STUDY TITLE:

Assessment of relationship between following covid appropriate behavior and getting infected with covid-19 in undergraduate students of B.J. Medical College, Ahmedabad who were on duty for covid management.

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ABSTRACT:

COVID-19 caused by the novel coronavirus (SARS-CoV-2) is an acute respiratory illness. WHO declared COVID-19 a pandemic in March 2020. [1]

Like several parts of the world, India experienced major surge of covid_19 cases and deaths. Since the middle of march 2021, the second wave has stated, and on April 09,2021 the highest number of cases (144829) has been identified in India. The major states affected were Maharashtra, Kerala, Karnataka, Andhra Pradesh, Tamil Nadu, Delhi, Uttar Pradesh and west Bengal. [2]

In order to prevent people from getting infected with covid-19, covid appropriate behavior was widely published like greet without physical contact, maintain physical distance, wear reusable mask cover or mask, avoiding touching eyes, nose and mouth, maintain respiratory hygiene, wash hands frequently and thoroughly, do not chew tobacco, khaini or spit in public places, regularly clean and disinfect frequently touched surfaces, avoid unnecessary travel, do not discriminate against anyone, discourage crowd- encourage safety, do not circulate social media posts which carry unverified or negative information, seek information on COVID-19 from credible sources, call national Toll-free helpline 1075 or State helpline numbers for any queries and seek psychosocial support for any stress or anxiety.[1]

The struggle to provide acute health coverage to the unprecedented amount of diseased, put healthcare workers (HCWs) to the limit. Several hospitals reported a shortage of medical personnel, forcing authorities to call upon medical students to assist.

Many undergraduate students from B.J. Medical College, Ahmedabad were posted to help as Covid Sahayak in Rapid antigen testing and sanjeevani duty. Out of which, some students got infected with covid-19. This study was done to find relation between following covid appropriate behavior and getting infected with covid.

KEYWORDS:

1. Covid appropriate behavior
2. Healthcare workers
3. Physical distancing
4. Masks
5. Sanjeevani duty
6. Wash hands

INTRODUCTION:

To know relation between following covid appropriate behavior and getting infected with covid-19.

MATERIALS AND METHODS:

a) TYPES OF STUDY DESIGN:

Cross- sectional study in undergraduate students of B.J. Medical College, Ahmedabad who served duty for covid management as ‘Covid Sahayak’.

b) STUDY SETTING AND SITE:

This study would be carried out in B.J. Medical College, Ahmedabad.

c) SAMPLE SIZE (with justification):

All data related to covid infected students and students not infected with covid-19 during their duty from 20 March 2021 to 20 May 2021.

~ Cases: 71 Undergraduate students infected with covid-19(having RTPCR or Rapid test positive/ CT findings suggestive of covid) during their covid management duty.

~ Control: 150 Undergraduate students not infected with covid-19 during their covid management duty.

~ Matching: Undergraduate students of B.J. Medical College, Ahmedabad who served duty for covid management as 'Covid sahayak' from 20 March 2021 to 20May 2021.

d) STUDY PROFORMA:

A pre-designed and pre-tested online google form was sent by message to collect participant's details including name; covid positive or not, if yes, date of positive report; history of covid infection in home\hostel; symptomatic or asymptomatic infection; order of symptoms; vaccination status; were they following covid appropriate behaviour; prophylactic measures if taken any.

e) STATISTICAL ANALYSIS:

The data obtained was be entered in excel sheet and analysed using instat. Data is then expressed as actual frequencies, mean, and percentages. Odd’s ratio will be applied for association analysis. The 'p' value will be determined to finally evaluate the levels the levels of significance. $p<0.05$ will be considered significant.

RESULT:

TABLE 1: Number of students following covid appropriate behavior (handwashing, wearing mask, and social distancing) while on duty

Category (n)		Sanitization (%)	Social distancing (%)	Mask (%)
gender	Male(177)	170(96.1)	157(88.7)	177(100)
	Female(44)	43(97.7)	36(81.8)	44(100)
Academic year	2 year(167)	160(95.8)	151(90.4)	167(100)
	3 year(54)	53(98.1)	42(77.7)	54(100)
Type of duty	Rapid(15)	13(86.6)	12(80)	15(100)
	Sanjeevani(206)	200(97.1)	181(87.6)	206(100)
Infected with covid while on duty	Yes(71)	67(94.4)	61(85.9)	71(100)
	No(150)	146(97.3)	132(88)	150(100)

TABLE 2: Number of students following covid appropriate behavior at places other than duty.

