



“KNOWLEDGE ATTITUDE AND PRACTICE BASED SURVEY ON COVID-19 AWARENESS AMONG THE PARAMEDICAL STAFF AND STUDENTS OF GUJARAT”

Medical Science

Dr. Ananya Rakshit

Department of Pharmacology, Rajiv Gandhi Medical College and Chhatrapati Shivaji Maharaj Hospital, Thane, Maharashtra – 400605

Dr. Bhargav M Purohit*

Department of Pharmacology, Government Medical College, Bhavnagar, Gujarat - 364001 *Corresponding Author

ABSTRACT

Background: Due to unbridled covid-19 pandemics and its pathological and epidemiological uncertainties, numerous international and national guidelines came forth. Government Of Gujarat and PlexusMD have launched CCMC [Certificate Course For Management Of Covid-19] an online Training program which integrated all the current interim guidance by CDC, WHO, ICMR, MoHFW guidelines for all the health care workers. This study sought to determine the effectiveness of online Covid-19 Training program. This study intended to understand the level of Knowledge Attitude and Practice (KAP) among the paramedical staffs and students through online questionnaire survey. Questions were adapted from CCMC online training course. **Methodology:** After taking Ethical approval, data have been collected from the paramedical staffs and students of Bhavnagar Gujarat using online Google form survey via what's app. The online questionnaire used in this study was drafted and validated by experts before hosting it online. **Result:** Total 514 participants have given consent to participate in this study. Overall score of all the study participants were 63.42% which implied their good cognitive domain. This study disclosed that 70.6% study participants were trained in covid-19 management course, rest 29.4% were untrained. On applying Mann Whitney U test, statistically significant difference ($P < 0.05$) in between trained and untrained participants have been displayed. Mean attitude 3.87 Score revealed positive attitude towards preventive measure and perception in controlling covid-19 infection. On applying Spearman's correlation test for non-parametric data, positive co-relation of knowledge with attitude was found to be significant ($P < 0.05$), while positive correlation of knowledge with practice revealed insignificant ($P < 0.05$) result. **Conclusion:** This study conveyed the significance of effectiveness of Covid-19 management Training. This study recorded significant positive co-relation of knowledge with attitude, while knowledge with practice imparts an insignificant ($P > 0.05$) correlation. This signifies that there is disparity in Knowledge and its execution through action. Good level of knowledge and positive attitude towards preventive measures with adherence to standard guidelines provided by state and central government would combat the covid-19 prevailing situation.

KEYWORDS

Covid-19 Paramedical staffs and Students Knowledge Attitude Practice

BACKGROUND:

First case of Covid-19 was reported from Wuhan China, then the (SARS-CoV-2) virus spread subsequently to the rest of the world. Several countries have now reported community spread. WHO declared coronavirus disease as a pandemic on March 11, 2020^[1]. There are very limited data available to us about this new strain SARS COV-2 causing pandemic. It's the high time for all the researchers to work on it. Every day there is something new to know about Covid-19. We all the medical professionals need to update ourselves with new guidelines and need to aware all the paramedical staffs working along with us. Government Of Gujarat and PlexusMD have launched an online Covid-19 Training program CCMC [Certificate Course For Management Of Covid-19] for all the health care workers Paramedical Staffs (Nursing staffs, Lab technicians, OT assistants), Paramedical Students (Nursing students, DMLT students)^[2]. We all know prevention is better than cure, that's much applicable here in viral COVID -19 pandemic infections and there is no specific drug of choice, only symptomatic treatment is given^[3]. This study intended to determine the awareness about the Covid-19 and how Paramedical staff and students implement their knowledge and attitude in practice through their action. This study also determined the effectiveness of online Covid-19 Training program and the need for regular educational interventions and training programs on infection prevention for health workers.

MATERIALS AND METHOD:

Participants And Data Collection:

After taking Ethical approval [EC approval No. 935/2020] from ethical committee Government Medical College Bhavnagar on 28th May 2020, this cross-sectional survey was conducted among the Paramedical staffs and students from government, semi-government and private sectors in Bhavnagar Gujarat from 1st June to 28th June, immediately after Government of Gujarat announced unlock1 with new set of relaxation for resuming economic activities. The data have been collected using Google form as an online survey. The online questionnaire used in this study was drafted and validated by experts before hosting it online. Offline pilot study of 10 participants were pretested, those participants were not included in this online study. Experts opinion have been implemented in redesigning the questionnaire. The link of Google form was posted in What's app Groups by the principal investigator and head of the institute. The

study participants were informed about the details of the study objectives. Participation in this survey was anonymous, consensual and voluntary with informed consent given by all participants. Paramedical Staffs (Nursing staffs, Lab technicians, OT assistants), Paramedical Students (Nursing students, DMLT students) those who have given consent to the online questionnaire have been included in this study.

