

Are we Fortified for Prevention and Control of Epidemic Outbreaks like COVID 19 in Schools of India: A Cross-sectional Knowledge Awareness and Perception Survey on Education and Training Professionals in India (KAPEI-1)

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Abstract

Background: Schools teachers, being the intellectual resource, can aid in controlling epidemics like COVID 19. To serve the purpose school teachers themselves need to be aware of such emergencies.

Objectives: To assess the knowledge, awareness, and perception of education and training/teaching professionals in India (KAPEI-1) about epidemic outbreaks like COVID 19.

Methods: This cross-sectional survey was conducted in North India from January 2020 to June 2020 and included teaching professionals and school teachers from different education institutions. Data was collected by using a self-administered questionnaire, with questions about demographics knowledge awareness and perception about COVID-19. Data analysis was done using Statistical Package for Social Sciences statistical software, version 22.

Results: Of the 210 participants, 200 completed the survey (primary teachers: 48.0%; middle school teachers: 15.5%; secondary/senior secondary teachers: 29.0%; management level: 7.5%). Sixty six percent (66.0%) of the teachers had never received any of the training pertaining to health emergency or disaster response and preparedness. About 3.5% teachers mentioned that they "Don't know" how to suspect COVID-19 infection. Nine percent (9.0%) of respondents mentioned that their school did not have any medical officer or auxiliary staff.

Conclusion: The study highlights the need for adequate training of the education and teaching professional so that they can be utilized as resources for prevention and control of epidemic outbreak such as COVID-19.

Keywords: Awareness; COVID-19; Healthcare Professionals; Knowledge; Perception; Schools Teachers

Abbreviations

KAPEI-1: Cross-sectional Knowledge Awareness and Perception Survey on Education and Training Professionals in India-1; CO-

VID-19: Coronavirus Disease 2019; n: Number of patients; WHO: World Health Organization; NCERT: National Council of Educational Research and Training; CBSE: Central Board of Secondary Education

Introduction

The global threat of coronavirus disease 2019 (COVID-19) continues to emerge. The outbreak has reached more than 100 countries with over 100,000 cases and increasing morbidity and mortality [1,2]. Health care authorities have already initiated awareness and preparedness activities worldwide. Schools teachers, being the intellectual resource, can aid in controlling epidemics. An average school aged child spends 28% of the day and 14% of his or her annual hours in school with their teachers [3]. Children learn from their teachers in school and share their learning with their parents, family members and other people in their contact. Teachers therefore, have a huge impact not only on children but their families too. During the unprecedented crisis like COVID-19 epidemic outbreaks they can be effectively utilized to spread public awareness. Thus, they can help in prevention and control of epidemic outbreaks. To serve the purpose school teachers themselves need to be aware of such emergencies and should have a protocol in place to handle the same. This survey therefore, aimed to assess the knowledge, awareness, and perception of education and training/teaching professionals in India about epidemic outbreaks like COVID 19.

Materials and Methods

Study design and setting

A cross-sectional knowledge, awareness, and perception survey was conducted on education and training/teaching professionals in India (KAPEI-1) from January 2020 to June 2020. The survey was conducted in accordance with the code of ethics of the world medical association (Declaration of Helsinki).

Participants in survey

The survey participants included teaching professionals and school teachers. The survey included participants from different schools and teaching institutions in North India. Participation was voluntary and they had autonomy to quit the survey at any stage. The subjects who were not teaching in North India at the time of study or who did not complete the survey form were excluded.

Survey questionnaire

A close-ended questionnaire (survey form) was formulated in 2020 consisting of 4 sections. The first section of questionnaire included questions about the demographics including gender, working duration, and role type. The second section asked participants about their knowledge and awareness about COVID-19. The third section asked organization specific questions related to management of COVID-19. The fourth section asked participants about

their perception. Responder had to “agree” to one of the most appropriate responses by a tick mark. Few of the questions in the questionnaire were open ended where participants could either agree to one of the most appropriate option available or could even specify their answer apart from the options given. A panel of experts including teachers (from all categories of role types namely primary, middle, secondary/senior secondary, and management), physicians, dental surgeons, and researchers determined the psychometric characteristics (test/re-test reliability) of the back-translated version with the original, which was then piloted on 20 participants and revised for final distribution.

Data collection

The online version of survey forms was used to collect the responses of the participants. The questionnaire was filled by the participants based on their knowledge, and no clarification was provided for any doubts regarding the questions. Further, no compensation was offered to the participants to complete the survey. When the responses were submitted by the participants, they were transferred simultaneously in an excel sheet and were saved until they were statistically analyzed.

Statistical analysis

All the data was entered and analyzed through statistical package SPSS 22 (SPSS Inc., Chicago, IL, USA). All categorical variables such as gender, occupations, etc., were presented as numbers and percentages. Chi-square test was used according to was applied to determine the significant association between categorical variables. The probability value (p) < 0.05 was considered as statistically significant.

