



KNOWLEDGE AND PRACTICE REGARDING PREVENTIVE MEASURES TOWARDS COVID -19 AMONG POPULATION OF FIELD PRACTICE AREA OF GMC HALDWANI, DISTRICT NAINITAL: A COMMUNITY-BASED STUDY

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ABSTRACT Coronavirus disease 2019 (COVID-19) is a pandemic and a Public Health Emergency of International Concern (PHEIC) as declared by World Health Organization (WHO). COVID-19 containment requires strict application of rigorous prevention and control measures. Due to the highly contagious nature of the disease, prevention and control measures like performing hand hygiene, maintaining physical distancing, use of masks, and practicing respiratory etiquette will help in reducing the transmission. Aim of the study is to assess the knowledge and practice of preventive measures of COVID -19 in a population of field practice area and to find out the gap in between. A community-based cross-sectional study was conducted by door-to-door visit among the 590 study participants residing in the field practice area of the Department of Community Medicine, GMC Haldwani, Nainital. A convenient sampling method was used. Pre tested scoring and questionnaire was used. Out of a total of 590 study participants, the majority of 140(23.7%) of the participants were in the age group of more than 60, 346(58.6%) were male, 396(67.1%) were married, 560 (94.9%) belonged to Hindu religion. The majority 413(70%) of them were knowledgeable about hand hygiene and 62% of them had good practice. The gap between knowledge and practice was found to be higher for use of masks 73(12.7%) followed by respiratory etiquette 64(11.8%), hand hygiene (8%) and physical distancing (7.5%). In this study, no major gap was found between knowledge and practice of preventive measures towards COVID-19. The majority of the study participants were knowledgeable about hand hygiene with good practice. Knowledge and practice level on COVID-19 appropriate behaviour can further be enhanced by necessary IEC activities in the field to protect the population from getting infection.

KEYWORDS : Hand Hygiene, Respiratory etiquette, Physical distancing

INTRODUCTION

Coronavirus disease 2019 (COVID-19) is an infectious disease caused by SARS-COV-2 virus. The majority of COVID-19 patients show clinical symptoms like fever, cough, breathing difficulty, pneumonia etc. WHO used the term 2019 novel corona virus when the virus affected the lower respiratory tract of humans with pneumonia in Wuhan, China on 29 December 2019.^{1,2} The WHO announced that the official name of the 2019 novel corona virus disease is corona virus disease 2019 (COVID-19). The recent name for the virus is severe acute respiratory syndrome corona virus 2 (SARS- CoV-2).² WHO declared COVID-19 as Public Health Emergency of International Concern (PHEIC) on 30th January 2020 and later declared it as pandemic on 11th March 2020.³

In India, the first case of COVID-19 was detected on 27th January 2020 and the first death related to COVID-19 on 12th March 2020. In Nainital district first active case was found on 25th March 2020. A total of 21573 confirmed cases and 940 deaths have been reported nationwide as of 28 April 2020.⁴ The COVID-19 disease spreads primarily through droplets of saliva or discharge from the nose when an infected person coughs or sneezes, so it's important that practicing respiratory etiquette (for example, by coughing into a flexed elbow) to protect yourself and others from infection by hand hygiene (any action of hygienic hand) antiseptics in order to reduce transient microbial flora (generally performed either by hand rubbing with an alcohol-based formulation or hand washing with plain or antimicrobial soap and water)⁵ and maintaining physical distancing (minimum 2 meter)⁵ and wearing a medical mask are the preventive measures that can limit the spread of COVID-19.^{6,7,8} Assessing general public's awareness and practice is necessary to identify the gaps and take appropriate preventive measures. This type of study in COVID time has not been conducted in Kumaon region of Uttarakhand, therefore it is important to know about the knowledge and practice related to COVID appropriate behavior among population of field practice area.

AIM:

To assess the knowledge and practice of preventive measures of COVID -19 among the field practice area and to find out the gap in between.

MATERIALS AND METHODS:

A community-based cross-sectional study was conducted among the population residing in the field practice area of the Department of Community Medicine, GMC Haldwani, District Nainital during the month of April 2020. House to house survey was done. Total number of registered households in both field practice areas (rural and urban) were 2366. A convenient sampling method was used to cover maximum possible no. of registered households. We were able to cover 590 households through door-to-door visit due to lockdown limitations of movement. Participants of age more than 18 years who were available during data collection and willing to participate were included in the study. Those households who refused to participate and locked houses at the time of visit were excluded from the study. Informed verbal consent was taken from each participant after explaining the nature and outcome of study. Confidentiality of the participant was assured. Ethical clearance from institutional ethics committee of GMC Haldwani was obtained prior to conducting this study. Experts in the field reviewed and revised the questionnaire. It was tested in a sample of 20 subjects.

