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ORIGINAL ARTICLE

Hand hygiene status among vaccine beneficiaries attending Covid-19 vaccination Centre BRD Medical College, Gorakhpur

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ABSTRACT

Introduction: A large fraction of the world's illness and death is attributable to communicable diseases. Proper hand washing is one of the simplest, most affordable and effective means of stopping the spread of infection. Ongoing pan India vaccination drive against covid-19 may provide an opportunity to take a small step to educate people regarding hand hygiene and thereby obtaining a large impact on transmission of covid-19 and many communicable diseases. Understanding the knowledge, attitude and practices regarding hand hygiene in the community is essential to bring forth a sustained change in behavior of individuals to improve such practices when designing interventions to combat COVID-19 as well as for overall health. **Objectives:** To assess the Knowledge, Attitude and Practice (KAP) of hand hygiene among vaccine beneficiaries attending covid-19 vaccination center and to find out the barriers regarding hand hygiene. Imparting health education. **Material and Methods:** A cross sectional epidemiological observational study was conducted among vaccine beneficiaries attending covid-19 vaccination center using pre-designed and pretested Questionnaire to assess awareness, knowledge, attitudes and Practice related to hand hygiene. **Result:** Total 344 individuals participated in the survey including 196 male and 148 females. Majority of the participants had fair to good total KAP score. **Conclusion:** Continuous and regular training is one of the necessary interventions to promote hand hygiene in general public. It is also necessary to identify the factors involved in promoting a positive perception and attitude among people about hand hygiene. Hygiene related training sessions may need to be conducted more frequently for community. Groups with lower KAP levels should be provided with more information and support to promote appropriate disease prevention practices.

Key Words: KAP, Covid-19, vaccination, hygiene

Introduction

A large fraction of the world's illness and death is attributable to communicable diseases.[1] According to World Health Organization (WHO) estimates, 3.5 million children aged less than five die each year from diarrhea and acute lower respiratory tract infections.[2] Clean water and hand-washing are viewed as the most cost-effective intervention for preventing diarrheal diseases.[3] Person to person transmission of covid-19 is ongoing making it necessary to control and avoid its rapid spread. To ensure successful disease control, people's adherence to preventive and control measures are of paramount importance. Different studies showed that hand washing can decontaminate hands and prevent cross-transmission.[4]

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The current health crisis has made everyone realize the importance of maintaining personal hygiene. Hand hygiene is a general term referring to any action of hand cleansing by using water and detergent and/or the use of alcohol-based hand sanitizers for the removal of transient microorganisms from hands.[5] Hand washing is regaining popularity during the current covid-19 pandemic where media, governments and NGOs are spreading awareness regarding hand hygiene, physical distancing etc as part of Covid Appropriate Behavior (CAB). People mostly agree that hand hygiene is of critical importance, but numerous studies have shown that adherence to hand hygiene recommendations remains low and that improvement efforts frequently lack sustainability.[6] Understanding the knowledge, attitude and practices regarding hand hygiene in the community is essential to bring forth a sustained change in behavior of individuals to improve such practices when designing interventions to combat COVID-19 as well as overall health. Covid appropriate behavior is also advised to those who has been vaccinated because vaccinated person can still transmit covid-19. A small step taken may have a large impact on controlling covid-19 transmission. Additionally, the current burden of the spreading Covid-19 implied an action to review our basic strategies in hand hygiene practices. Keeping this in view the present study was taken up to evaluate the current status of knowledge, attitude and practices relating to hand hygiene of community.

Material and methods

Study Design: Cross sectional, online survey using Google form.

Study Unit: A vaccine beneficiary attending Covid-19 vaccination Centre, BRD Medical College, Gorakhpur, UP.

Study period: From April 2021 to May 2021

Inclusion Criteria: Any person attending covid vaccination centre of age 18 and above was eligible to participate. Participants were required to have an internet connection, to voluntarily participate in an online questionnaire, and to be able to read, understand, and answer the provided questions.

