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SARS COV 2- A QUANTITATIVE STUDY ON PREVENTIVE HEALTH BEHAVIOR OF CARETAKERS OF ELDERLY IN NORTHERN INDIA

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ABSTRACT

Background: SARS COV-2(severe acute respiratory syndrome Corona Virus -2), global pandemic has engulfed the whole world causing major health and economic consequences. All segments of population are affected with Elderly at a higher risk of being susceptible to it due to compromised immune system. In regards to its increased virulence and none vaccine available till date, the only saving modality at present observing safe practices to mitigate its spread. **Objectives:** To assess the knowledge and preventive health practices of caretakers of elderly regarding SARS COV-2. **Study Design**: Cross sectional study **Methods-** This cross sectional web based study was done from June 22nd to 27th. By non probability snow ball sampling technique 208 participants were included. The data was collected online by Google forms. Participants included were those who had some elderly in their house or were taking care of an elderly. The questionnaire on Google forms consisted of socio demographic profile and assessment of knowledge along with practices for managing elderly against Covid. Data was collected and analyzed using percentages. **Results:** A total of 149 subjects out of 208 (71.6%) were aware of the term "social distancing" and 88.5% knew that elderly are at higher risk of contracting SARS COV-2 infection as compared to others. 91.3% were aware that unnecessary visits to market should not be done. 73.6% caretakers of elderly did not mix their clothes with others and sanitized their door knobs. Only13% were aware of the national emergency helpline numbers (police, ambulance etc.). **Conclusion-** The caretakers of elderly possessed limited knowledge about the SARS COV-2 and preventive safe practices.

KEYWORDS: Knowledge, Practices, Elderly, caregivers, SARS COV- 2, India.

INTRODUCTION

SARS Cov 2 pandemic, with its exponential infectivity has gripped the whole world and led to an unprecedented state of emergency. Globally 21.2 million are infected and 765 thousand have died affecting 212 countries till 15th Aug.[1] The corona virus is decimating the whole world quietly and savagely. The comprehensive statistical figures of morbidity and mortality depict that among all age groups, elderly are affected in a disproportionate and fatal manner. Data from varied badly hit countries corroborate to this fact. AWHO-China joint report on SARS COV 2 revealed fatality rate for people above 80 yrs as 21.9%,[2] And the figures so released by Chinese Centre for Disease Control(CCDC) showed that Covid mortality in elderly more than 70 yrs was around 22.8%.[3] As per WHO report, Corona virus swept through Europe,[4] killing 202717 people till 15th Aug, mostly in Italy, France and Spain. Out of these 95 percent deaths occurred in those older than 60 years and more than half aged over 80 yrs. In India, till 15th Aug, 2.5 million people were infected and of this 49 thousand people had succumbed to death.[5] As per latest age profile analysis report of Indian Health Ministry, Covid cases above 60 years of age were around 19% of total cases but account for 75% of the fatalities. Till 19th July, 10.3% deaths were in age group 45-60yrs, 33.1% in age group 60-75 yrs and 42.2% in age group more than 75 yrs.[6]

The elderly with pre-existing health conditions are even more vulnerable to get infected and die. In India elderly with co morbidities accounted for 83% of total deaths.[7] Dr Hanes Kluge, the WHO regional Director for Europe,[4] made a statement that four in five of those elderly people who died had at least one or other chronic

underlying conditions, like cardiovascular disease, hypertension, chronic kidney disease, cancer, immunocompromised disease or diabetes. The data in study done by Chinese Centre for Disease Control found that the case mortality rate was increased in elderly with pre-existing co-morbid conditions: 10.5 per cent for cardiovascular disease, 7.3 per cent for diabetes, 6.3 per cent for chronic respiratory disease, 6.0 per cent for hypertension, and 5.6 per cent for cancer.[3]

It is said that owing to physical and social reasons elderly are more at risk of getting infected. Physically, the immune system gets weakened by age, making it harder to battle with a new pathogen (virus in, corona disease) and becoming more susceptible to developing complications after contracting the infection. Another plausible reason so attributed to increased susceptibility for fatality is cytokine storm syndrome, in which there is more formation of immune cells in response to a new pathogen. The new immune cells attack the pathogen at its source (the lungs in case of covid) which leads to high inflammation, fever and organ failure.[8]