Results

Demographic characteristics

Survey questionnaires were distributed to a total of 210 school teachers, of which 200 responders completed the survey (response rate 95.2%). The remaining 10 participants refused to fill the survey form. Among the responders, 96 (48.0%) were primary school teachers, 31 (15.5%) middle school teachers, 58 (29.0%) secondary/senior secondary teacher, and 15 (7.5%) were teachers at level of management from different educational institutions; 41 (20.5%) were males and 159 (79.5%) were females. Majority of respondents (87; 43.5%) were 31 - 40 years in age. More than half of the respondents i.e. 118 (59.0%) had > 10 years of experience. The demographic characteristics of the study population have been detailed in table 1.

Demographic characteristics		Frequency (Percentage) [n (%)]
Gender	Females	159 (79.5%)
	Males	41 (20.5%)
Age group	18-30 yrs	40 (20.0%)
	31-40 yrs	87 (43.5%)
	41-50 yrs	62 (31.0%)
	51-60 yrs	11 (5.5%)
Educational qualification	Undergraduate	1 (.5%)
	Graduate	34 (17.0%)
	Postgraduate	159 (79.5%)
	PhD	6 (3.0%)
Type of organization	Government	8 (4.0%)
	Private	192 (96.0%)
Role type	Primary teacher	96 (48.0%)
	Middle teacher	31 (15.5%)
	Secondary/Senior secondary teacher	58 (29.0%)
	Management	15 (7.5%)
Experience	1-5 years	29 (14.5%)
	5-10 years	53 (26.5%)
	>10 years	118 (59.0%)

n: Number of respondents.

Table 1: Demographic characteristics of study population.

Knowledge and awareness of responders about epidemic outbreak

In respect to trainings pertaining to health emergency or disaster response and preparedness, majority of respondents (132;

66.0%) responded that they had never undergone any such training. Among remaining of 68 respondents who had undergone their training, 22 mentioned that they had received their training > 5 years back (Table 2). In regards to role types, about 53% of management level teachers (out of 15 [100.0%]) had underwent the aforementioned training while 68.8% primary teachers (out of 96 [100.0%]), 71.0% middle teachers (out of 31 [100.0%]), 63.8% secondary/senior secondary teachers (out of 58 [100.0%]), and 46.7% management level teachers (out of 15 [100.0%]) responded that they did not underwent any such training. The differences among respondents based on role type for were statistically insignificant (P-value 0.083; Table 2).

There were mixed response to the question “who according to you are most appropriate to issue the guidelines/advisories or any key messages for teaching professionals for Indian schools during a pandemic/epidemic/massive disease outbreak” (Table 2). Forty-nine (49; 24.5%) mentioned WHO, 47 (23.5%) mentioned ministry of human resource development, NCERT, and 40 (20.0%) responded state or national board such as CBSE etc. to be apt. Further, 34 (17.0%) mentioned state or local government and 22 (11.0%) responded that own school/institution were the most appropriate bodies to issue such guidelines. Four (4; 2.0%) specified local/national teachers associations, 1 (0.5%) specified that a mix of national experts on health, and 3 (1.5%) mentioned that none of the bodies are appropriate to put forth such guidelines/advisories, with statistically no differences in opinions based on role type (P-value 0.644; Table 2).

To the question “which of the following groups is most likely to get infected with COVID19”, majority (70; 35.0%) opted “Anybody”.

	Primary teacher [n (%)]	Middle teacher [n (%)]	Secondary/Senior secondary teacher [n (%)]	Management [n (%)]	Total [n (%)]
How much time has passed when have you undergone any training pertaining to health emergency or disaster response and preparedness					
No training	66 (68.8%)	22 (71.0%)	37 (63.8%)	7 (46.7%)	132 (66.0%)
1-2 years	8 (8.3%)	6 (19.4%)	13 (22.4%)	3 (20.0%)	30 (15.0%)
2-5 years	9 (9.4%)	3 (9.7%)	3 (5.2%)	1 (6.7%)	16 (8.0%)
>5 years	13 (13.5%)	0 (0.0%)	5 (8.6%)	4 (26.7%)	22 (11.0%)
Total [n (%)]	96 (100.0%)	31 (100.0%)	58(100.0%)	15(100.0%)	200 (100.0%)
P-value	0.083#				
Who all according to you are most appropriate to issue the guidelines/advisories or any key messages for teaching professionals for Indian schools during a pandemic/epidemic/massive disease outbreak					
A mix of national experts on health	0 (0.0%)	0 (0.0%)	1 (1.70%)	0 (0.0%)	1 (0.5%)