Exclusion Criteria: Participants who didn't consented in the study and those who wished to discontinue their participation were allowed to do so without any restriction.

Study tools: Due to rapid serge in covid-19 cases in April 2021 physical interview method was not appropriate during the pandemic; therefore, an online survey was conducted using Google form. A semi-structured questionnaire on hand hygiene was designed and pretested at Department of Community Medicine, BRD Medical College in consultation with the principal investigator & co investigator. The questionnaire was framed to collect information on demography, knowledge, attitude, practices, and perceived barriers towards hand hygiene. The survey questionnaire was prepared in English and forward translation was done by a bilingual then another bilingual performed a backward translation; the translated versions were compared and checked until a final draft was agreed on. We checked the internal consistency of the questions by calculation of Cronbach's alpha using the data from 30 responses; these 30 responses were not included in the final analysis.

Data collection: Participants' involvement in the study was voluntary. Confidentiality was maintained throughout the study by avoiding use of name and other identifiers. Beneficiaries' mobile numbers were obtained from dataset where their details were kept during entry in COWIN portal. The questionnaire administration took about 5 minutes to complete. The respondents were provided the link of the Google form survey and requested to fill it without discussing with one another. This page contained a brief introduction to the background, objective, procedures, voluntary nature of participation, declarations of anonymity and confidentiality, and notes for filling in the questionnaire. After data collection and vaccination of beneficiaries, health education regarding hand hygiene was given in waiting area where vaccines were supposed to wait for 30 minutes for observation. We

played a short video showing WHO steps of hand washing and answered questions of vaccines. We also displayed some posters about hand hygiene in observation area. The training programs were conducted to raise awareness among the vaccine beneficiaries irrespective whether they participated in the study or not.

Statistical Analysis: The data obtained from the Google form responses were downloaded in excel sheet and analysed using statistical package for the social sciences (SPSS), version 20. The results of Hindi responses were translated to English and were combined in one datasheet for analysis. A scoring system was used where 2 points were awarded for correct answer in knowledge questions and zero for wrong/ can't say (hence knowledge maximum score was 16). Likert's scale was used for all questions in attitude section. The Score of each participant was rated into poor (<60%: <9.6), fair (60%–79%: 9.6–12.6) and good (≥80%: 12.7–16). In terms of attitudes, the proper attitude was given a score of +2, the improper attitude was given a score of −2 and uncertain was given a score of 0 (hence a maximum positive attitude score of 20). Regarding practice questions, the correct practice was given a score of 2, (sometimes/ intermediate) was given a score of 1 and incorrect practice was given a score of 0 (hence a maximum practice score of 14). The overall scores of each individual were used to obtain total scores for KAP (max 50). Categorical variables were tabulated using frequency and percentage. Statistical tests were performed at a 5% significance level. Furthermore, level of knowledge, attitudes and practices were compared between different demographic variables.

Ethical Considerations: The purpose of the study was explained and the participation was entirely voluntary. Informed consent was obtained from all participants.

Results

Total 344 individuals participated in the survey including 196 male and 148 females. Demographic and other characteristics of vaccine beneficiaries participating in the study have been presented in Table 1.

Table- 1: Characteristics of participants (N=344)

Characteristics		No.	%
Language	English	144	41.9
	Hindi	200	58.1
Age (Year)	18-35	124	36.0
	36-55	188	54.7
	56 and above	32	9.3
Gender	Female	148	43.0
	Male	196	57.0
Marital status	Married	272	79.1
	Unmarried	64	18.6
	Separated/ Widow/ Widower	8	2.3
Area	Urban	184	53.5
	Rural	160	46.5
Education	No formal Education	0	0
	Class 8^{th}	28	8.1
	Class 12^{th}	80	23.3
	Graduate, Postgraduate & above	236	68.6
Occupation	Student	94	27.3
	Govt employee	90	26.2
	Non-govt employee	104	30.2
	Retired	16	4.5
	Housewife	16	4.5
	Other	24	6.9