METHOD:

Government Of Gujarat and PlexusMD have launched an online Covid-19 Training program CCMC [Certificate Course For Management Of Covid-19] for all the health care workers. 7 days prior to the survey of the online Google questionnaire, Head of the institutions of both Private and Government Health Care centers of Bhavnagar Gujarat was requested to send a reminder to all the health care workers via email or What's app group for CCMC online course. Questions were adapted from CCMC online course which integrated all the current interim guidance by CDC, WHO, ICMR, MoHFW guidelines. Questions were based on knowledge, attitude and practice about infection control practices related to COVID-19 disease. Knowledge determined their level of awareness related to COVID-19 disease prevention. Attitude determined their assent (Agree/Disagree) or feelings (Concerned or Not at all Concerned) related to COVID-19 disease and its prevention. Practice demonstrated their knowledge and attitude through their action. After 7days CCMC online course reminder to the study participants, on 8th day Questionnaire based online Google form was send via What's app or email to all the Paramedical Staffs and students as potential responders at all Govt. and Private healthcare centers at Bhavnagar Gujarat. In the designation section of this questionnaire, 'None of the above' option was kept for excluding other health care professionals like intern doctors etc from this study. After 7 days of questionnaire Survey response, reminder was given every week for all the remaining participants to participate voluntarily via What's app or email. Each question was mandatory and Knowledge based questions carried 1 point. Percentage of the Score determined the status of awareness among Paramedical Staffs (Nursing staffs, Lab technicians, OT assistants), Paramedical Students (Nursing students, DMLT students). Percentage of Study participants Strongly Agreeing, Agreeing, Disagreeing and Strongly Disagreeing with certain views related to Covid-19 & highly concerned, Moderately concerned and not at all concerned about Covid-19

infection determined their Attitude. Percentage of Paramedical staff and students following (Yes) or not following (No) certain practices (Frequently, Occasionally, Infrequently or Never) for preventing Covid-19 infection. This study determined the need for regular educational interventions and training programs on infection prevention for health workers.

Statistical Analysis:

Data were extracted and compiled as mean $\pm$ SEM and categorical data were expressed as frequency and percentage. For normality test, Kolmogorov Smirnov test was applied. To compare between trained and untrained participants Mann Whitney U test has been applied. The statistical significance level of the test was expressed as $P < 0.05$. Spearman's correlation was implemented for non-parametric data to assess the co-relation of their knowledge with attitude and knowledge with practice. Statistical analyses were performed using graph pad, version 3.2.

RESULT:

Out of 546 number of total responses, 94% (n=514) participants have given consent to participate in this study. 18% (n=94) Diploma in Medical Laboratory Technology students [DMLT], 67% (n=348) Nursing students, 4% (n=21) laboratory technicians, 10% (n=46)

Nursing staffs and 1% (n=5) OT assistant participated in this study. 14% (n=72) paramedical staffs participated in this study and rest were students. 54.2% paramedical staffs were working in Government sector and 37.5% in Private sector and 8.3% in semi government sector. 70.6% participants were trained in covid-19 management course, rest 29.4% were untrained. Mean score of trained and untrained participants were 12.74 ± 0.34 and 11.62 ± 0.23 respectively. Mean score of nursing students and DMLT students were 11.8 ± 0.17 and 12.8 ± 0.36 respectively. Mean score of Paramedical staffs, Nursing staffs, OT Assistant and Laboratory technician were 13.78 ± 0.5 , 13.4 ± 1 and 12.8 ± 0.6 respectively. On applying Mann Whitney U test, statistically significant difference ($P < 0.05$) in between trained and untrained participants have been displayed. Mean attitude 3.87 Score revealed positive attitude towards preventive measure and perception in controlling covid-19 infection. On applying Spearman's correlation test for non-parametric data, positive correlation of knowledge with attitude was found to be significant ($P < 0.05$), while positive correlation of knowledge with practice revealed insignificant ($P < 0.05$) result.

