

Awareness, Perception and Safety Practices about COVID-19 in School Children of 6-16 Years using COVID-19 Quiz

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ABSTRACT

Background and need of study- It's important to know current level of knowledge, perception and practices about COVID-19 of children for their safety when left on their own in community. Knowing this would help the policy makers, parent and teachers to decide the appropriate ways and content that needs to be explained to them in order to ensure the appropriate steps are taken by children to protect themselves when not supervised.

Objective- To find level of knowledge (spread, symptom) , perception about the disease and its outcome, and practice of safety precautions about COVID-19 by school going children of age 6 yrs-16 yrs using a questionnaire in Quiz format as per score of the quiz

Method- A survey in the form of Quiz was devised and circulated on school groups and social media. Willing parents were asked to get it filled from their children. Total 786 responses were obtained in months' time (15 May-15 June 2020). Collected data was analysed using descriptive statistics.

Results- Average score of the participants was 42/58 i.e. good awareness. 92.98% and 94.39% participants gave right answer about spread of disease being thru touching infected surfaces and social gatherings respectively. 93.49% and 95.03% children responded as fever and cough /sore throat to be the symptoms respectively. Only 57.58 thought it to be loss of smell too. More than 95% of participants were right about preventive measures to be avoiding gatherings, following 6 ft distance, frequent hand washing, mask and sanitizer use. More than 85% of children knew about following safety precautions if someone is sick in house. 88.20% children said they got most of this information from social media/TV.

Conclusion- Overall there seems to be good level of awareness in children about COVID-19 symptoms; precautions. TV social media seems to be a good source to spread more awareness and information in this group.

Keywords- COVID-19, Children, Safety precautions, Awareness, Spread

INTRODUCTION

COVID 19 pandemic has engulfed the whole world. All nations and authorities are now trying to find a solution for it on a warfront. Social distancing, sanitization of areas, frequent use of sanitizer hand washing practice, avoiding touching mouth nose and eyes seem to be the best line of defense currently. ^{1,2} Beating the virus completely in current scenario seems to be difficult due to its ever changing nature and mismatch of availability of

resources/knowledge: emerging number of cases. ^{2,3,4} Number of affected people is increasing day by day .As per the statistics on 12 th May there are 4700000 cases thru out the world . ¹ There are 46008 active cases with 22500 cases being cured and 2300 being deceased in India. ⁵ Many people face symptoms of COVID mainly fever, runny nose and coughing which are considered as mild but may prove to be fatal in 3.4 % of case. ^{1,6} It can also spread thru asymptomatic individuals who can be carriers . ¹ This is an

aerosol droplet infection spread which can be curbed by not avoiding exposure to it. Hence as per WHO, the right policy to protect one self from getting infected is thru following the possible safety precautions and taking utmost care not to get exposed to the virus. According to WHO, elderly, those with associated comorbidities and immunity compromised individuals along with children are prone for such infections.^{1,6} Governments have closed the schools and collages as the first step to break the chain of corona. Now also the schools will be the last place to open up in the chain of normalizing the life and society. It's predicted that the virus will be a part of our lives for some time now as per WHO.¹ Thus, when the schools reopen it would be important to protect children from being exposed to it in school environment as many children will be coming from different areas sectors and communities. Children many times prefer to sit, play, eat and do activities into groups at schools. Although schools will make sure to follow all standard precautions and social distancing it would be difficult to make children follow these new socialization norms if they don't understand gravity of current situation. To ensure that they understand and follow safety precautions when they are in community on their own its important to understand their current level of knowledge perception and practices about COVID 19. Knowing this would help the policy makers, parent and teachers to decide the appropriate ways and content that needs to be explained to them in order to ensure the appropriate steps are taken by children to protect themselves when not supervised. This information needs to be gathered as early as possible so as to take quick steps to ensure safety of children when left alone. Keeping in mind this need of the hour, project of "SAFE CHILDEN IN COVID - 19" is devised. Current study is a first step to find their awareness, perception and safety practices about COVID-19 in school children.

