guidelines were being followed by approximately 86% cases and the use of sanitization material varied from soap & water , alcohol based sanitizers to phenyl and commercial sanitization. Transmission of COVID-19 virus through surfaces causing infection was emphasized by the health staff still sanitization of the toilets especially the surfaces and the door handles were not considered important for disinfection by 54% families, using the same toilet. Secondary infection occurred in 21 (10%) households and of these, 61% households had no separate washroom for the positive cases. COVID-

19 virus particles found outside self isolation rooms[14] raise the probability of transmission of infection in household contacts . The use of masks were also as per the convenience of the household members and majority could afford only cloth reusable masks.

A major gap in the ICMR guidelines inferred from the study is the absence of post isolation sanitization guidelines for the isolation room at homes .As a consequence ,forty four families did not do anything and the rest washed the floor with soap & water only with no disinfection of the other items in the room or surfaces. There are no studies to indicate the risk of infection through the non sanitization isolation rooms after the 14 days isolation period is over.

Conclusion. The strategy of Home Isolation with issue of updated guidelines regularly point to the measures taken by the government of India to safeguard the health of the public, and the community is following it though with constraints .Issue of post isolation sanitation guidelines and regular communication , will lead to less secondary cases and better outcomes.

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