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Short Communication

An exploratory study to assess the acceptance and attitude towards COVID-19 vaccination among school-going adolescents aged 15-17 years in selected schools of Nadia district

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ABSTRACT

The vaccination along with COVID appropriate behaviour plays a key role to decrease the spread of infection in all age groups. The present study aimed at assessing the acceptance and attitude of school-going adolescents aged between15-17 years who recently became eligible to be part of the COVID-19 mass vaccination drive in India along with matching up the COVID appropriate behaviour. A cross-sectional survey-based study was conducted in February 2022 among 300 school-going adolescents aged between 15-17 years selected through multi-stage sampling. A self-reported questionnaire survey instrument in the Google form was used to collect the data. A total of 260 adolescents responded with a response rate of 86.7%. Most of the participants were female (64.2%). The majority of adolescents (80%) had already taken the COVID-19 vaccination at the time of the survey. Very few adolescents had doubts regarding the safety of the vaccine (0.7%). Around 74.6% of adolescents had a good attitude towards COVID-19 vaccination with a mean score of 20.6±2.4. More than half of the adolescents (58%) reported good practice related to COVID appropriate behaviour (CAB) with a mean score of 48.2±6.2. The majority of school-going adolescents had a good attitude and acceptance towards the ongoing vaccination drive and reportedly observed good CAB practices. Long-term COVID-19 preventive approaches along with vaccination need to be employed to support the wellbeing of adolescents.

Keywords: COVID-19, Vaccination, School going years adolescents, acceptance, attitude, COVID appropriate behaviour

INTRODUCTION

The world has faced the brunt of repeated COVID-19 pandemic waves, affecting the entire population including children, since the declaration of the COVID-19 pandemic by the World Health Organization (WHO)in January 2020.[1] Due to the highly infectious nature of the disease, the schools were completely shut down in the last two years, adversely affecting the education of the students. During the COVID-19 pandemic, the students were primarily learning through online mode, which has its limitations.[2]

The vaccination along with adherence to the COVID appropriate behavior has been identified as the key factor in controlling and preventing COVID-19 infection.[3] Fewer cases, less than 7%, were reported globally among older children and young adolescents. Global deaths were even less among individuals aged less than 25 years (0.5%).[1] With high infection load and mortality among the older people, the initial focus was to vaccinate the adults including those with co-morbid illnesses. However, with the emerging evidence of vaccine safety in adolescents, individuals between 15 to l7 years of age have been considered for vaccination globally. During the

third wave of a pandemic, the Government of India took an initiative to start with the vaccination of adolescents between 15 to l7 years of age from 3 January 2022. In view of the recent vaccination drive covering the adolescents between 15 to 17 years, it is important to find out what do the adolescents feel about the vaccination drive, their acceptance, and their attitude towards the vaccination. Acceptance in this study was defined as the willingness to take COVID-19 vaccination, while attitude toward the COVID-19 vaccine was assessed with the agreeable or disagreeable statements related to the COVID-19 vaccine. The secondary aim of the study was to assess COVID-appropriate behavior of school-going adolescents.

METHODS

A cross-sectional survey-based study was conducted to assess the acceptance and attitude of school-going adolescents aged 15-17 years towards COVID-19 vaccination. Ethical permission was obtained from the Institutional Ethical Committee of AIIMS Kalyani. Kalyani is a municipality area situated 50 kilometres away from the metropolitan city of Kolkata. There were 13 schools where students aged 15-17 years were enrolled. Due to the non-availability of a similar kind of study among adolescents in India, we assumed a 50% of vaccination acceptance rate among adolescents aged 15-17 years. With α=0.05; 80% of power and 15% of relative precision, the initial sample size was 178. As cluster randomized sampling strategy was adopted, a design effect of 1.5 was multiplied. Assuming a 10% of non-response rate, the desired sample size was 300. To get 300 students, we decided to include 50 students from six schools situated at Kalyani. The schools (n=6) were selected randomly from the list of 13 schools using a computer-generated random number. Fifty students were selected randomly from each selected school.