Operational definition

Hand washing- It is the rubbing together of all surfaces and crevices of the hands using a soap and water or alcohol-based hand sanitizer.

Appropriate time of hand hygiene when using alcohol rub is taken as 20-30 seconds and for soap and water it is to be 40 -60 seconds⁹.

Knowledge is defined as having adequate understanding about hand washing.

(i) Knowledgeable: earning score of 75% and above on the knowledge questions.

(ii) Not knowledgeable: earning score less than 75% on the knowledge questions.

Practice is defined as an act of performing given procedure according to a set standard.

(I) Good practice: study participants who earned score of 75% and above to the practice questions.

(ii) **Poor practice:** study participants who earned score of less than 75% to the practice questions.

Physical distancing: It is a non-pharmaceutical IPC (Infection Prevention and Control) intervention implemented to avoid/decrease contact between those who are infected with a disease-causing pathogen and those who are not, so as to stop or slow down disease transmission in a community. Physical distancing of minimum 2 metre is considered as sufficient.⁹

Respiratory etiquette: This includes- Covering our mouth and nose with a tissue when we cough or sneeze, throw used tissues in the trash and If we don't have a tissue, coughing or sneezing into our elbow, not on our hands.

Correct use of masks: It is cleaning of hands before you put your mask on, as well as before and after you take it off, and after you touch it at any time. It should cover both your nose, mouth and chin.¹⁰

Statistical analysis - Data was collected by Epicollect-5 and analysed using descriptive statistics like frequency in MS Excel.

RESULTS

Socio- demographic characteristics of the study participants are presented in Table 1.

Table 1: Sociodemographic characteristics of study participants (n=590)

Variables	No. (%)	
Age	<21	53 (9.0)
	21-30	90 (15.3)
	31-40	86 (14.6)
	41-50	98(16.6)
	51-60	123(20.8)
	>60	140(23.7)
Sex	Male	346(58.6)
	Female	244(41.4)
Marital status	Married	396(67.1)
	Unmarried	194(32.9)
Religion	Hindu	560(94.9%)
	Muslim	30(5.1%)

Among 590 study subjects, majority 450 (76.3%) participants were less than 60 years while 140 (23.7%) were more than 60 years with 67% being male participants. 67.1% were married and 94.9% belonged to Hindu religion.

Table 2 showed knowledge and practice of hand hygiene among study participants. The knowledge of the respondents was assessed and categorized as knowledgeable and not knowledgeable as per operational definition used for this study.

Table 2: Knowledge and practice of hand hygiene among study participants (n = 590)

Variable	Knowledge No. (%)	Practice No. (%)
Hand washing should be practiced when hands visibly soiled	590 (100)	590 (100)
Hand washing should be practiced before taking meal	590(100)	364 (61.6)
Hand washing should be practiced after using washroom	531(90)	590 (100)
Hand washing should be practiced after coming back from outside	515 (87.2%)	426 (72.2)
Alcohol-based hand rub should be used or at least for 20-30 seconds for hand hygiene	408 (69.1)	224 (37.9)
Hands should be washed at least for 40-60 seconds using soap and water	415 (70.3)	324 (54.9)
Effective hand washing consists of wetting, soaping, applying friction, rinsing and drying adequately	442 (74.9)	514 (87.1)
Hands should be dried after handwashing	468 (79.3)	480 (81.3)

All the study participants washed their hands when visibly soiled and after using washroom. Out of 590 study subjects, majority 70% of subjects were knowledgeable based on the score ($\geq 75\%$) about hand washing [Figure 1].

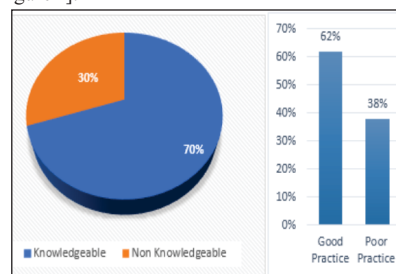


Figure 1: Level of knowledge of hand washing (%) Figure 2: Level of practice of hand washing (%)

The majority (62%) were following good practice [Figure 2]. Out of 38% who followed poor practice, majority (62.1%) of the participants were not used to perform hand hygiene using alcohol -based hand rub. Table 3 showed the knowledge and practice gap of other preventive measures among study participants.

