

Reopening of Educational Institutes during pandemic COVID-19: Are education professionals ready?

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Abstract: COVID-19 has brought about changes to the education system in multiple ways because of yearlong lockdown and closure of educational institutes. With ongoing talks of reopening educational institutes, educational professionals could be one of the most useful sources of Coronavirus disease (COVID-19) related health information for their young adult students when they reopen post lockdown. However, it is important that they themselves possess adequate and accurate knowledge regarding COVID-19 prevention. Knowledge about preventive strategy is the major key to success before educational institutes will reopen. This study was planned with an objective to assess awareness among education professionals by assessing the level of their knowledge, attitude, and practice and their relationship with selected sociodemographic variables sample of this study was education professionals among schools, colleges, and universities in Rajasthan state, India. A pre-tested, self-structured questionnaire shared as google form regarding COVID-19 preventive measures and readiness to see roll back. A Detailed Descriptive analysis was done to find the knowledge, attitude, and practice among participants and selected sociodemographic variables. Item-wise analysis was also done to see the level of knowledge, attitude, and practice. Average knowledge value was calculated as 12.42 ± 0.08 at 95% CI (12.40-12.070). The average attitude score was 2.216 ± 0.385 at 95% CI (2.064 -2.367), an average of practice calculated as 1.67 ± 0.472 at 95% CI (1.0712-1.627) in all 820 participants. Knowledge related to the prevention of COVID-19 was found to be associated with age, gender, COVID-19 history; webinars attended by participants'. Practice is also found to be correlated with webinars attended. This Study concluded that knowledge was adequate among participants related to symptoms in COVID -19 wave -1 but was less for symptoms in COVID -19 wave -2. Some practice was not satisfactory and attitude was favorable for prevention of COVID 19 .webinar shows association with knowledge and practice which conclude that if more

webinar, workshop, and training sessions will be administered it will further enhance awareness at all levels in these participants.

Keywords: COVID-19 wave -2, Education professionals, Knowledge, Attitude, Practice, India.

1. Introduction

Coronavirus disease (COVID-19) caused by SARS-COV-2 has affected the lives of human beings in all dimensions ^{[1][2]}. 8.5 % of cases are found among the age group below 18 years ^[3] in December 2020 which is getting higher in the year 2021. With a population of more than 1.3 billion people, India has become the new epicenter of COVID-19 ^[4]. Public places like educational institutions, workplaces, shopping malls, entertainment plazas tourist spots and public transport, were temporarily shut down to stop the spread of this epidemic. However, with the improvement of recovery rate towards June 2020, the governments started withdrawing the lockdown and decided to open many public places and activities in phase wise manner. With the emerging mutants of COVID-19 in early 2021 again rapid transmission of the virus has been reported with new symptoms like fatigue, chills, diarrhea and vomiting and Post COVID-19 syndrome consisting of cardiac, renal, gastro-intestinal, endocrinal and neuropsychiatric sequelae ^[5,6]. The virus this time is not only infecting the middle-aged, senior citizens but also the younger populations. Educational institutions have remained closed since early 2020 to ensure the safety of children and youth starting from primary level to college and university level. However, acknowledging the continuous threat of COVID-19 for more than a year and at the same time appreciating the need of education as a continuous process, the Education Departments of various state Governments are planning for reopening of various educational institutions. Most affected cases during the initial phase of wave -2 were observed in a cohort of students and teachers after the reopening of schools and colleges in India ^[7].

2. Significance of the study

Schools, colleges, universities can cause the spread of the virus in the community if adequate knowledge and practices are not followed in these places ^[9]. Keeping in mind the current situation It is imperative for all educational professionals to be aware and follow the safety protocols for preventing spread of the virus to achieve the aim of safe classroom teaching. Education professionals when prepared with adequate knowledge about preventive strategies will not only reduce the spread of virus while reopening but will also be able to transfer the same to their young students, that will help flattening the curve of rapidly in the community ^{[8][9]}. Very few studies have knowledge concerned with awareness among education professionals, so this study was planned among education professionals.

3. Review of related studies

Admaja K Nair, Philips Mathew, LS Sreela, Twinkle S Prasad, Merrin Jose conducted a study to evaluate the awareness regarding prevention of COVID-19 among adults of Bangalore city they found that a few adults faced dental problems during lockdown and many were aware about risk of infection .they recommend virtual treatment should be think of to prevent infection. **Pranav D. Modi , Girija Nair, Abhay Uppe, Janhavi Modi, Balaji Tuppekar, Amit S. Gharpure, Deepak Langade** conducted a study among health care students regarding COVID-19 awareness among health care professional students in Mumbai and found that there is high need of training among this group.