METHODOLOGY

Study type: Survey

Study population: School going children

Setting: Community

Method of sample selection: convenience

Method of data collection: Google forms

Study duration: 1 Month (15 May- 15 June 2020)

Sample size: 786 (all participants in the duration of one month)

Inclusion criteria: All children of age 6 yr to 16 yrs,

Exclusion criteria: children/parents not willing for participation, any type of cognitive insufficiency that will affect participation in study

Data Analysis: Descriptive using MS Excel

Outcome measure: score of COVID-19 quiz

This was a quiz formed by the investigators using recent WHO guidelines. It was presented in Marathi and English language. It was made with a purpose of parents/children being able to fill it sitting at home in order to collect data even in lock down. Investigators email ids were given in order to contact in case of queries. It consisted of questions related to demographic data, basic awareness about spread, precautions and perceptions related to COVID-19. This was formed in a quiz format to ensure children's attention is kept at maximum level. It was in the form of MCQs where children had to choose between 'yes, No, Not sure' for each option. To make it easy and interesting, answers were posed in verbal as well as picture format. Scoring as per question was given. Total score was 58. Any one scoring above 40% -55% i.e. 23-32 was considered to have 'Adequate knowledge' about the disease and those below it need to have more knowledge in order to keep themselves safe. Score between 56% to 75% i.e. 33-44 was considered to be 'Good knowledge' and that of 76% and above i.e. more than 45 was considered to be 'Excellent knowledge'. A detailed description about what the parents should do while filling this quiz was given at the start of quiz. Parent were requested

not to give answers and just help participants to read and understand the questions if they are confused. Score appeared at the end so that the parents and students knew the interpretation. A section was added in the end about how to fight COVID. Parents and participants could see detailed analysis of their responses if they wished to do so after submission of quiz. Questions like name, gender, address and other personal information were kept optional.

Material: COVID 19 Quiz, telephones/mobile/computer, paper pen

Method: IEC clearance was taken. A quiz (formed and validated using peer, parental and stake holder's review) was presented on internet using Google forms. Link was shared on social media, school groups and community. Participants were encouraged to share the link with their contacts or share phone numbers of their contacts who might be willing to participate in study with the investigators. Word of mouth publicity and

participation was encouraged. Consent of parents was taken along with ascent of children before participation in the Google form. A detailed instruction sheet was provided about how to fill the questionnaire and role of parents/teachers (whoever was getting the questionnaire filled). Collected data was presented in Excel sheet and analyzed using descriptive statistics.

RESULTS

Table 1- Demographic data –

a) Age

6-9 years	20.73%
10-13 years	69.33%
14 -16 years	9.92%

b) Gender

Male	69%
Female	31%

c) Score

Score	Interpretation	% of participants
>23	Needs improvement	1.27%
23-32	Adequate	5.34%
33-44	Good	56.99%
45-58	Excellent	36.38%

Table 2-Safety measures for protection

	Yes	No	Not sure
Avoiding social gatherings	94.39	5.22	0.51
Maintaining distance while meeting / talking	97.07	2.67	0.38
Taking antibiotics	31.51	48.98	19.59
Washing hands after coming home	97.07	2.80	0.25
avoiding physical contact	92.09	5.85	2.16
Using sanitizer after going out	96.17	3.69	0.89
Using mask while going out	97.07	3.69	0.38
Avoid touching mouth, nose, eyes, face	95.41	4.33	0.64
Covering mouth while coughing/ sneezing	96.81	3.44	0.64
Eating garlic/ ginger	36.10	43.38	21.25
Taking hot bath	58.16	25.57	11.96
Breathing exercises	72.45	17.81	5.09
Exposing yourself to the sun/ extreme temperature	45.54	24.05	16.54
Drinking warm water	74.23	14.63	4.33
Staying away from those who have cough/fever/recent travel history by public transport	95.41	4.45	1.02

Table 3- Susceptible population

	Yes	No	Not sure
Sick people	92.22	5.09	2.80
Elderly	77.04	13.10	10.69
Infants	90.82	7.00	5.60
Healthy people	17.47	64.12	19.08