Table 3: The gap between knowledge and practice of other preventive measures among study participants (n=590)

Variables	Knowledge No. (%)	Practice No. (%)	Gap No. (%)
Physical distancing	555 (94.1)	513(87)	42(7.1)
Correct Use of masks	575 (97)	502(85)	73(12)
Respiratory etiquette	544(92.2)	480(81.4)	64(10.8)

About 94.1% had knowledge of physical distancing. 97% and 92.2% of the participants had knowledge of correct use of masks and respiratory etiquette respectively. Gap between knowledge and practice was found to be higher for use of mask (12.7%) followed by respiratory etiquette (11.8%) and physical distancing (7.5%). Out of 590 subjects 35 (5.9%) did not know about physical distancing correctly and 77(13%) they did not practice even after having knowledge about it. Regarding correct use of masks, 88(14.9%) were not wearing masks properly however only 15 (2.5%) were lacking knowledge regarding it. In terms of respiratory etiquette, 46(7.7%) did not know about it while 110 (18.6%) did not practice it even though they have knowledge of the same.

DISCUSSION

This study gives comprehensive picture of knowledge and practice regarding hand hygiene, physical distancing, correct use of mask and respiratory etiquette among general population of field practice area of GMC Haldwani. This study has found male (58.6 %) participation more as compared to female (41.4 %). Similar study done by Kumar et al. have found higher male participation in their study (86.9%) when compared with female participation (13%). This finding can be attributed to the higher male enrolment in their institution.⁸

In this study, 70% of the participants were knowledgeable and 62% of them had good practice while 38% had poor practice about hand hygiene. Almost similar result was found in study by S. Jemal, majority i.e. 65.9% of them were knowledgeable and 31 (34.1%) were not knowledgeable, however the majority of health professionals, 51 (56.0%), had poor practice and 40 (43.0%) of them had good practice of hand washing.¹¹ Likewise, most participants (97 %) acknowledged that washing hands frequently could stop the spread of infection.¹²

The study conducted by Adhikari et al. has shown that preventive measures like use of masks, practices regarding hand hygiene, avoiding public contact, detecting cases, contact tracing and quarantines are the different methods to reduce transmission.¹³The results were lower in the study on Knowledge, Attitude, and Practice of Hand Hygiene among Medical and Nursing Students at a Tertiary Health Care Centre in Raichur, India which shows only 9% of participants (13 out of 144) had good knowledge regarding hand hygiene, nursing students had good hand hygiene practices (62.1%) as compared to medical students (19.6%).¹⁴The study by Rabbi and Dey on exploring the gap between hand washing knowledge and practices in Bangladesh revealed that majority (90%) of respondents had knowledge about hand washing with soap before eating and after

defecation but only 21% and 88% respondents reported to do so respectively.¹⁵ 97% of the participants had knowledge and 85% of them were using mask to prevent transmission of COVID-19 in the above study. Study by Kumar et al. has shown the overall results for mask use were good in 138 (35.2%), moderate in 178 (45.4%), and poor in 76 (19.3%).⁸

About 94% of the participants had knowledge and 87% were practicing physical distancing [2 meter]. Likewise, most (98%) of the participants thought physical distancing is essential to stop the virus from spreading.⁹

Knowledge and practice of cough etiquette were 92 % and 81.3% respectively. In a study done in Tamilnadu, correct knowledge about respiratory hygiene was found in only 22 (9.1%) participants.¹⁶ In similar studies conducted in Korea and Japan among university students as well as general population, 61.5%, 56.1% and 31% participants had correct knowledge about respiratory etiquettes, respectively.^{17,18,19}

Limitations:

In this study participant group was too small to generalize its findings to general population, it requires a large study group and area to know the gap. The study has not explored other factors associated with COVID-19 preventive behaviours such as using media, health seeking behaviour, literacy that could influence knowledge of study participants.

CONCLUSION:

This study did not find any major gap between knowledge and practice of preventive measures towards COVID – 19. The majority of study participants were knowledgeable about hand hygiene and their practice was good. This study showed a little gap between knowledge and practice regarding physical distancing, use of masks and respiratory etiquette. The education and communication regarding COVID- 19 preventive behaviours should be enhanced and motivate the population to apply them as this is the only way to save themselves from getting disease.

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