A self-reported questionnaire survey instrument in the Google form was used to collect the data. The tool had four major sections. Section A included the demographic profile of adolescents, their health, and any past history related to COVID-19 infection. Section B had items related to acceptance toward COVID-19 vaccination as well as reasons towards unwillingness if any. Section C assessed the attitude of adolescents towards COVID-19 vaccination on a three-point Likert scale; agree (3), neutral (2), disagree (1) containing eight items with the maximum possible score of 24 and a minimum of 8. Section D had 11 statements related to CAB practice, based on guidelines developed by the ministry of health and family welfare (MOHFW), Government of India. Each statement was given a score based on reported practices as always (5), most of the time (4), occasionally (3), rarely (2), never (1). The maximum possible self-reported practice score was 55 and the minimum was 11. The survey instrument took 10-15 minutes to fill. Survey instrument's validity was established by five subject experts. The tool was tried out among 10 adolescents to assess the appropriateness and comprehensibility. Necessary modifications in terms of the wording of statements/items were made before final administration. Parents of the 300 adolescents were informed about the survey by the school authorities. An online consent was obtained from the parents for the adolescents' participation in the study. An online assent was also obtained from the adolescents before the data collection. A google form link was shared with the adolescents for collecting the information. The collected data from Google form was exported into Microsoft excel sheet. The data were analyzed using SPSS version 26.0. The categorical variables were presented in frequency and percentage, while continuous variables were presented as mean and standard deviation (SD). The Chi-square test was computed as part of the inferential statistics to evaluate the association among various parameters. The p value of less than 0.05 was considered as significant.

RESULTS

A total of 260 adolescents responded with a response rate of 86.7% (n=300).

Demographic data

Mean (SD) age of the adolescents was 16.0±0.8 years. Out of 260 adolescents, most of the participants were female (64.2%). Two-third (66.9%) of the students were from government institutions and belonged to the nuclear family (65.8%). Majority of the students belonged to low socioeconomic status (according to modified Kuppuswamy scale).[4] having a family income of Rs. 3908-19515 per month (41.5%). The reported health status of the adolescents revealed that 6.1% of adolescents had bronchial asthma, while 2.6% had epilepsy and were under treatment. 20.7% adolescents reported of history of allergy and 36.1% of adolescents had given a history of having received influenza vaccination in the past. The two major sources of information for the adolescents on COVID -19 vaccinations were mainly television (41.5%) and the internet (36.9%). Around 16% significant number of adolescents was infected with COVID-19 during the third wave and 32.3%reportedof having COVID-19 infection among their family members. Almost 1/10th of the study participants had lost one or more close family members in the past three COVID-19 pandemic waves.

Acceptance of COVID 19 vaccine

The majority of the adolescents (80%) had already taken the COVID-19 vaccination at the time of the survey. The reasons cited by adolescents for getting vaccinated were "as recommended by the Government of India" (22.7%), "seeing many people around getting infected with COVID-19 infection" (21.5%), "scared about themselves getting infected with COVID-19 infection" (19.%), "did not want to neglect studies" (14.4%), "recommended by the family members" (12.9%), "recommended by school

authority" (9.4%). In contrast, a very few adolescents who had doubts regarding the safety of the vaccine (0.76%) reportedly gave the reason for unwillingness to receive the COVID-19 vaccination.