The proneness of affliction in elderly is stretching the already taxed health care system across the globe. This is a huge challenge faced by many nations. The overwhelming of elderly Covid cases in hospitals had caused more resource crunch. The increased resource crunch only led to an option of prioritization in allocating health care. Like in Italy, one of the worst hit countries, the excess elderly Covid cases developed the inadvertent choice of receiving substandard health care as compared to young cases.[9] Also in King County, USA, elderly patients were just receiving compassionate care i.e they were not candidates for the antiviral or ventilators even when in need.[10] And, if this crisis persists for long then they may be told to stay at home only. This situation would be the result of robustness of health system and also average age of country. The optional substandard health care to elderly has other side effects too. It has also impacted the mental health of many health workers. As it was extremely traumatic and inhumane to turn someone away from cared who might remind them of grandparents. On the other side, there was also an escalation in risk of number of workers getting exposed. In California, a single sick person was exposed to 200 health workers, so they had to self-isolate. And in this grim scenario, to lose a single health worker is a difficult task. So, the saving modality in this crisis is to embrace utmost preventive measures, lest elderly suffer of this deadly disease. Hence, this study was conceptualized to assess the awareness and practices so adopted by caregivers of elderly.

METHODOLOGY

Study Design and Sampling technique

This cross sectional web based study was done from June 22nd to 27th. As it was not possible to do a community based study during this crisis, hence data was collected online. By non-probability snow ball sampling technique, a total of 218 responses were received. As 10 forms had incomplete information, so were not included in the study sample.

Study Instrument and Participants

A self-designed questionnaire was developed taking help of WHO training material, Center for disease control Atlanta and Ministry of Health Website India, on SARS COV 2. It was subsequently pilot tested and adequate changes were made. The participants included those who understood English and had access to internet. Relying on author's network with local people, a questionnaire so developed was sent to groups on Google forms. The questionnaire contained a brief introduction on the background, objective, procedures, voluntary nature of participation, declarations of anonymity and confidentiality and notes for filling in the questionnaire. Participants were those who had some elderly in their house or were taking care of an elderly. Participants consent was taken beforehand for their willingness to participate voluntarily. They had to answer to a question yes or no to confirm their willingness to participate. After their confirmation of the question only, the participant was directed to complete the self-administered questionnaire and submit the response.

The questionnaire consisted of two parts: Socio demographic profile and awareness along with practices for managing elderly. Socio demographic profile included variables like age, gender, marital status, education, occupation, religion, dependency on caregiver, any co morbid condition etc. The second part of questionnaire consisted of their awareness of varied aspects of COVID and practices in taking care of elderly against it. The questionnaire had 17 questions for assessing socio demographic profile, 6 questions regarding modes of transmission along with presenting symptoms in elderly. And, 19 questions pertaining to practice towards covid disease. These questions were answered on a Yes/No basis. Confidentiality of the subject's responses as well as anonymity was assured.

Statistical analysis

Statistical analysis was performed by using statistical package for social sciences, SPSS version26. Data was presented as mean and percentages.

RESULTS

In the web based study so done among caretakers of elderly, 49% were males and 50.9% females. Most of them were married (58.6%).Around 52% were related to elderly as son followed by 34.6% as daughters. Majority, 62.9%, were either graduate or postgraduate. One third of participants were professional and almost 70% had income more than 30,000. More than half (55.3%) of caregivers had economic dependence of elderly on them. There were 75.5% elderly who were living in urban areas, 39.9% in joint family and 51.9% were suffering from chronic illness. Mostly (62.5%) caretakers were

Hindus with mean age of 35.2yrs (SD-11.9, ranged 13-79yrs).

Only 18.3% of caregivers were aware of correct time span of washing hands but 45.2% knew that on steel virus stays the longest. The concept of social distancing was known by 77.9%. That Covid is fatal to elderly was known to78.8% of participants especially those with co morbidities. The different covid symptomatology in elderly wasn't known by 87% of the participants. Only 10% were aware that the presentation could be a history of fall, speaking incoherently or forgetfulness. The awareness of the helpline numbers to be contacted in case of any covid emergency was known by only 13% of participants.(Table 1).

91.3% were not making unnecessary visits to market to avoid risk to elderly. At home 73.6% observed sanitizing their door knobs. The frequency of such regularity was 22.1% once a day, 15.4% twice a day, 6.7% every 2-3 hourly and majority (55.8%) were not regular. 88% elderly were informed by their care takers as regards wearing of mask correctly but only 18.3% were using either a fresh mask or washed cloth mask after each time they used it. Mobile phone was possessed by 159 out of 208 (76.4%) elderly and all of them talked to friends and relatives to avoid social isolation. But in those elderly who were not using phones only one fifth of the caretakers took effort to teach them about mobiles. It was found that 12.5% caregivers had stocked hydroxychloroquinine. But only 7.7% were aware of the side effects of it. Majority of the participants became aware of this drug by mass media (53.8%) and 34.6% by close relative. Only 11.5% became aware by health staff. (Table 2).