Ministry of Human Resource Development, NCERT	20 (20.8%)	8 (25.8%)	16 (27.6%)	3 (20.0%)	47 (23.5%)
Local/National teachers associations	1 (1.0%)	1 (3.2%)	2 (3.4%)	0 (0.0%)	4 (2.0%)
State or local government	21(21.9%)	3 (9.7%)	8 (13.8%)	2 (13.3%)	34 (17.0%)
State or National Board such as CBSE etc	18 (18.8%)	6 (19.4%)	12 (20.7%)	4 (26.7%)	40 (20.0%)
WHO	27 (28.1%)	9 (29.0%)	9 (15.5%)	4 (26.7%)	49 (24.5%)
Your own school/institution	8 (8.3%)	3 (9.7%)	10 (17.2%)	1 (6.7%)	22 (11.0%)
None	1 (1.0%)	1 (3.2%)	0 (0.0%)	1 (6.7%)	3 (1.5%)
Total [n (%)]	96(100.0%)	31(100.0%)	58(100.0%)	15(100.0%)	200(100.0%)
P-value	0.644 [#]				
Which of the following groups is most likely to get infected with COVID-19					
3-15 years	1 (1.0%)	0 (0.0%)	5 (8.6%)	0 (0.0%)	6 (3.0%)
25-45 years	11 (11.5%)	0 (0.0%)	3 (5.2%)	0 (0.0%)	14 (7.0%)
45-60 years	7 (7.3%)	7 (22.6%)	10 (17.2%)	2 (13.3%)	26 (13.0%)
>60 years	45 (46.9%)	11 (35.5%)	20 (34.5%)	5 (33.3%)	81 (40.5%)
Anybody	31 (32.3%)	13 (41.9%)	19 (32.8%)	7 (46.7%)	70 (35.0%)
Don't know	1 (1.0%)	0 (0.0%)	1 (1.7%)	1 (6.7%)	3 (1.5%)
Total [n (%)]	96 (100.0%)	31 (100.0%)	58 (100.0%)	15 (100.0%)	200 (100.0%)
P-value	0.031[§]				
How can you suspect someone of having COVID-19					
Don't know (a)	1 (1.0%)	2 (6.5%)	3 (5.2%)	1 (6.7%)	7 (3.5%)
Any travel history (b)	6 (6.3%)	0 (0.0%)	2 (3.4%)	0 (0.0%)	8 (4.0%)
Cough and cold (c)	0 (0.0%)	0 (0.0%)	1 (1.7%)	0 (0.0%)	1 (0.5%)
Fever (d)	1 (1.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (0.5%)
All b, c, and d	88 (91.7%)	29 (93.5%)	52 (89.7%)	14 (93.3%)	183 (91.5%)
Total [n (%)]	96 (100.0%)	31 (100.0%)	58 (100.0%)	15 (100.0%)	200 (100.0%)
P-value	0.616 [#]				
Are you currently teaching during the COVID-19 pandemic situation or lockdown					
Yes, actively teaching but only via remote modes	79 (82.3%)	27 (87.1%)	54 (93.1%)	14 (93.3%)	174 (87.0%)
Yes, but only when asked by school authorities, via remote modes	12 (12.5%)	2 (6.5%)	3 (5.2%)	1 (6.7%)	18 (9.0%)
Yes, teaching in usual manner	1 (1.0%)	0 (0.0%)	0 (0.0%)	0(0.0%)	1 (0.5%)
No, it's a complete shut down	4 (4.2%)	2 (6.5%)	1 (1.7%)	0 (0.0%)	7 (3.5%)
Total [n (%)]	96 (100.0%)	31 (100.0%)	58 (100.0%)	15 (100.0%)	200 (100.0%)
P-value	0.725 [#]				
N: Number of respondents.					
#: Probability value non-significant; §: Probability value significant					

Table 2: Knowledge and awareness of study population about epidemic outbreak.

However, it is noteworthy that three (1.5%) respondents (including one primary teacher, one secondary/senior secondary teacher, and one management level teacher) ticked “Don’t know” (Table 2). In regards to role types, about more number of teachers at management level (46.7% out of 15 [100.0%]), followed by 41.9% middle teachers (out of 31 [100.0%]), 32.8% secondary/senior secondary teachers (out of 58 [100.0%]), and 32.3% primary teachers (out of 96 [100.0%]) correctly responded that “Anybody” can get infected with COVID19. The differences of awareness about the susceptible age group for COVID19, among respondents based on role type were statistically significant (Pvalue 0.031; Table 2).

To the question “How can you suspect someone of having COVID-19”, 7 (3.5%) respondents (including one primary teacher, two middle teachers, three secondary/senior secondary teachers, and one management level teacher) opted “Don’t know”. Majority (183; 91.5% [including 88 primary teachers, 29 middle teachers, 52 secondary/senior secondary teachers, and 14 management level teachers]) correctly opted for all i.e., any travel history, cough and cold, and fever. The differences of awareness about commonly suspected symptoms/factors associated with COVID19, among respondents based on role type were statistically insignificant (P-value 0.616; Table 2).