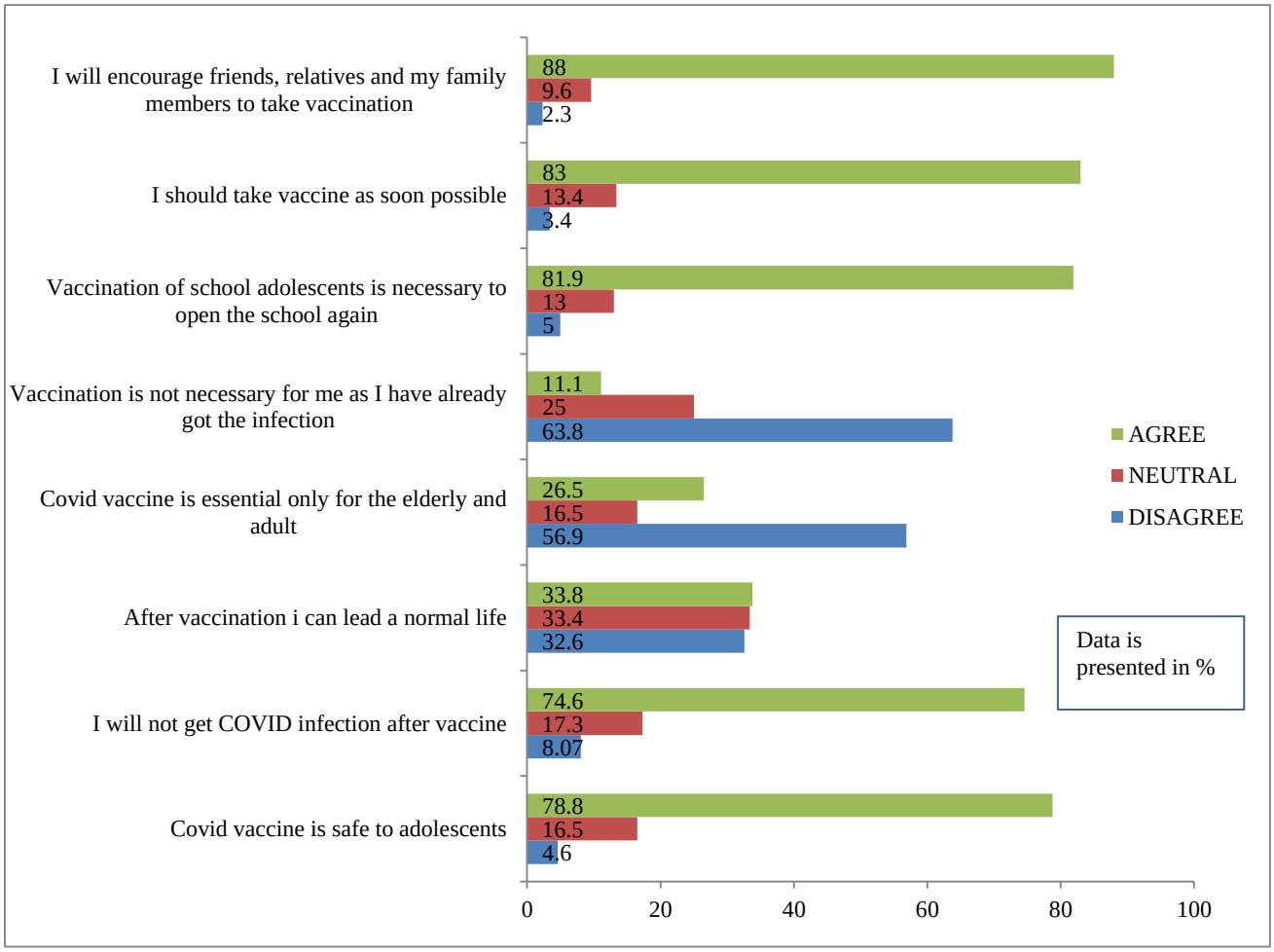

Figure 1: Attitude of adolescents towards COVID vaccination.