4. Objective

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1. To assess awareness among education professionals by assessing the level of their knowledge, attitude, and practice 2. To find the relationship of knowledge, attitude, and practice with selected sociodemographic variables.

5. Population and sample

It was a cross sectional descriptive study. Written consent was obtained from participants before starting the survey. The period of survey was planned from 2nd April 2021 to 10th May 2021. The response rate of the survey was 82.8%; Response declined after April 15th due to the rise in COVID-19 cases and the link was disabled on 22nd April. 2nd lockdown was announced in Rajasthan state during this study period, wave 2 of COVID -19 [10] **Tool:** A self-structured pretested google form was shared as a questionnaire among education professionals. The reliability of the tool was assessed by Cronbach's alpha which is found to be 0.7. A self-structured expert validated tool was designed consisting of 16 items based on knowledge and 5 items of attitude and 5 items of practice related to prevention of COVID -19 in educational institutes and among students. The questionnaire was prepared on the basis of WHO, CDC guidelines for COVID -19 prevention among school students, guidelines given by MoHFW, India, UGC guidelines^{[11][12][13]}. The distribution of responses was presented by age classification, gender, education level. Other variables were also created on the basis of COVID -19 positive status in past, webinars attended for preventive measures of COVID -19. Ethical clearance was taken from the institutional ethical committee before starting the study. Consent was taken by all the participants before the survey tool precede. **Sample:** Sample size was calculated using Cochran formula ($Z^2 \times pq/e^2$) of 806 education professionals at 95% confidence interval. A convenient sampling method was preferred to reach all participants. The google form survey-based questionnaire was sent to 1000 education professionals through e-mails. Before conducting the main study, a pilot study was done on 80 School teachers. Participants were informed about the study, its purpose, and how they will participate. Finally, electronic responses were collected from 820 educational professionals including teachers at middle school, high school, senior secondary school, university, etc. The educational level of participants was of graduate, postgraduate, doctoral, and post-doc level. The inclusion criteria were educational professionals who are working in different positions in affiliated institutes. Participants related to the medical education field were excluded.

6. Statistical technique used in the present study

Data were tabulated in an excel spreadsheet and descriptive statistics were performed using statistical software SPSS 16. to analyze the data mean, standard deviation, percentage were calculated. Mean was analyzed at 95% confidence interval. A Chi-square test was performed to find the association of knowledge, attitude, and practice with socio-demographic variable groups and other groups of variables. Regression analysis was also done on SPSS to see the relationship between variables and knowledge, attitude, and practice of the participants.