Table 1: Socio Demographic Profile of Caregivers of Elderly.

Variable Residence	**N=208 n**	**%**
Chandigarh	77	37.0
Panchkula	35	16.8
Mohali	38	18.3
Others	58	27.9
Gender		
Male	102	49.0
Female	106	50.9
Relationship with elderly		
Son	108	51.9
daughter	72	34.6
grandson/Granddaughter	21	10.1
Uncle/Aunt	7	3.3
Marital status of caregiver		
Single	56	26.9
Married	122	58.6
Widowed	19	9.1
Divorced	5	2.4
Separated	6	2.9
Education of caregiver		
Illiterate	-	
Primary	-	
Middle	3	1.4
Matric	29	13.9
Inter/diploma	45	21.6
Graduate	67	32.2
Postgraduate	64	30.7
Occupation of caregiver		
Professional	66	31.7
Salaried govt /private	49	23.6
Own business	25	12.0
Retired	12	5.8
Homemaker	22	10.6
Farmer	8	3.8
Others	26	12.5
Family income		
0-10,000	14	6.7
10,001-20,000	19	9.1

20,000-30,000	35	16.8
30,000 above	140	67.3
Economic dependence of elderly		
Independent	93	44.7
Partially independent	65	31.3
dependent	50	24.0
Religion		
Hindu	130	62.5
Christian	12	5.8
Sikh	46	22.1
Islam	12	5.8
Others	8	3.8
Residence		
Urban	157	75.5
Rural	37	17.8
Others	14	6.7
Family Type		0.0
Nuclear	105	50.5
Joint	83	39.9
Others	20	9.6
Language Known*		0.0
Hindi	86	41.3
English	51	24.5
Punjabi	55	26.4
Urdu	9	4.3
Others	7	3.4
Does elderly have any chronic illness		
Yes	142	51.9
No	56	48.1
If yes what type of illness		
DM	130	62.5
HT	123	59.1
CA	4	1.9
Bronchial Asthma	37	17.8
High Cholesterol	105	50.5
Joint Pains	86	41.3
Stroke(one side of body being weak	14	6.7
Others	65	31.3

Table 2: Knowledge of Caregivers of Elderly about SARS COVID 19.

Variable Incubation period of corona disease	**N=208 n (%)**
2-3days	19(9.1)
More than a week	38(18.3)
1 week	151(72.6)
Of the following where the virus stays the longest	
Air	31(14.9)
Paper	18(8.7)
Cardboard	23(11.1)
Steel	94(45.2)
Plastic	42(20.2)
For Minimum how long hands should be washed	
1 min	150(72.1)
More than a min	27(13)
20sec	31(14.9)
Whats meant by social distancing*	
To stay from people	53(25.5)
To stay at a distance of 1 meter	162(77.9)
Avoid mass gatherings	33(15.9)

Are you aware that covid is more fatal to elderly especially those with co-morbidities	164(78.8)
Are you aware that presenting symptoms of corona disease in elderly can be different other than fever, difficulty in breathing or diarrhea*	
Falls/history of fall	23(11.1)
Speaking incoherently	21(10.1)
forgetfulness	17(8.17)
Don't Know	181(87.0)
Are you aware of helpline numbers like of police, ambulance , hospital, depression helpline etc in need of emergency	27(13)

*Multiple responses for these questions

Table 3: Preventive Health Practices of Caregivers of Elderly in Covid Crisis.