The majority of adolescents (92.7%) knew that vaccination is being provided free of cost at government health facilities and had accessibility to vaccination in nearby places (90%). The attitude and practices of the young adolescents are described in (Figure 1, Table 1). Around 74.6% of adolescents had a good attitude towards COVID-19 vaccination with a mean score of 20.6±2.4, followed by 23.4% had average attitude and a few (1.9%) had a poor attitude towards vaccination. More than half of the adolescents (58.0%) reported good practice related to CAB with a mean score of 48.2±6.2. 39.6% adolescents reported average practice, while a small number of adolescents (2.3%) were reported poor CAB practices. In response to an open-ended question on the accepted mode of learning, the majority of adolescents preferred to study through offline mode. They were looking forward to the opening of the schools. Most of the adolescents (74.6%) opined that they would get no infection or milder infection after the vaccination and can lead a normal life along with CAB. With respect to association of acceptance, attitude, and practices of young adolescents with the selected variable, we observed that gender and the age of the adolescents had significant association with the attitude towards vaccination and practice related to the CAB ($p<0.05$). Similarly, vaccine accessibility and being provided free of cost had significant association with the attitude and COVID appropriate behavior ($p<0.05$). No significant association of knowledge, attitude, and acceptance could be observed with the other selected variables like the type of school, religion, type of family, place of residence, monthly family income ($p>0.05$).

DISCUSSION

The major findings of the study revealed that the majority of the adolescents had a good attitude, and acceptance towards vaccination with good CAB practices. The gender and the age of the adolescents had significant association with the attitude towards vaccination and vaccine accessibility and being provided free of cost had significant association with the attitude and CAB practice ($p<0.05$). Vaccine acceptability is mainly determined by three factors i.e. confidence, convenience, and complacency.[3]

Table 1: Factors associated with the attitude towards COVID-19 vaccine and practice of COVID appropriate behaviours.

Variables		Attitude towards COVID-19 vaccine			COVID appropriate behavior		
		Good N (%)	Poor N (%)	P value	Good N (%)	Poor N (%)	P value
Age (years)	15	60 (23)	12(4.7)	0.01	67 (25.8)	5 (1.9)	0.63
	16	88 (33.8)	3 (1.2)		81 (31.2)	10 (3.8)	
	17	88 (33.8)	9 (3.5)		86 (33.1)	11 (4.2)	
Sex	Male	77 (29.7)	16 (6.3)	0.00	77 (29.6)	16 (6.2)	0.01
	Female	159 (61.2)	7 (2.8)		156 (60)	11 (4.2)	
Religion	Hindu	226 (87)	22 (8.5)	0.50	225 (86.6)	23 (8.9)	0.25
	Muslim	07 (2.6)	01 (0.4)		05 (1.9)	03 (1.1)	
	Others	03 (1.1)	01 (0.4)		04 (1.5)	00 (00)	
Class standard	9th	17 (6.5)	04 (1.5)	0.05	21 (8.0)	00 (00)	0.53
	10th	99 (38)	12 (4.6)		99 (38)	12 (4.6)	
	11th	89 (34.3)	03 (1.2)		83 (32)	09 (3.5)	
	12th	31 (12)	05 (1.9)		31 (12)	05 (1.9)	
Residence	Rural	46 (17.7)	04 (1.5)	0.73	43 (16.5)	07 (2.7)	0.45
	Urban	190 (73.1)	20 (7.7)		191 (73.5)	19 (7.3)	
Type of school	Government	159 (61.1)	15 (5.8)	0.66	155 (59.6)	19 (7.3)	0.76
	Private	73 (28.1)	08 (3.1)		75 (28.9)	06 (2.3)	
	Semi-government	04 (1.5)	01 (0.4)		04 (1.5)	01 (0.4)	
Type of the family	Nuclear	158 (60.8)	13 (5)	0.20	157 (60.4)	14 (5.4)	0.24
	Joint	78 (30)	11 (4.2)		77 (29.6)	12 (4.6)	
Head of the family	Father	171 (65.8)	14 (5.4)	0.57	168 (64.7)	17 (6.6)	0.98
	Mother	16 (6.2)	02 (0.8)		16 (6.2)	02 (0.7)	
	Grandfather	20 (7.7)	03 (1.1)		20 (7.7)	03 (1.1)	
	Grandmother	26 (10)	04 (1.5)		26 (10)	04 (1.5)	
	Other	03 (1.1)	01 (0.4)		04 (1.5)	00 (00)	
Monthly income of the family member (Rs.)	<3907	38 (14.6)	05 (1.9)	0.97	40 (15.3)	03 (1.1)	0.61
	3908-19515	96 (37)	10 (3.8)		97 (37.4)	09 (3.5)	
	19516-39032	27 (10.4)	02 (0.8)		25 (9.7)	04 (1.5)	
	39033-78062	42 (16.2)	04 (1.5)		39 (15)	07 (2.7)	
	>78063	33 (12.7)	03 (1.1)		33 (12.7)	03 (1.1)	
History of influenza vaccine	Yes	88 (33.8)	06 (2.3)	0.23	84 (32.4)	10 (3.8)	0.69
	No	148 (57)	18 (6.9)		150 (57.7)	16 (6.1)	
History COVID-19 infection of the participants	Yes	39 (15)	03 (1.1)	0.61	36 (13.9)	06 (2.3)	0.48
	No	197 (75.8)	21 (8.1)		198 (76.2)	20 (7.6)	
History COVID-19 infection of the family members	Yes	78 (30)	06 (2.3)	0.42	73 (28)	11 (4.3)	0.33
	No	158 (60.8)	18 (6.9)		161 (61.9)	15 (5.8)	
History of loss of family members due to COVID-19 infection	Yes	28 (10.8)	02 (.8)	0.60	26 (10)	04 (1.5)	0.71
	No	208 (80)	22 (8.4)		208 (80)	22 (8.5)	
Vaccine accessibility in nearby places	Yes	217 (83.5)	17 (6.5)	0.00	213 (82)	21 (8.0)	0.00
	No	19 (7.3)	07 (2.7)		21 (8)	05 (2)	
Vaccination provided free of cost	Yes	221 (85)	20 (7.7)	0.06	219 (84.3)	22 (8.4)	0.00
	No	15 (5.8)	04 (1.5)		15 (5.8)	04 (1.5)	