QUESTINNAIRE:

Knowledge Based Questions:

Table 1a. Frequency And Percentage Of Correct Responses In Each Knowledge Based Questions By The Responders:

NUMBER	QUESTIONS with correct answers	Freq. Of Each Response (n=514)	Percentage of CORRECT RESPONSES
K1	Important step to practice as a health care worker for preventing Covid-19 infection? [According to WHO Guideline] a) Frequent hand-washing b) Wearing a face mask c) Both Frequent hand-washing and wearing a face mask d) None of the above	9 2 501 2	97.5%
K2	Minimum time needed for hand rub with Alcohol based hand sanitizer? a) 10 seconds. b) 20 seconds. c) 30 seconds d) Don't Know	77 328 100 9	63.8%
K3	Recommended Concentration Of Sodium Hypochlorite To Be Used As Disinfectant In High Contact Surfaces Like Elevator Buttons? a) 0.5% b) 1% c) 2% d) Don't Know.	177 210 54 73	40.9%
K4	Alcohol based sanitizer should contain at least a) 98% Iso-propyl Alcohol b) 95% Iso-propyl Alcohol c) 70% Iso-propyl Alcohol d) 60% Iso-propyl Alcohol e) Don't Know.	47 83 276 58 50	53.7%
K5	Which of the following you MUST avoid ? [Choose answers- Check Box] a) Washing vegetables immediately after applying alcohol based hand sanitizer, b) Cooking food using gas cylinder, immediately after applying alcohol based hand sanitizer c) Eating food immediately after applying alcohol based hand sanitizer d) Lighting candles immediately after applying alcohol based hand sanitizer e) Don't know.	188 387 211 332 31	29%
K6	Do you think Covid-19 infection can be transmitted through case paper of the Covid-19 patients ? a) Yes b) No c) Don't Know	386 101 27	75%
K7	Do you think asymptomatic patients can spread covid-19 disease ? a) Yes b) No c) Don't Know	400 100 14	77%
K8	Do you think asymptomatic or mild symptomatic Covid-19 patients can get recovered of their own? a) Yes b) No c) Don't Know	277 219 18	53%
K9	Most of Covid-19 cases do not show any symptoms a) True b) False c) Don't know	259 217 36	50%

K10	Which of the following is considered as Close contact : a) Being within approximately 10 feet (3 meters) of Covid-19 Patients b) Being within approximately 6 feet (2 meters) of Covid-19 Patients c) Having direct contact with infectious secretions like sputum, blood, serum from covid-19 patients d) Both b & c e) Both a & c f) Don't Know	3 12 139 280 52 28	54%
K11	K1Most of the people exposed to covid-19 develops symptoms within a) 24 hours b) 2 days to 2 weeks c) 3-4 weeks d) Longer than a month e) Don't Know	38 416 38 4 17	80%
K12	Which of the following is the most commonly reported clinical finding among COVID-19 patients? a) Sneezing b) Hypotension c) Diarrhea d) Fever e) Don't Know	197 8 1 292 15	56%
K13	Select the following Personal protection equipment' that you should wear as a Health care provider, providing care to asymptomatic patients with history of exposure to covid-19 who are being evaluated for a non-infectious complaint of hyperglycemia and hypertension. [Check boxes select answers as per your need] a) Head cap b) Foot wear covering c) Gown d) Gloves e) Eye protection f) Respirator N95 masks g) Don't know	215 295 259 317 439 292 420 27	41%
K14	How will you correct the position of the worn face masks after it gets displaced? a) By touching from the front of the masks b) By touching from below upward of the masks c) By touching from the side of the masks d) By touching the elastic straps of the masks e) Don't know	59 15 17 398 21	77%
K15	Where to discard PPE (Face masks, Gown, Cap) and gloves respectively a) Yellow and Blue colored bag b) Red and Yellow colored bag c) Yellow and Red colored bag d) Blue and Red colored bag e) Don't Know.	65 128 240 50 31	46%
K16	Is there any diagnostic test available for diagnosis of Covid-19? a) Yes b) No c) Don't Know	289 165 59	56%
K17	Is there any specific treatment available for Covid-19? a) Yes b) No c) Don't Know	96 374 43	72%
K18	K Can health worker take hydroxychloroquine as chemoprophylaxis for Covid-19 infection without Physician consultation? a) Yes b) No c) Don't Know	70 395 48	76%
K19	After taking hydroxychloroquine as Chemoprophylaxis do you think you are immune to Covid-19 infection? a) Yes b) No c) Don't know.	206 189 117	36%
K20	Candidates for home quarantine: a) All close contact (without Precautions) of laboratory confirmed positive cases, even if patients are asymptomatic. b) Asymptomatic Covid-19 patients discharged from hospital c) Both (a) and (b) d) Don't know.	63 36 406 9	78%