5.1 Data analysis and Interpretation:

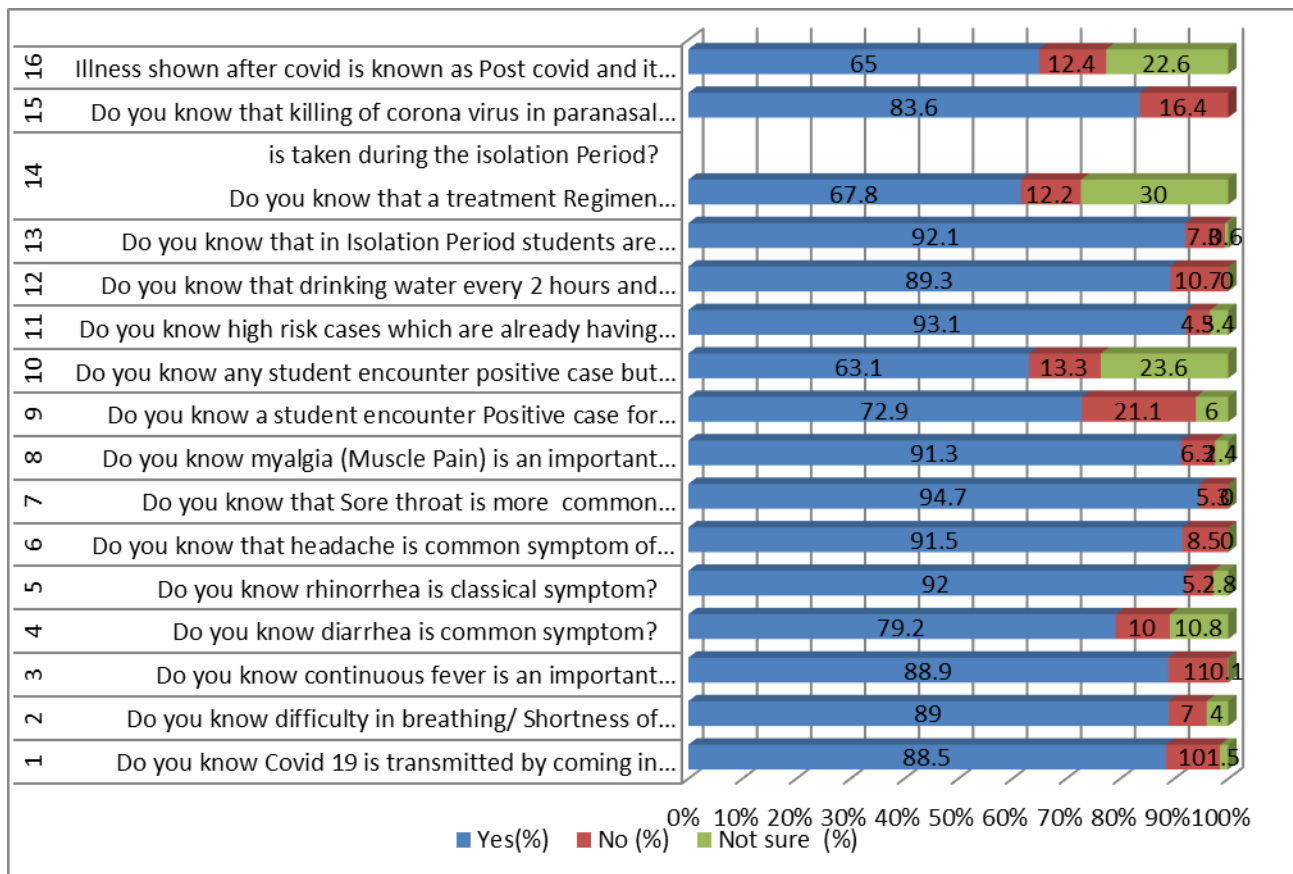
Table 1: Percentage frequency of Demographic characteristics of participants

Demographic group	Subgroup	Frequency	Percentage (%)
Age group	21-30	405	49.39
	31-40	379	46.21
	41-50	26	3.17
	51-60	10	1.21
Gender	Male	248	30.3
	female	572	69.7
Education	Graduate	253	30.8
	Postgraduate	464	56.5
	Doctorate	103	12.5
History of COVID -19	Yes	317	38.6
	no	503	61.3
Attended webinar	Yes	554	67.5
	no	266	32.4

Interpretation of table 1: it is inferred from the Table 1 that a total of 820 participants the majority (49.39%) of the participants were in the age group 21-30 years (n=405), followed by 46.2% in the age group 31-40 years (n=379). Approximately 69.7% were females (n=572).Among participants majority, 56.5% were postgraduates (n=464). The majority of the participants 67.5% (n=554) attended webinars related to the prevention of COVID -19. The majority of the participants 61.3% were not diagnosed with COVID- 19 in past or recently (n=503).

Knowledge Assessment: Figure 1: item-wise response for knowledge questionnaire

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Interpretation of figure 1: Average knowledge value score was found to be 12.42 ± 0.08 at 95% CI (12.40-12.070) in all 820 participants. When we assessed the Mean Knowledge score related to different items it was higher in fever, dyspnea etc. but was low for treatment guidelines at home, diarrhea, post-acute COVID-19 symptoms, myalgia, body ache, headache and chills which were common symptoms in wave-2 of COVID-19. This pattern of knowledge level is consistent with other studies related to KAP in India ^{[14][15]} whereas the percentage of less correct answers range of 60-66% were mostly observed with body ache, fatigue symptoms, dry cough, diarrhea, vomiting which is observed in wave 2 of COVID-19. The maximum correct knowledge level is related to areas of symptoms such as fever, breathing difficulty. Knowledge was also deficit related to treatment guidelines given for home management of covid19 cases. 63% of participants were knowing that if less than 15 min. contact with more than 1meter distance with positive case occur urgent requirement of testing is not required which reflect other participants lack factual knowledge. Only 65% of participants were having knowledge about post-COVID-19 syndrome which indicates they may not practice adequate care guidelines after being negative for COVID-19 and again morbidity, mortality burden related to post COVID-19 problems may increase(Figure 1) .67% of participants were aware of the line of treatment followed during the illness which helps in being confident about the right of patient as malpractices are also observed among various areas where wrong treatment line is followed and giving risk for lives especially in remote rural areas.