Variable	n (%)
Do You Avoid unnecessary visits to market or outside considering risk to elderly at home	190(91.3)
Do you observe not mixing clothes of elderly with others	153(73.6)
Do you sanitize all door knobs and switches used by them	153(73.6)
If yes, How frequently you sanitize	
Once a day	46(22.1)
Twice a day	32(15.4)
Every 2-3 hourly	149(6.7)
Others(at times, infrequently)	116(55.8)
Do you advice them or give healthy diet or multivitamins to build their immune status	182(87.5)
Do You Advice them to wear face masks and observe social distancing if ever they have to go out	183(88)
Do you tell them to use a fresh mask or sanitize their cloth mask after every time they wear by washing them	38(18.3)
Do you ensure they cover their nostrils and mouth both while wearing masks	146(70.1)
Are they Mobile users	159(76.4)
If yes, Do they talk to their friends or relatives to avoid social isolation (n=159)	98(61.6)
If not , then have you motivated and educated them for mobile usage to avoid being aloof	31(19.5)
Do you spend time with them so that they feel secured or not depressed	121(58.2)
Have you stocked/started hydroxychloroquine drug to the elderly	26(12.5)
If Yes to above questions, Are you aware of the side effects of hydroxychloroquine(n=26)	2(7.7)
How you became aware of this drug	
Doctor/Health Staff	3(11.5)
Close Relative or Friend	9(34.6)
Mass Media	14(53.8)

DISCUSSION

To the best of our knowledge this is the first study so done among caretakers of elderly determining the preventive health behavior towards SARS COV -2.

The awareness in almost half of participants was not up to mark. The results were in corroboration to the study done in Thailand,[11] where young adults had poor knowledge about Covid disease. But in contrast to that done in china where 90% subjects had an overall correct knowledge.

Most of participants had sensitization of elderly being at more risk of Covid infection especially those with co-morbidities. More than 3/4rth knew the concept of social distancing but majority were not aware of the different presenting symptoms of Covid in elderly. The similar results were evident in study done by Erfani,[12] et al in Iran that showed that subjects were well versed with one of the important modality of social distancing. The subjects were also avoiding unnecessary visits to market in consideration of increased risk to elderly. The same practice of avoiding visits to crowded and other places was also reported in study done in Zhong L,[13] et al in china.

Till now no study has been done on caregivers of elderly, hence different practices like having their different clothing and not mixing with others clothes couldn't be compared. But the practice of washing hands, wearing masks, sanitizing the door knobs repeatedly and stocking of commodities was also reported in studies done by Naser,[14] and Zhou,[15] et al.

The elderly usually, to tide over the loneliness move out of their houses to meet and greet people. Research has also elucidated that social connectedness and engagement with other people are vital elements in promotion of successful aging.[16] But in the scenario of current pandemic, compulsion of physical distancing and to stay indoors has led to social isolation. In an era of digitalization, undoubtedly gazettes have become saviour in combating loneliness and depression to some extent. In our study too, more than 3/4rth had a mobile phone

and were interacting with their known ones in their leisure time. The therapeutic role of phones in mitigating anxiety and improving cognitive impairment has been elicited in various studies. These results were in concordance to that conducted by Sun N,[17] et al in nursing staff. He elaborated that mobiles helped in learning self coping mechanisms that led to psychological growth and mental stability in front line nurses. But in those not using mobile, not much efforts were put by caregivers to mitigate the loneliness of elderly. Hence, population has to be sensitized towards desired need of perfect mental health. Efforts should be put enhancing the usage of online emergency help.

Chloroquine and hydroxychloroquine have garnered lot of interest for their potential role in treating corona virus disease.[18] A tweet by President Trump on 21 March 2020 claiming that the combination of HCQ and azithromycin has a real chance to be one of the biggest game changers in the history of medicine" led to a worldwide run on the drug with hoarding of this medicine by masses. But there is insufficient and inconclusive data to support the use of Hydroxychloroquine and Chloroquine for COVID-19 in consideration of its risks/benefit. Also safety of these drugs in elderly is questionable especially in those with chronic heart disease/liver or kidney disease.[19] In our study too, only 1/10th of caretakers had stocked hydroxychloroquine drug whereas rest did not indulge in hoarding the drug. The main source of information was media and internet. Similar results were also revealed by study done by Zhong L.[13] et al.

The main strength of our study is its being conducted during critical period of COVID outbreak. Since no research to our knowledge, has been done on awareness/practices of caregivers of elderly (most susceptible group), so this study holds importance for sensitizing population towards needs of underrepresented elderly group and for formulating managing strategies for older population.

An important limitation of the study is that data was collected online, so in-depth assessment was not viable which could have been possible by interview method. Also, those who do not have internet access might have been missed in our study. As only whats app account (presuming it to be most users friendly) was used, not much sample could be obtained.

CONCLUSIONS

Our study suggested that caregivers of elderly had moderate awareness of SARS cov-2 .A comprehensive public health education program especially catering to needs of elderly is the need of hour.

Conflict Of Interest: None.

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