Contd… Table-1

Characteristics		No.	%
Working environment	At home	88	25.6
	Face to face interaction with public	24	7.0
	Hospital	148	43.0
	Office	28	8.1
	Outdoor	56	16.3
Living with	Kids	68	19.8
	Elderly	36	10.5
	Both	200	58.1
	None	40	11.6
Found covid positive	Yes	84	24.4
	No	228	66.3
	Don't know	32	9.3
Family/ friend positive	Yes	148	3.0
	No	164	47.7
	Don't know	32	9.3

The Cronbach's Alfa using SPSS given a value of 0.795 indicating high internal consistency (internal reliability).

Knowledge of study participants regarding hand hygiene: The mean knowledge score among all respondents was 12.84/16±2.52 (Fair). Of them, 28 (8.1%), 120 (34.9%) and 196 (57.0%) had poor, fair and good knowledge levels, respectively. The survey responses found a range of knowledge gaps, However, we detected some critical knowledge gaps, for example, Data analysis showed that demographic factors influenced knowledge scores, being significantly higher (≤0.001) in males, urban residents, those with higher education or who knew a family member or a friend who had a confirmed diagnosis with COVID-19 disease.

Table- 2: KAP (Knowledge, Attitude and Practice) Score

Score		No.	%
Knowledge	Poor	28	8.1
	Fair	120	34.9
	Good	196	57.0
Attitude	Poor	36	10.4
	Fair	156	45.4
	Good	152	44.2
Practice	Poor	63	18.3
	Fair	141	41.0
	Good	140	40.7
Total KAP	Poor	44	12.8
	Fair	128	37.2
	Good	172	50.0

Attitude of study participants regarding hand hygiene: The majority of people listed their healthcare workers, family members and friends, social media and television as sources of information about COVID-19, more than official sources such as the government or WHO. The mean attitudes score towards COVID-19 among the surveyed respondents was 15.42/20±2.98, majority of participants (89.6%) shown fair to good attitude. Participants agreed that hand hygiene is important in preventing disease transmission, hand washing is a part of personal hygiene; believed it saves lives; and would feel bad if they were not able to wash their hands due to any reason.

Practices of hand hygiene: The mean practices score (10.57/14±2.16) and answers to individual questions showed good practices towards covid appropriate behavior. The majority of respondents indicated that they usually follow proper practices regarding hand washing, coughing and sneezing, hand hygiene after toilet and before meal. Rising awareness of public towards hand hygiene by different social media and government agencies might be an important contributory factor. Knowledge, attitude, education level and married status showed significant association with practice score. Participants with fair to good knowledge, positive attitude, higher education and married reported better hand washing practice score.

Table- 3: Perceived barriers of hand hygiene

Particulars		No.	%
Self-reported factors to poor hand hygiene practices*	Lack of water and/ or soap at work place	42	12.2
	Lack of time	24	7.0
	I don't find my hands dirty	72	20.9
	I don't think it is necessary	12	3.4
	At times forget	152	44.2
	Hand hygiene agents causes irritation & dryness	32	9.3
	Primary work needs priority	12	3.5
	Perceived low risk of acquiring infection from clients	44	12.8
	Lack of proper protocol at work place	28	8.4
	Disagreement from the recommendation	8	2.3