Further, to the question if participants were teaching during the COVID-19 pandemic situation, majority (174; 87.0%) mentioned that they were actively teaching but only via remote modes. These respondents were uniformly inclusive of about 93.3% management level teachers (out of 15 [100.0%]), 93.1% secondary/senior secondary teachers (out of 58 [100.0%]), 87.1% middle teachers (out of 31 [100.0%]), and 82.3% primary teachers (out of 96 [100.0%]), with statistically no differences among respondents based on role type (P-value 0.725; Table 2).

Perception of respondents towards organization-specific questions related to epidemic outbreak

To the question “do you think your organization is well equipped to deal with children suspected with COVID-19”, majority (111; 55.5% [including 48 primary teachers, 17 middle teachers, 39 secondary/senior secondary teachers, and 7 management level teachers]) opted “Yes”. However, 31 (15.5%) respondents mentioned “No”. These respondents were inclusive of 15 (15.6%) primary teachers (out of 96 [100.0%]), 9 (15.5%) secondary/senior secondary teachers (out of 58 [100.0%]), 5 (16.1%) middle teachers (out of 31 [100.0%]), and 2 (13.3%) management level teachers (out of 15 [100.0%]). Few of the respondents 58 (29.0%) also ticked “Maybe” with statistically no differences in perception about availability of equipments/facilities to deal with children suspected with COVID-19 in school, based on their role types (P-value 0.362; Table 2).

Likewise, in response to the question “do you think your organization is well equipped to deal with teachers suspected with COVID-19”, nearly half of the respondents (101; 51.8% [including 41 primary teachers, 15 middle teachers, 38 secondary/senior secondary teachers, and 7 management level teachers]) opted “Yes”. However, 36 (18.5%) and 58 (29.7%) respondents mentioned “No” or “Maybe” respectively. The respondents opting for “No” were inclusive of 16 (17.0%) primary teachers (out of 94 [100.0%]), 10 (17.5%) secondary/senior secondary teachers (out of 57 [100.0%]), 8 (25.8%) middle teachers (out of 31 [100.0%]), and 2 (15.4%) management level teachers (out of 13 [100.0%]). Overall, there were statistically no differences in perception about availability of equipments/facilities to deal with teachers suspected with COVID-19 in school, among respondents based on their role types (P-value 0.07; Table 3).

	Primary teacher [n (%)]	Middle teacher [n (%)]	Secondary/Senior secondary teacher [n (%)]	Management [n (%)]	Total [n (%)]
While you were teaching few days/weeks before lockdown/remote teaching, do you think your organization is well equipped to deal with children suspected with COVID-19					
Yes	48 (50.0%)	17 (54.8%)	39 (67.2%)	7(46.7%)	111 (55.5%)
No	15 (15.6%)	5 (16.1%)	9 (15.5%)	2 (13.3%)	31 (15.5%)
May be	33 (34.4%)	9 (29.0%)	10 (17.2%)	6 (40.0%)	58 (29.0%)
Total [n (%)]	96 (100.0%)	31 (100.0%)	58 (100.0%)	15 (100.0%)	200 (100.0%)
P-value	0.362 [#]				

While you were teaching few days/weeks before lockdown/remote teaching do you think your organization is well equipped to deal with teachers suspected with COVID-19					
Yes	41 (43.6%)	15 (48.4%)	38 (66.7%)	7 (53.8%)	101 (51.8%)
No	16 (17.0%)	8 (25.8%)	10 (17.5%)	2 (15.4%)	36 (18.5%)
May be	37 (39.4%)	8 (25.8%)	9 (15.8%)	4 (30.8%)	58 (29.7%)
Total [n (%)]	94 (100.0%)	31 (100.0%)	57 (100.0%)	13 (100.0%)	195 (100.0%)
P-value	0.07 [#]				
Does your school have adequate medical facilities in school premises					
Yes	60 (62.5%)	24 (77.4%)	47 (81.0%)	12 (80.0%)	143 (71.5%)
No	10 (10.4%)	4 (12.9%)	7 (12.1%)	3 (20.0%)	24 (12.0%)
May be	26 (27.1%)	3 (9.7%)	4 (6.9%)	0 (0.0%)	33 (16.5%)
Total [n (%)]	96 (100.0%)	31 (100.0%)	58 (100.0%)	15 (100.0%)	200 (100.0%)
P-value	0.012 [§]				
Does your school have a medical professional appointed to provide medical services during school hours					
Yes, school has appointed full time medical officer	21 (21.9%)	6 (19.4%)	15 (25.9%)	3 (20.0%)	45 (22.5%)
Yes, school has appointed full time pharmacist/nurse	65 (67.7%)	20 (64.5%)	23 (39.7%)	8 (53.3%)	116 (58.0%)
Yes school has part time/visiting medical officer	4 (4.2%)	0 (0.0%)	6 (10.3%)	1 (6.7%)	11 (5.5%)
Yes school has part time/visiting pharmacist/nurse	2 (2.1%)	1 (3.2%)	5 (8.6%)	2 (13.3%)	10 (5.0%)
No school does not have any such staff	4 (4.2%)	4 (12.9%)	9 (15.5%)	1 (6.7%)	18 (9.0%)
Total [n (%)]	96 (100.0%)	31 (100.0%)	58 (100.0%)	15 (100.0%)	200 (100.0%)
P-value	0.044 [§]				
Is sanitization followed in school for prevention of COVID-19					
Yes, its adequate	85 (88.5%)	25 (80.6%)	49 (84.5%)	14 (93.3%)	173 (86.5%)
Yes, but inadequate	11 (11.5%)	5 (16.1%)	5 (8.6%)	1 (6.7%)	22 (11.0%)
No sanitization is followed	0 (0.0%)	1 (3.2%)	4 (6.9%)	0 (0.0%)	5 (2.5%)
Total	96 (100.0%)	31 (100.0%)	58 (100.0%)	15 (100.0%)	200 (100.0%)
P-value	0.178 [#]				
n: Number of respondents.					
#: Probability value non-significant; §: Probability value significant					