There are few available studies that have explored the acceptance, attitude towards COVID vaccination, and practices of adolescents during COVID-19. Two surveys done among school-going children showed that nearly half of them were willing to take the vaccine, remaining were either undecided or unwilling to take the vaccination.[3-6] Another survey conducted in the United States (US) showed that a significant number of parents were uncertain and wanted to observe the wait and watch policy as they didn't want to expose their teens to anything that might have long-term effects.[7] In contrast, the present study results reveal that majority of the adolescents had a good attitude and acceptance towards the vaccination. The high acceptance rate among the

adolescents can be attributed to the rolling of mass vaccination by the authorities and the experienced boredom while being at home for more than 2 years. The adolescents reportedly were looking forward to the opening of the schools after a long gap, studying all those years through online mode. Easy accessibility in terms of the vaccination centers available in the hospitals and nearby schools may be a reason for the high vaccination rate among adolescents. Alqudeimat et al reported that the male population was more inclined towards vaccination, while in our study, the female adolescents had a relatively higher attitude towards vaccination as compared to their counterparts.[6] The acceptability of the COVID-19 vaccination among adolescents and parents depends upon trusted information on the safety and efficacy of vaccination received by them.[7] In the present study, adolescents got information related to the COVID-19 vaccine from television, internet, print media, and the health care professionals (HCP). It becomes the responsibility of the media and the health care facility to provide truthful information about the vaccination. The present study has some limitations. We have included students from few of the schools of a municipality area which could not be the true representative of the schools of West Bengal. The survey was conducted on online mode which could have produced some biased answers. Similar study may be replicated on a large scale and triangulation of the objective data may be verified with the qualitative data.

CONCLUSION

The majority of adolescents had a good attitude and acceptance towards the ongoing vaccination drive and reported good CAB practices. They expressed that along with vaccination strict adherence to COVID appropriate behavior should be observed. Long-term COVID-19 preventive approaches along with vaccination need to be employed to support the wellbeing of adolescents.

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