Table 2: Relationship between knowledge and sociodemographic variables

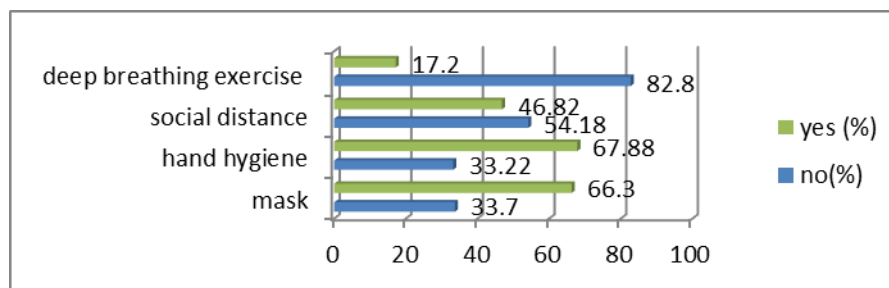
Relationship between sociodemographic variables and Knowledge level of the participants					
Age	Poor	Fair	Good	Statistical Value	Significance
21-30	8	30	367	17.977 df=8	Significant
31-40	2	33	344		
41-50	2	0	24		
51-60	1	0	9		
Gender					
Male	3	32	223	8.778 df=1	Significant
Female	12	39	521		
Education					
Graduate	4	23	228	7.306 df=6	Not significant
Postgraduate	6	37	419		
Doctorate	5	11	87		
COVID-19 history					
Yes	3	29	285	2.324 df=1	Not Significant
no	12	42	449		
Webinars attended					
Yes	12	54	488	3.784 df=1	Significant at 0.05
no	3	17	246		

Interpretation of table 2: Association between socio demographic variable with Knowledge level among participant is found to be related with age, gender and webinars on COVID -19. Regression analysis was done to predict the relationship between knowledge as dependent variable and age, gender, education, COVID-19 history, webinar attended. Result shows that webinar has significant effect logically on knowledge which is 34.337 times at 95% level of confidence.

Practice assessment: Average practice was found to be low with a value 1.67 ± 0.472 at 95% CI (1.0712-1.627) in all 820 participants.

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Figure 2: participants' response for practice questionnaires



Interpretation of figure 2: Practices related to hand hygiene, regular wearing of double mask in workplace, maintaining social distancing and regular deep breathing exercise found to be the maximum among 67.8% participants. Only 67.8% of participants wash their hands regularly for 20 seconds after every 2 hours or after coming in contact with some infected surfaces. The double mask was not in much practice in crowded places. Practices of social distancing were followed inadequately by 58.2% of participants because of lack of markings at shopping places and workplace as written by participants in comments. Deep breathing exercise and yoga were least practiced by 17.2% of participants merely, awareness can be created for the importance of deep breathing exercise

Table 3: Association of practice with sociodemographic variables

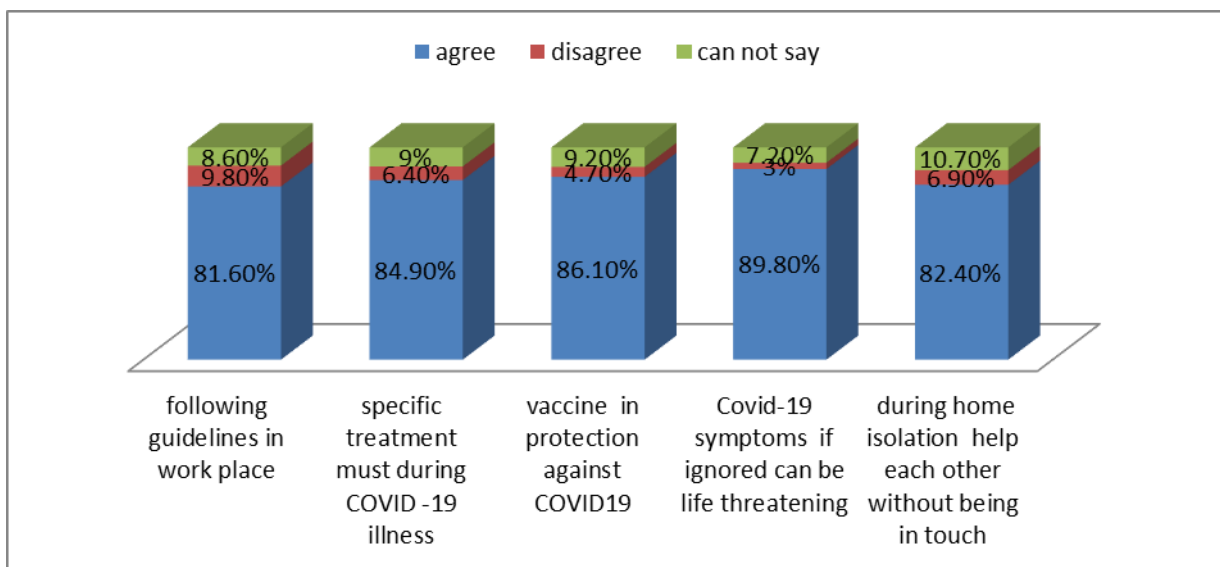
Relationship between socio-demographic variables and Practice				
Age	poor	Good	Statistical Value	Significance
21-30	136	269	3.636 df 4	Not Significant at 0.05
31-40	123	188		
41-50	12	14		
51-60	2	7		
Gender				
Male	3	32	0.181 df=1	Not Significant at 0.05
Female	12	39		
Education				
Graduate	92	158	3.278 df=3	Not Significant 0.05
Postgraduate	45	319		
Doctorate	35	464		
COVID -19 history				
Yes	94	219	2.196 df=1	Not Significant 0.05
no	177	328		
Webinars				