Table 3: Responses to organization-specific questions related to epidemic outbreak.

Furthermore, majority of respondents (143; 71.5% [including 60 primary teachers, 24 middle teachers, 47 secondary/senior secondary teachers, and 12 management level teachers]) opted “Yes” as a response to the question “Does your school have adequate medical facilities in school premises”. This was inclusive of 12 (80.0%) respondents (out of 15 [100.0%]) were from manage-

ment category who opted for “yes”. However, it is noteworthy that 24 (12.0%) and 33 (16.5%) respondents ticked “No” or “Maybe” respectively. Overall, there was statistically significant difference in perception about availability of adequate medical facilities in school premises, among respondents based on their role types (P-value 0.012; Table 3).

Similarly, in response to the question “Does your school have a medical professional appointed to provide medical services during school hours”, majority of respondents (161; 80.5%) responded that “Yes”. Of which 45 (22.5%) mentioned that their school has appointed full time medical officer while 116 (58.0%) mentioned that their school has appointed full time pharmacist/nurse. Noteworthy is that 18; 9.0% (inclusive of 4 primary teachers, 4 middle teachers, 9 secondary/senior secondary teachers, and 1 management level teachers) mentioned that “No”, the school does not have any such staff. Also, the perception about the provision of medical services during school hours significantly different among respondents based on their role types (P-value 0.044; Table 3).

In response to the question “is sanitization followed in school for prevention of COVID-19”, majority of respondents 173; 86.5% mentioned that “Yes, its adequate”. However, 22 (11.0%) mentioned that “its inadequate”, while 5 (2.5%) mentioned that “No sanitization is followed”. The perception about the sanitization being followed in school for prevention of COVID-19 was not significantly

different among respondents based on their role types (P value 0.0178; Table 3).

Perception and practices of responders about epidemic outbreak

There were mixed response to the question “who all according to you should be liable to pay in case any teacher gets infected with COVID-19 while teaching” (Table 4). About 27.5% (n = 55) of all respondents opted for health insurance company, 96 (48.0%) mentioned School authorities, and 42 (21.0%) even responded that teacher itself to be most apt. Further, 2 (1.0%) specified that school authorities must pay as much as it is possible for them while, “school authorities should support as much as it is possible for them”, or “if it has occurred in school time then school authorities or if outside school then teacher itself” and even that “it depends how she/he infected from”, was also specified by 1 (0.5%) respondent each. There were no statistically significant differences in opinions on this based on role type (Pvalue 0.757; Table 4).