Table 1b. Knowledge Assessment In Different Sub Groups Based On Score:

Sub-groups	Mean Score	Percentage of mean score
Trained	12.74	64%
Untrained	11.62	58%
DMLT Students	12.8	64%
Nursing Students	11.8	59%

Nursing Staffs	13.78	68%
Lab. Technicians	12.8	64%
OT assistant	13.4	67%

Table 2b. Percentage Of Each Attitude Score:

Score	Attitude	A1+A2+A3 Total response	Percentage of each SCORE
1	Strongly Negative attitude	219/1542	14%

2	Negative attitude	61/1542	4%
3	Neutral	231/1542	15%
4	Positive attitude	214/1542	14%
5	Strongly Positive attitude	817/1542	53%

Table 4. Spearman's Correlation Table For Relation Between Table 2a. Attitude Based Questions

Knowledge With Attitude And Knowledge With Practice:

Correlation	Spearman's correlation (r)	P value
Knowledge with Attitude	0.16	0.008 (Significant)
Knowledge with Practice	0.06	0.163 (Not significant)

Question Number	Attitude Based Questions	Frequency and Percentage of Each Response
A1	How much are you concerned about the Covid-19 pandemic? 1. Not at all concerned. 2. Slightly concerned. 3. Somewhat Concerned 4. Moderately concerned. 5. Highly concerned.	22 (4.3%) 12 (2.3%) 84 (16.3%) 86 (16.7%) 310 (60.3%)
A2	Most effective method for preventing Covid-19 infection in the health care centers is by avoiding exposure by using standard precautions, Contact precautions and air borne precautions and eye protection while patient care 1. Strongly disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree	19 (3.7%) 10 (1.9%) 61 (11.9%) 74 (14.4%) 350 (68%)
A3	Herd immunity is the only solution to face this Covid-19 pandemic 1. Strongly Agree 2. Agree 3. Neutral 4. Disagree 5. Strongly Disagree	178 (34.6%) 39 (7.6%) 86 (16.7%) 54 (10.5%) 157 (30.5%)

Table 3: Practice Based Questions:

Sl. No	Practice Based Questions	Frequency and Percentage of Each Response
P1	How often you wash your hands with soap and water or with Alcohol based sanitizer especially when you are in common Public Place? a) Frequently (At least once within a gap of 1 to 2 hours) b) Occasionally (As per your convenience) c) Infrequently d) Never	419,(81.5%) 93 (18.1%) 2
P2	Do you wash your hand with soap and water for at least 20 seconds? a) Yes b) No	508, (99%) 6 (2%)
P3	Do you wear masks? a) Yes b) No	503,(98%) 11, (2%)
P4	Do you wash your hand with soap and water or with alcohol based sanitizer before wearing masks and after removal of masks or after touching of masks? a) Yes b) No	505, (98%) 9,(2%)
P5	After covering your nose and mouth with masks do you ensure that there is no gaps between your face and masks? a) Yes b) No	498, (97%) 16,(3%)
P6	Do you wear disposable masks? a) Yes b) No	375, (73%) 139, (27%)
P6A.	If you wear disposable masks, where do you dispose it? a) Red bin b) Randomly anywhere as per convenience c) Garbage bin after wrapping it in a plastic or any bag tightly d) Garbage bin without wrapping it with anything e) Yellow bin f) If others then specify..... Burning, Deep burial.	111,(21.6%) 7,(1.5%) 22,(5%) 159,(29.9%) 215,(42%)
P6B.	If you use non disposable home made cloth masks, how you reuse it ? a) After washing it with warm water and detergent and sunlight dry. b) After washing it with normal water and sunlight dry c) After washing it with detergent and warm water and sunlight dry and reuse alternate cloth masks d) Reusing the same home made cloth masks without washing it e) Reusing another home made cloth masks without washing it f) If Others, specify.....	89, (17.3%) 15, (3%) 397,(77.4%) 3,(0.3%) 10, (2%)

DISCUSSION:

With the emergence of this covid-19 infection swiping across the world as global pandemic, numerous international and national guidelines came forth, none of them being absolute hence obscuring its implementation. Government Of Gujarat and PlexusMD have

launched an online Covid-19 Training program [Certificate Course For Management Of Covid-19] CCMC online course which integrated all the current interim guidance by CDC, WHO, ICMR, MoHFW guidelines. With the novelty of covid-19 and its pathological and epidemiological uncertainties, this KAP study intended to identify the

key areas of concerns and need of optimal community intervention.