Table 4-What to do if someone is sick in house with COVID-19

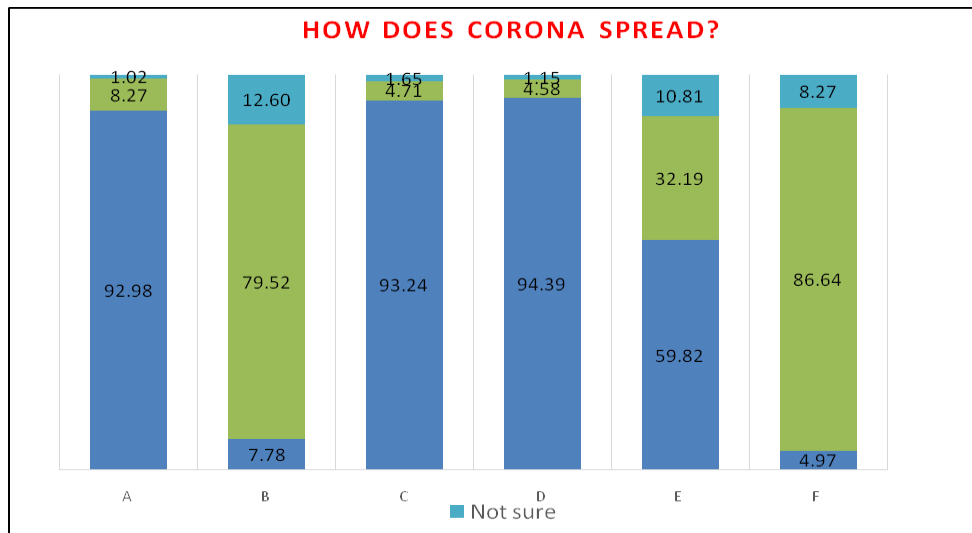
	Yes	No	Not sure
Maintain 6 ft distance from the person	93.62	5.09	1.40
Frequently wash hands	95.54	3.69	1.65
Use sanitizer to clean the surfaces	83.29	3.69	1.15
Avoid close contact with a person	93.11	5.60	1.91
Avoid sharing personal items	93.37	5.60	1.15
Avoid physical contact without gloves	90.05	8.27	1.78

Table 5-Common source of information

Parents/ Family members	54.72
People around you	15.31
Friends	14.67
Television / Social media	88.78
School/ online informaion sessions	28.7

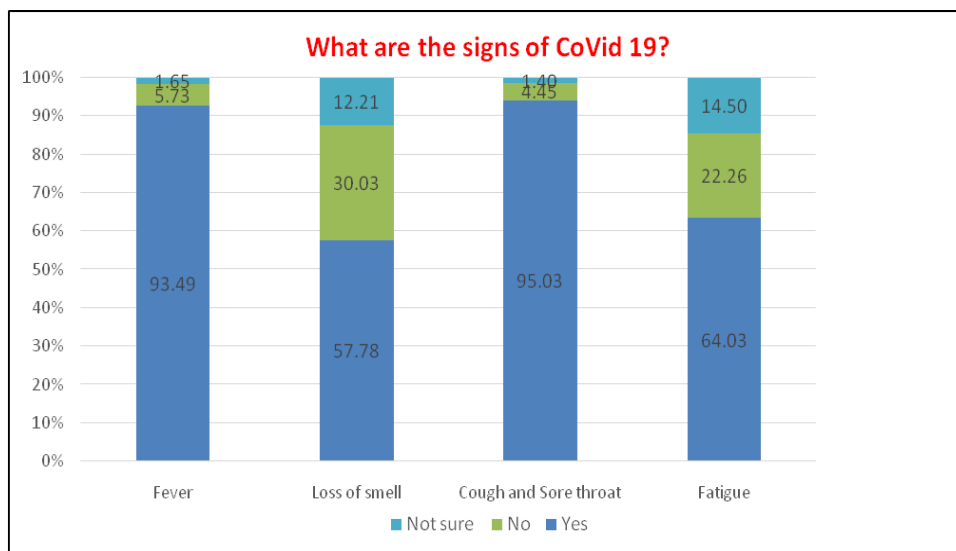
Table 6- Would you like to know more about disease?