	Primary teacher [n (%)]	Middle teacher [n (%)]	Secondary/Senior secondary teacher [n (%)]	Management [n (%)]	Total [n (%)]
Who all according to you should be liable to pay in case any teacher gets infected with COVID19 while teaching					
Depends how she/he infected from ?	0 (0.0%)	1 (3.2%)	0 (0.0%)	0 (0.0%)	1 (0.5%)
Government	1 (1.0%)	0 (0.0%)	1 (1.7%)	0 (0.0%)	2 (1.0%)
Health insurance company	29 (30.2%)	6 (19.4%)	13 (22.4%)	7 (46.7%)	55 (27.5%)
If in school time then school authorities or if outside school then teacher itself	1 (1.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (0.5%)
School authorities	42 (43.8%)	18 (58.1%)	30 (51.7%)	6 (40.0%)	96 (48.0%)
School authorities must do as much as it is possible for them!	2 (2.1%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	2 (1.0%)
School authorities should support as much as it is possible for them	1 (1.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (0.5%)
Teacher itself	20 (20.8%)	6 (19.4%)	14 (24.1%)	2 (13.3%)	42 (21.0%)
Total [n (%)]	96 (100.0%)	31 (100.0%)	58 (100.0%)	15 (100.0%)	200 (100.0%)
P-value	0.757#				
How frequently do you wash your hands with soap					
2-3 times a day	9 (9.4%)	4 (12.9%)	6 (10.3%)	4 (26.7%)	23 (11.5%)
Before and after meals	1 (1.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (0.5%)
Wash repeatedly as frequent as possible	74 (77.1%)	25 (80.6%)	46 (79.3%)	11 (73.3%)	156 (78.0%)
Before & after washroom & meals	12 (12.5%)	2 (6.5%)	6 (10.3%)	0 (0.0%)	20 (10.0%)
Total [n (%)]	96 (100.0%)	31 (100.0%)	58 (100.0%)	15 (100.0%)	200 (100.0%)
P-value	0.619#				

Do you use hand sanitizers					
No not at all	8 (8.3%)	1 (3.2%)	3 (5.2%)	0 (0.0%)	12 (6.0%)
Yes 2-3 times a day	41 (42.7%)	9 (29.0%)	27 (46.6%)	8 (53.3%)	85 (42.5%)
Yes repeatedly	47 (49.0%)	21 (67.7%)	28 (48.3%)	7 (46.7%)	103 (51.5%)
Total [n (%)]	96 (100.0%)	31 (100.0%)	58 (100.0%)	15 (100.0%)	200 (100.0%)
P-value	0.413 [#]				
Do you use any mouth masks					
No	8 (8.3%)	0(0.0%)	1 (1.7%)	1 (6.7%)	10 (5.0%)
Yes keep wearing most of the times all day	11 (11.5%)	7 (22.6%)	8 (13.8%)	1 (6.7%)	27 (13.5%)
Wear only when go to crowded place	31 (32.3%)	8 (25.8%)	20 (34.5%)	4 (26.7%)	63 (31.5%)
Wear only when caring for COVID suspected person	0 (0.0%)	0 (0.0%)	1 (1.7%)	0 (0.0%)	1 (0.5%)
Wear only when I have cough or cold	2 (2.1%)	1 (3.2%)	0 (0.0%)	0 (0.0%)	3 (1.5%)
All c, d and e	44 (45.8%)	15 (48.4%)	28 (48.3%)	9 (60.0%)	96 (48.0%)
Total [n (%)]	96 (100.0%)	31 (100.0%)	58 (100.0%)	15 (100.0%)	200 (100.0%)
P-value	0.582 [#]				
When you suspect a child with COVID-19, What would you do					
Report to school authorities (a)	9 (9.4%)	4 (12.9%)	9 (15.5%)	1 (6.7%)	23 (11.5%)
Call parents and send child back (b)	1 (1.0%)	0 (0.0%)	1 (1.7%)	2 (13.3%)	4 (2.0%)
Report to nearest state health centres (c)	5 (5.2%)	3 (9.7%)	5 (8.6%)	0 (0.0%)	13 (6.5%)
Nothing (d)	18 (18.8%)	2 (6.5%)	8 (13.8%)	1 (6.7%)	29 (14.5%)
Both a and b	63 (65.6%)	22 (71.0%)	35 (60.3%)	11 (73.3%)	131 (65.5%)
Total [n (%)]	96 (100.0%)	31 (100.0%)	58 (100.0%)	15 (100.0%)	200 (100.0%)
P-value	0.112 [#]				
Do you think normal teaching practices could be resumed once lockdown is completed					
It depends on the govt guide lines , which depends on the how quickly the situation becomes normal	0 (0.0%)	0 (0.0%)	1 (1.7%)	0 (0.0%)	1 (0.5%)
No, all the COVID-19 prevention measures shall have to be continued and incorporated into routine practice	69 (71.9%)	16 (51.6%)	32 (55.2%)	5 (33.3%)	122 (61.0%)
No, school sanitization practices shall have to be continued	14 (14.6%)	7 (22.6%)	11 (19.0%)	0 (0.0%)	32 (16.0%)
Open with half students /day so infection chances could get decreased	0 (0.0%)	0 (0.0%)	1 (1.7%)	0 (0.0%)	1 (0.5%)
Yes	13 (13.5%)	8 (25.8%)	13 (22.4%)	10 (66.7%)	44 (22.0%)
Total [n (%)]	96 (100.0%)	31 (100.0%)	58 (100.0%)	15 (100.0%)	200 (100.0%)
P-value	0.003 [§]				
n: Number of respondents.					
#: Probability value non-significant; §: Probability value significant					

Table 4: Perception of study population about epidemic outbreak.