attended				
Yes	12	54	3.878 df=1	significant at 0.05
no	3	17		

Interpretation: It is inferred from Table 3 Association between socio demographic variable and Practice is found to be associated with webinars attended.

Attitude Assessment: Average score for attitude was 2.216±0.385 at 95% CI (2.064 -2.367) in all 820 participants.

Figure 3: item-wise attitude questionnaire response among participants.



Interpretation: it is inferred from figure 3, Attitude related to seriousness of disease, vaccine, following guidelines for prevention, taking specific treatment, helping others in isolation period was favorable among average of 82% participants for prevention and control of COVID-19.

Table 4: Association of attitude with selected sociodemographic variables

Relationship between socio-demographic variables and Attitude					
Age	Disagree	agree	Cannot say		Significance
21-30	1	61	341	6.682df=8	Not Significant
31-40	4	72	225		
41-50	1	5	77		
51-60	0	0	9		
Gender					
Male	1	46	201	0.999df=1	Not

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					Significant
Female	4	91	472		
Education					
Graduate	1	42	205	2.874 df=6	Not Significant
Postgraduate	3	81	378		
Doctorate	1	14	88		
COVID-19 history					
Yes	3	57	253	1.740df=2	Not Significant
no	5	80	419		
Webinars attended					
Yes	3	90	460	0.654 df=1	Not Significant
no	2	48	213		

Association was analyzed between socio demographic variable and attitude at 0.05 level of significance

Interpretation of table 4: there is no association found between socio demographic variable with attitude of participants.

7. Recommendation

In the present scenario of COVID-19 knowledge related to wave -2 symptoms is inadequate which may result in a delay for consultation and will enhance seriousness.

- 1) appropriate knowledge must administer through all possible methods such as webinars, online training, symposium, videos, conferences, etc.
- 2) Practices of appropriate social distancing at workplaces need to improve by developing strict policy and engineering measures.
- 3) It is highly felt that online workshops for demonstration of basic skills for prevention of infection will prepare the whole population for the prevention of COVID-19. Workshops can be planned to demonstrate skills of handwashing, the role of the teacher in the institution, how to follow social distancing at workplaces, importance and techniques of wearing mask
- 4) More webinars can be conducted for developing awareness among this population addressing wave 2 symptoms, covid-19 prevention among school children what to do when anyone comes in contact with the positive case, COVID-19 management at Home, and identifying the need of referral to Hospital
- 5) yoga day can be planned regularly to develop the habit of practicing yoga for fighting against this deadly respiratory disease and achieving good mental health during this pandemic
- 6) There is a need for new policy development to monitor adherence to preventive practices.

8. Conclusion

Education professionals, if they will be aware of the preventive measure for COVID-19 they can transfer that knowledge to their students and a big population group can flatten the curve of rapidly rising cases. The average knowledge level among participants shows that adequate knowledge about symptoms is observed related to wave 1. Among socio-demographic variables age, gender, the webinar has shown a significant relationship with knowledge level. Practices were not much satisfactory. Attitude related to the seriousness of the disease, immunization, following guidelines, helping isolated case at home without being in direct contact, was favorable which reflect community members has started thinking positively for prevention of COVID-19 rather than disobeying rules. No correlation was found between knowledge and practice of participants which demands hands-on skills or training, or workshop should be conducted.

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