Knowledge Domain:

Overall score of all the study participants were 63.42%, which implied their good cognitive domain. This study disclosed that 70.6% study participants were trained in covid-19 management course, rest 29.4% were untrained. On applying Mann Whitney U test between trained and untrained participants, statistically significant mean score difference ($P < 0.05$) was displayed. 64% of the participants had misconception that on consuming Tab. Hydroxy-chloroquine (HCQ) as chemoprophylaxis, they would be immune to covid-19 infection. 50% of the study population were unaware that covid positive patients could be asymptomatic and asymptomatic covid-19 patients can spread the disease. 46% of the study participants were ignorant to close contact proximity for covid infection. According to CDC, a "close contact" is defined as: "being within approximately 6 feet (2 meters) of a COVID-19 case for a prolonged period of time or having direct contact with infectious secretions of a COVID-19 case"^[3]. Two basic methods to clean hands are hand rubbing and hand washing. The CDC recommends alcohol-based hand rub (ABHR) in most situations^[4], recommended minimum time required for hand rubbing is atleast 20 seconds^[5]. 37% of our study participants were unaware of minimum time required for hand rubbing. Correct hand hygiene practices play a crucial role in preventing the spread of infection. 25% of study participants were unaware of spread of covid-19 infection through fomites like case paper. 24% of the study participants carried an idea of consuming (HCQ) without physician's consultation. 23% of the study participants were ignorant about the method of repositioning the displaced worn face mask.

Attitude Domain:

About 34.6% of study population were convinced by the concept of herd immunity in facing covid-19 pandemic, but herd immunity would wipe out certain section of the society. So, in such context it's better to be skeptical and take all the best possible precautions on behalf of us as a responsible citizen rather than being optimistic towards herd immunity. Mean attitude 3.87 Score revealed positive attitude towards preventive measure and perception in controlling covid-19 infection. On applying Spearman's correlation test for non-parametric data, positive co-relation of knowledge with attitude was found to be significant ($P < 0.05$).

Practice Domain:

Study participants were seem to be aware of guidelines related to basic hand washing practices, but how much they implement their knowledge through action is questionable. Around 73% of our study participants seem to use non-disposable masks and rest 27% wear non-disposable home-made cloth masks. Assuming their honest responses data extracted from their responses, revealed a wide variation in the method of disposal of disposable masks specially in the areas where yellow bins are not available, like in the residential areas. Wide range of discrepancy was also revealed in re-cycling procedures of non-disposable home-made cloth masks. This study data would like to cast lime light of attention to establish a strict guideline for disposal of disposable masks and reuse of non-disposable masks. On applying Spearman's correlation test for non-parametric data, positive correlation of knowledge with practice imparts an insignificant ($P > 0.05$) result. This signifies that there is disparity in Knowledge and it's execution through action.

Comparison With Other Similar KAP Study Findings:

A nationwide online KAP study on Indian community's Knowledge Attitude and Practice (KAP) towards Covid-19 was conducted with 8075 study participants during lock down 10th March to 18th April. On applying Pearson's correlation, weak positive correlation of knowledge score with Attitude ($r=0.023$; $p<0.01$) and knowledge score with practice ($r=0.019$; $p<0.01$) was found to be significant^[6]. Another KAP study was conducted in Nigeria which significant relationship between knowledge of COVID-19 and attitude towards preventive measures ($r = 0.177$, $p = 0.004$, $r = 0.137$, $p = 0.001$ respectively)^[7]. As the questions are different, we actually can't compare these study findings with our study results. Due to rampant of Covid-19 pandemic, numerous KAP studies across the globe has been conducted at the online platform but there have been very limited study conducted in KAP questionnaire, questioning about the masks usage and it's disposal or re-usual especially in developing countries like India.

CONCLUSION:

This study provides a comprehensive assessment of knowledge attitude and practice. Based on the data extracted and analyzed, there was significant difference in the cognitive domain between trained and untrained participants. Thus edict the effectiveness of Covid -19 management Training. Good level of knowledge and positive attitude towards preventive measures with adherence to standard guidelines provided by state and central government would combat the covid-19 prevailing situation. More such KAP studies with holistic and viable approach on targeted population preferably with indigenous language should be encouraged.

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