To the question “how frequently do you wash your hands with soap”, majority (156; 78.0%) mentioned that they “wash repeatedly as frequent as possible” with no statistically significant differences in hand washing practice among respondents based on role type (Pvalue 0.619; Table 4). Further, in response to the question “do you use hand sanitizers”, nearly half (103; 51.5%) mentioned that “yes” they “repeatedly” use, while 12 (6.0%) mentioned “No, not at all”, with no statistically significant differences in hand sanitization practice among respondents based on role type (Pvalue 0.413; Table 4).

In response to the question “When you suspect a child with COVID-19, What would you do”, most respondents (131; 65.5%) mentioned that they will “report to school authorities, and call parents and send child back”, while 29 (14.5%) mentioned that they would do “nothing”, with no statistically significant differences in awareness and perception on practice to be followed when one suspect a child with COVID-19, among the respondents based on role type (Pvalue 0.112; Table 4).

In response to the question “do you think normal teaching practices could be resumed once lockdown is completed?”, 122 (61.0%) responded “No, all the COVID-19 prevention measures shall have to be continued and incorporated into routine practice”. However, 44 (22.0%) responded “yes”, which was inclusive of 10 (66.7%) respondents (out of 15 [100.0%]) from management category. The perception on resuming of normal regular teaching practices was statistically different among respondents based on role type (Pvalue 0.003; Table 4).

Discussion

The present study provides an insight on knowledge and awareness of the teaching professional about the outbreak of COVID-19 and highlights the gap areas knowledge and awareness in their about the same. The study also provides an overview to the perception of these professionals towards the COVID-19 outbreak. To the best of authors’ knowledge, no study in literature worldwide has assessed the areas knowledge awareness and perception of teaching professionals about COVID-19 outbreak, hitherto. The present study is first to assess the same.

Knowledge and awareness of responders about epidemic outbreak

School teachers or education professionals are one of the intellectual groups in the society. If trained well, they can play an important role in reducing health emergencies or disaster risk in community. Also, they can contribute towards educating children and their families on preventive and safety measures. This will con-

tribute towards healthy and disaster safe society [3-5]. However, Rao A., *et al.* (2014) in their survey on school teachers in Mangalore (India) astonishingly reported that almost 90% of the teachers had not received any formal training in the management of health emergencies [3]. Tuladhar G., *et al.* (2015) also reported that school teachers in Nepal are not fully aware of disaster/emergency risk reduction [5]. Likewise, in the present study, it was noted that 66.0% of the teachers had never received any of the training pertaining to health emergency or disaster response and preparedness. Further, for even the most (n = 22) of remaining 34% who got such training, > 5 years had been elapsed since they underwent these. This suggests the need for continual training these professionals so that they are prepared for any such unprecedented situations. Further, there was no significant difference in respect to training among the professional based on the role type (P-value 0.083; Table 2). This suggests that there is not much knowledge difference between management level and other teachers and all are at similar platform. However, during such unprecedented crisis it is generally expected from people at management position to come forward and take a lead to help the organization and society to sail through by their quick and wise action to deal with the situation in best possible manner. This necessitates even more regular stringent training protocols for these professionals. Calderon LJ (2010) also discussed the importance and need for training on Emergency Health Management and Community Preparedness. Asian Disaster Preparedness Center therefore have developed and implemented a range of training programs at regional, national, sub national and community levels, for management of emergencies, epidemic, and pandemic, etc [6].

The International Federation of the Red Cross (IFRC), UNICEF and the World Health Organization (WHO) in March 2020 issued guidance to help protect children and schools from transmission of the COVID-19 virus [7]. Recently, CDC also released community mitigation framework consisting of actions that individuals, businesses, health departments, and community settings (such as schools) can take to slow down the spread of COVID-19 [8]. The Ministry of Human Resource Development (MHRD), India, have released advisory for the psychosocial support and mental health promotion for school students and teachers during COVID-19 [9]. It was seen in the present study that teachers had varied opinions on the most appropriate bodies to release guidelines/advisories or any key messages for teaching professionals for Indian schools during a pandemic/epidemic/massive disease outbreak. Ideally, during such pandemic crisis, bodies like ministry of human resource development, NCERT, state or national board such as CBSE etc. should come forward and provide guidance and help imple-

menting health policies in schools/educational organization. In addition, specific local/national teachers associations and/or in collaboration with school/institutions should also proactively make efforts in this direction.