Yes	No
92.86	7.40

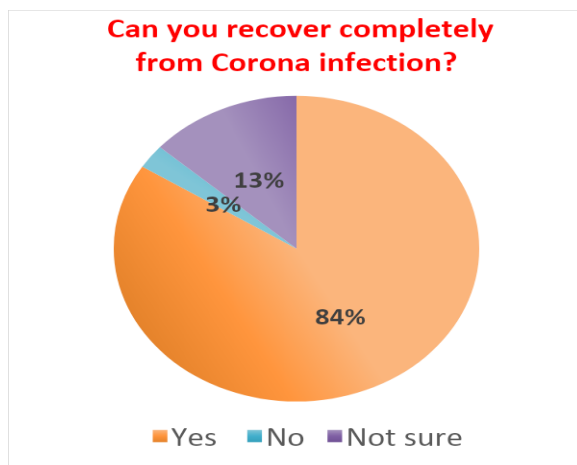


Graph 1- Spread

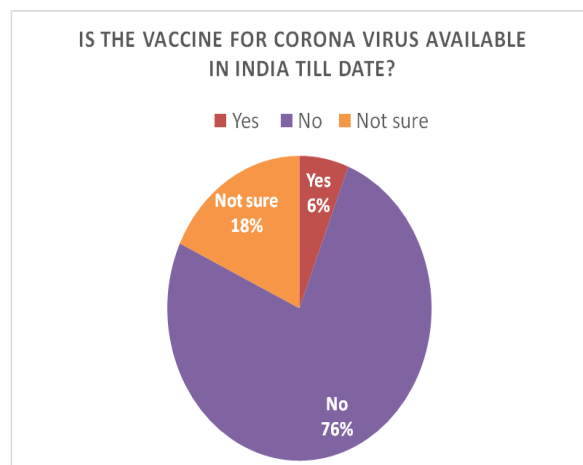
A=Through touching infected person/ surfaces,
 B=Through water
 C=Physical contact,
 D=Social gatherings
 E= Through fomite/ droplets in air,
 F= Mosquito bite



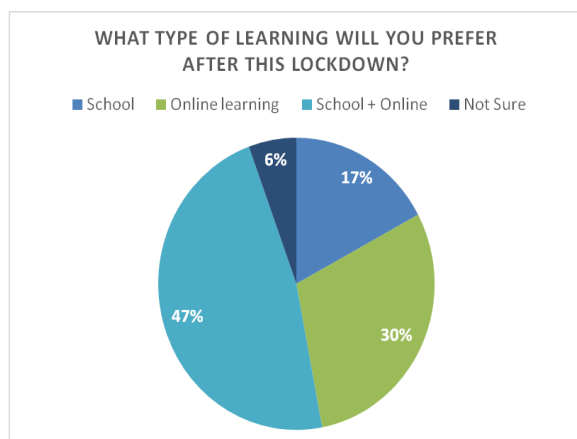
Graph 2- Signs



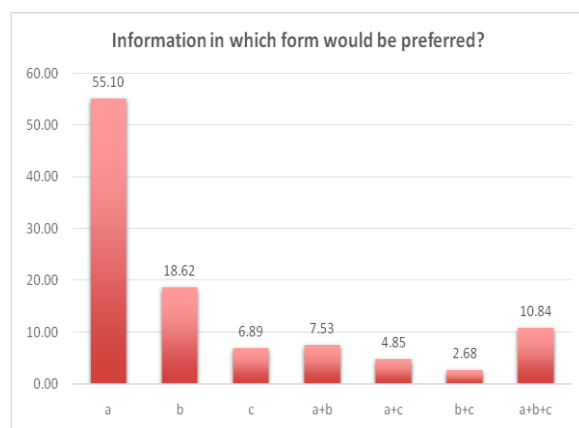
Graph 3- Recovery



Graph 4- Vaccine availability



Graph 5- Learning type preferred



Graph- 6- Information in which form would be preferred?

a= Video/ pictures
 b= Lectures/ parents, teachers
 c= Written material, books, pamphlet

DISCUSSION

Total 786 children participated in this survey. Average score of the participants was 44 i.e. good knowledge about COVID-19 spread, precautions.

It is important for children to know how COVID-19 spreads, so that they can be vigilant about saving themselves from the spread. Hence a question was asked about how the infection spreads. total 6 options were given .These options were carefully chosen from WHO information and recently published information from journal.^{1,6} 92.98 % participants responded as ‘Yes’ for its spread thru touching infected surfaces and getting in close contact with the infected person. 94.39% of them identified social gatherings to be the highly infectious source. Since children have been able to identify the most common sources of

infection it can be assumed that, they will be careful when in community and save guard themselves from infection.

Fever loss of smell cough, sore throat and fatigue are common symptoms of this infection.^{6, 7, 8} 93.49% children identified fever to be the most common symptom whereas , 95.03%, 64% and 57.78% answered ‘Yes’ for sore throat ,cough, fatigue and loss of smell respectively. According to current information loss of smell is noticed more commonly and is many times first sign of infection.^{1,7} Children should be made aware of this so that there can be early identification and hence treatment.

WHO has advised avoiding social gatherings, social distancing, frequent hand sanitization, use of masks and no touching of eyes, mouth and nose policy for protection from this infection.¹ Many countries have come up with their own safety guidelines too. More than 95% of participants of this survey answered as ‘Yes’ for these safety measures. This is a very good number and an assuring sign that they would be able to keep themselves safe in community. This virus affects the lung tissue and causes fibrosis leading to respiratory difficulty and loss of oxygen saturation leading to further complications. Hence strong cardiorespiratory system can be an effective way measure to save one self. ^{9, 10} Thus, breathing exercises are emerging as a combating strategy against COVID-19. 72.45% participants though it to be a protective measure. We feel this proportion can be increased with more awareness building. Teaching/exposing children to different breathing techniques like pranayama, deep breathing exercises can be a good way to enhance this awareness.