* Not mutually exclusive

Discussion

Lessons learned from the SARS outbreak in 2002-2003 emphasize that knowledge and attitudes regarding infectious diseases are associated with the level of panic emotion among the population, which can further complicate attempts to prevent the spread of the disease.[7] In the context of the pandemic continuing to progress globally, and India is currently facing a new wave of the pandemic, this community's KAP assessment is crucial. It may provide scientific evidence to promote prevention and control of the pandemic. The purpose of this study was to investigate hand hygiene knowledge, attitude and practice of common public. Various studies have highlighted that simple act of hand-washing and basic hygiene behaviour could prevent diarrhoea, acute respiratory infection and skin infections.[8,9] Although hand hygiene is a very simple procedure and has long been deemed one of the most important infection control measures, the compliance rates are generally reported to be low. Although guidelines are simple and easy to learn, translating them into practice in a working environment is at times challenging. Various studies demonstrate that verbal response about hand washing behaviour does not provide a real scenario of practices.[10] Knowledge about hand hygiene was found to be significantly better among middle aged and male gender when compared to the others. In the face of current covid-19 pandemic it is vitally important to provide common public with optimal training to raise their knowledge regarding the preventive measures against infectious diseases. Fortunately, compliance with hand hygiene can be enhanced significantly through regular hand hygiene campaigns using posters and encouraging peers to remind of hand hygiene. While hand hygiene practices are simple, compliance with hand hygiene falls in the domain of human behaviour; and altering human behaviour is complex and constitutes an enormous challenge. The participants recruited in the present study had fair to good knowledge about hand hygiene. However, their levels of practices were poor in 18.3%. This result demonstrates the low rate of hand hygiene compliance among common public. Improving knowledge may not necessarily change their practices. However, this is a very interesting question for future research: understanding why people who possess correct

knowledge on hygiene practices do not use it in practice. Several barriers to hand hygiene obtained in our study were compiled in table 3. Proactive community partnership and engagement such as having regular community health ambassadors advocating good hygiene messages with soap/hand sanitizer using a door-to-door approach, and having open dialogue sessions may help to improve the compliance to good hygiene practices.[11] Previous studies have shown video to be an effective medium for improving handwashing.[12] Moreover, this would also require regular evaluation to obtain the most effective method of delivering the hygiene education.[13] one study had shown the potential impact of good hand hygiene behaviour advocated during influenza pandemic can help to reduce acute diarrhoea during the same period.[14] In comparison to previous studies related to the community's KAP during an outbreak in Vietnam[15,16], the KAP in the COVID-19 outbreak was far better.[17] This may reflects the seriousness of the COVID-19 pandemic worldwide, which may be causing people more concerned. Also, the strict measures of the government like lockdown in controlling the pandemic have changed the lives of people and forced people to understand the disease as well as applied compulsory preventive measures. *Super Amma* campaign in India using motivation-based hand washing interventions has shown promising results which used nurture, disgust, affiliation and status to motivate hand washing through animated film, skits and public pledging.[18] Combined strategies were recognized as more effective than single strategies.[19]

Conclusion

Majority of the participants were washing their hands, they knew the requirement of personal hygiene, their knowledge about the importance of hand washing were focused on the fact that hand washing keeps them free from disease, keeps them healthy. Continuous and regular training is one of the necessary interventions to promote hand hygiene in general public. It is also necessary to identify the factors involved in promoting a positive perception and attitude among people about hand hygiene. Cohorts such as vaccine beneficiaries and attendants are more receptive to learning. Hence it is necessary to conduct training programmes to bridge the gap in knowledge, emphasizing importance of hand hygiene in disease prevention. Ensuring continuous availability and easy accessibility for facilities for maintaining hand hygiene at public place could also encourage better practice.

Limitations of the study: Several limitations must be considered when interpreting our results. First, participants' self-reported behaviors may have resulted in over-reporting of proper hygiene practices. Second, more urban population participated in our study so findings may not be generalized to general population.

Recommendations: Individuals with lower KAP levels should be provided with more information and support to promote appropriate disease prevention practices. People should have access to items (i.e., liquid soap, paper towels or preferably warm air blow dryers and toilet tissue) or alternative methods like hand sanitizer and opportunities to maintain personal hygiene in public settings. Posters to remind people to wash their hands correct manner should be displayed more frequently. Education to promote hand washing should be routinely given at work places and wherever feasible.

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