COVID-19 is an illness caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). It has been reported to occur in all age groups. The incidence increases with age, with older adults at highest risk [2]. The initial reports from China, followed by data from several countries in Europe, have highlighted that there are roughly similar numbers of confirmed SARS-CoV2 cases between men and women. The severity of COVID-19, as measured by hospitalization, admission to intensive care units, and rates of fatality, however, has consistently been 2-fold greater for men than women [10,11]. In a retrospective study on 1099 patients with laboratory-confirmed COVID-19 in China, the most commonly seen symptom includes fever (43.8% on admission and 88.7% during hospitalization) and cough (67.8%) [12]. Diarrhea was reported to be uncommon (3.8%). The median incubation period noted was 4 days (interquartile range, 2 to 7) [12]. On admission, ground-glass opacity was the most common radiologic finding on chest computed tomography (CT) was reported in 56.4% of patients [12]. No radiographic or CT abnormality was found in 17.9% and 2.9% of patients with non-severe disease and severe disease respectively. Lymphocytopenia was reported in 83.2% of the patients on admission [12]. An observational study on 1420 patients with mild or moderate disease indicated that the most common symptoms were headache (70.3%), loss of smell (70.2%), nasal obstruction (67.8%), cough (63.2%), asthenia (63.3%), myalgia (62.5%), rhinorrhea (60.1%), gustatory dysfunction (54.2%) and sore throat (52.9%) [13].

In the present study, 91.5% respondents correctly answered how to suspect COVID-19 infection. However, 3.5% respondents mentioned 'Don't know', suggesting some gap in their knowledge and awareness. The percentage of management people in was higher for correct option and show that they are slightly more updated on this (Pvalue 0.031; Table 2). However, during such pandemic situations, people at every level must keep themselves updated. Thus the present study highlights the need to educate teachers and make them aware about the disease. During this pandemic situation when social distancing is an important mode of prevention and lockdown is there in many countries including Italy, Norway, Kuwait, Czech Republic, India, etc.; remote working has become a new normal [14]. Accordingly, most of teachers in present study had adopted remote mode of teaching with no differences in role type (P-value 0.725; Table 2).

Perception of respondents towards epidemic outbreak (Both organization-specific questions and individual perception and practices)

As per the CBSE affiliation bye laws, the schools must have availability of a school doctor/health officer (appropriate person to look after the health conditions). Further, the schools must have provision for medical check-up and arrange them for students at least once a year and keep a proper record of the same. Schools must promote the physical well being of the children, ensure high standard of cleanliness and health habits, and should arrange periodical medical examinations of the students and send medical reports to parents or guardians [15]. In the present study, 55.5% and 51.8% respondents mentioned that their schools are adequately equipped to deal with children and teachers suspected with COVID-19, respectively. However, according to 15.5% and 18.5% respondents their schools were not well equipped for the same; while 29.7% were unsure of the same. Similarly 12.0% and 16.5% respondents either mentioned that their schools do not have adequate medical facilities or were unsure about it. Nine percent (9.0%) of respondents even mentioned that their school did not have any medical officer or auxiliary staff. This identifies the inadequate health facilities in Indian schools.

As per WHO guidelines, if anyone in your vicinity shows symptoms of COVID-19, seek medical care, and follow the instructions from the health care provider. When possible, it's best to keep suspect away from others i.e. isolated. However, it is important to follow the guidance of local and national authorities. In the present study, about 14.5% respondents were unaware of proper way of dealing with child suspected with COVID-19.

Ideally, if a person having medical health insurance encounters COVID-19, then the insurance company is liable to pay the sum that has been insured as per the policy. However, this remains uncertain hitherto. The respondents in present study also had varied opinions on this. As there are limited treatment options and no vaccine is available for COVID-19, until now. Therefore, prevention is only way to reduce risk. Preventive measures include proper social distancing, utilization of masks and regular hand washing and sanitization and maintenance of hygiene. In the present study most of respondents were aware of preventive measures and were following them.

Further according to 61.0% respondents in present study, normal teaching practices could not be resumed once lockdown is completed. They mentioned that all the COVID-19 prevention measures shall have to be continued and incorporated into routine practice. However, 66.7% respondents from management category

perceived that normal regular teaching practices could be resumed (Pvalue 0.003; Table 4).

In a survey by Geldsetzer P (2020) on the general public in the United States and the United Kingdom, the participants although had good knowledge of common symptoms of COVID-19, but, the survey also identified several important misconceptions among them on how to prevent acquisition of COVID-19, including beliefs in falsehoods that have circulated on social media [16]. Likewise, the respondents in present study also exhibited certain level of knowledge and awareness on COVID-19 due to exposure to television news and social media. However, there were some gap areas also that need to be addressed by adequate training of the education and teaching professional so that they can aid better in prevention and control of epidemic outbreak such as COVID-19. However, small and non-uniform distribution of study population was the limitations of the study.

Conclusion

Within its limitations, the study highlights the need for adequate training of the education and teaching professional so that they can be utilized as resources for prevention and control of epidemic outbreak such as COVID-19.

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Conflict of Interest

The authors declare that there is no conflict of interest.

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