Data shows that recover rate of COVID-19 disease are more than 65% although it varies from country to country. ¹ Hence, the initial fear of the disease is expected to reduce slowly .84.31 % participants of this survey knew that you

can recover from this illness. This shows a positive sign as children will not be gravely afraid of this disease and will keep their positive mindset.

When asked about who are most susceptible to get infected participants answered correctly as those with previous illnesses, elderly and infants. This percentage was 92.2, 90.82 and 77.04 respectively. This again shows that, children have a good awareness about this infection and will be able to avoid this vulnerable population in case of being infected.

The disease is spreading rapidly. Currently more 13616593 (data as per date 19/7/2022) people are infected with COVID-19 worldwide and new cases being found every day. Every building/society has at least 1 member who is suffering or has recovered from this infection. This infection is bound to increase as person to person transmission is increasing day by day.^{2,11,12} Hence, it is important for children to know how to behave in case a family member is infected or if they are home quarantined/treated. Guidelines for such scenarios are available. Currently there seems to be hand hygiene and sanitization to be the best strategy for safeguarding oneself.¹³

When asked about safety precautions about the same, 93.62% children chose maintain more than 6 feet distance, 83% chose hand and surface sanitization techniques and 93.36% opted for avoiding sharing personal items. This again is a positive picture regarding their awareness.

Search for appropriate cure is going worldwide but there has not been any positive news yet.^{11,12,13,14} till appropriate cure is available it is important to be careful and take appropriate precautions to be safe from this disease. 69.34% participants were aware about unavailability of vaccine or any specific drug to treat this illness.

When asked about from where did they get all this information about COVID - 19, 88.25 % participants said it to be from TV and social media and 55.2 % said it to be from family members. This again

highlights the influence of social media on children. This platform can be used to sensitize children about the disease and safety precautions. 92.86 % of the children said they would like to learn more about this disease and 55.1% would prefer to get information in pictures/video form, while 18.62% opted lectures and information from parents/teachers. Whereas 10.84% would prefer from all the sources. New information can be represented in the form of children friendly videos, cartoons or audio format so that they are kept well aware of recent developments regarding COVID-19.

Guanghai Wang discussed about closing of school and its effects on children during COVID 19 outbreak.¹⁵ Many schools and colleges have started online teaching since June in India. When asked about what type of learning would they prefer 47.58% chose a combination on online and classroom teaching as to be the best option for them.

Thus we can say that almost 95% of children have a good knowledge about this disease and they seem to be well prepared to face the challenges when the schools are reopened or when they have to manage on their own in community in the current scenario.

This study is first of its kind as no such information was available till the time this study was sent for publication. Investigators were able to reach to parent all across the globe hence this data can be said to be representative of all children across the world. Maximum precautions were taken to avoid errors and confounding factors. Since this was an online survey in the form of quiz, primary school children needed help in reading the questions, which was provided by parents or family members. Although, it was strictly mentioned that parents shouldn't help for quiz by giving answers since, investigators were not available at the time of quiz solving, parental or other family member influence could not be completely ruled out. Children of 6-16 years participated in quiz hence

influence of age in overall scores also cannot be ruled out completely. This quiz was circulated thru social media and school groups hence those without smart phones could not participate in the study.

CONCLUSION

Overall, there was a good level of awareness in children about COVID-19 symptoms; precautions. TV/social media seems to be a good source to spread more awareness and information in this group.

ACKNOWLEDGEMENT

Authors would like to acknowledge help provided by Principals and parents of various schools of Deccan Education Society for their support and help in circulating the quiz in all schools of DES. We would like to thank parents and participants who participated in quiz and held in circulating the quiz further. Special thanks to Dr. Sharad Kunte (Chairman), D.A Kulkarni (Chairman, LMC, DES Brijlal Jindal College of Physiotherapy, Pune), Dr. Aparna Sadhale (Principal, DES Brijlal Jindal College of Physiotherapy, Pune) for the time to time help and encouragement while this project was going on.

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How to cite this article: Shaikh AA, Likhite A. Awareness, perception and safety practices about COVID-19 in school children of 6-16 years using COVID-19 quiz. *Int J Health Sci Res*. 2020; 10(8):42-48.