		Sanitization (%)	Social distancing (%)	Mask (%)
At dining place	yes	190(85.9)	144(65.1)	124(56.1)
	no	31(14.1)	77(34.8)	97(41.1)
Home/hostel	yes	148(66.9)	103(46.6)	77(34.8)

	no	73(33)	118(53.3)	144(65.1)
Social gathering	yes	191(86.4)	175(77.8)	200(90.5)
	no	30(13.5)	46(20.8)	21(9.5)
Reporting center	yes	199(90.1)	92(41.6)	220(99.5)
	no	22(9.9)	129(58.3)	1(0.4)
In car while on visit	yes	214(96.8)	189(85.5)	217(98.1)
	no	7(3.1)	32(14.4)	4(1.8)
Group activity	yes	87(39.3)	129(58.3)	152(68.7)
	no	134(60.6)	92(41.6)	69(31.2)

TABLE 3: Difference in following covid appropriate behavior in cases and controls

		Case(out of71) (%)	Control (out of 150) (%)	Odd's ratio
Hand sanitization				
	Home/hostel	43(60.5)	105(70)	1.519
	Dining place	64(90.1)	126(84)	6.125
	Reporting center	61(85.9)	138(92)	1.885
	On duty	67(94.3)	146(97.3)	2.179
	Social gathering	59(83.1)	132(88)	1.492
	Group activity	34(47.8)	53(35.3)	0.5946
	In car while on duty	67(94.4)	147(98)	2.925
Social distancing				

	Home/hostel	38(53.5)	65(43.3)	0.6641
	Dining place	54(76.1)	90(60)	0.472
	Reporting center	34(47.8)	58(38.6)	0.6861
	On duty	61(85.9)	132(88)(73.1)	1.202
	Social gathering	64(90.1)	111(74)	0.3113
	Group activity	54(76.1)	75(50)	0.3148
	In car while on duty	63(88.7)	126(84)	0.6667
Wearing mask				
	Home/hostel	24(33.8)	53(35.3)	1.07
	Dining place	43(60.5)	81(54)	0.76
	Reporting center	71(100)	149(99.3)	0.697
	On duty	71(100)	150(100)	-
	Social gathering	64(90.1)	136(90.6)	1.063
	Group activity	50(71.4)	102(68)	1.063
	In car while on duty	69(97.1)	148(98.6)	2.145

DISCUSSION:

The majority of the participants in the study reported a high level of practice towards the prevention of SARS-CoV-2 infection particularly regarding using facemask, hand washing for at least 20 seconds, covering mouth and nose when coughing or sneezing, and avoiding touching eyes, nose, and mouth with unwashed hands as far as possible. This finding is consistent with the finding of a similar study conducted in China, where the potential risk of COVID-19 has largely improved the infection prevention and control behaviors of HCPs working in hospitals
[3]. In a study conducted in Egypt, hand washing, refraining from touching eyes, mouth and nose, and using surgical facemask were the most frequently accepted preventive measures among health workers [4].

Hand hygiene is recognized globally as a leading measure of IPC, which has been shown to be effective in decreasing the transmission of common respiratory viruses, including human coronaviruses [5, 6], and it has also been used in respond to SARS [7,8,9], Ebola [10], bird flu [11], and Plague [12], etc. HCWs who reported higher hand hygiene during patient care experienced a lower risk of developing SARS [8]. However, the self-reported compliance of hand hygiene before touching patients and after touching patient surroundings was relatively low as showed in previous studies [13], which may hinder the prevention and control of COVID-19. Besides, given the high transmissibility of the COVID-19 [14], appropriate patient placement was the primary measure to contain the epidemics, and a high rate of appropriate patient placement was found in this study.

INFERENCE:

A total of 221 medical students included in study out of them 71(32.1%) were diagnosed with COVID-19 as case and remaining 150(67.9%) students as controls matched for gender, age, sex, academic year and type of duty. Out of which, 177 (80.1%) were boys and 44(19.9%) were girls. And in terms of academic year 167 (75.5%) were students of 2ndyear and 54(24.5%) students were from 3rd year. 206(93.2%) students were assigned sanjeevani ghar seva and 15 (6.8%) students were assigned rapid antigen testing duty. Out of all the student's data collected, 129(58.4%) stayed in hostel and 92(41.6%) stayed at their home.

Based on data collected, all students wore mask on duty. Percentage of students who were assigned sanjeevani duty (sanitization 97.1% and physical distance87.6%) and followed covid appropriate behavior were more than those who were assigned rapid antigen testing (sanitization86.6% and physical distance 80%). It is clearly seen that following covid appropriate behavior was protective factor as percentage of students following social distance, mask and sanitization were more in control group (sanitization 97.3%, social distance 88%) than in cases (sanitization 94.4%and social distance 88%). [TABLE 1]

It is also seen that students were wearing mask and maintain distance when at public places like while on duty, at reporting center, social gathering and in car while on duty but a decreasing percentage at their residence be it home or hostel and at dining place. [TABLE 2]

Depending on following of covid appropriate behavior at various spaces like on duty, reporting center, dining place, in car while on duty, in home/ hostel or at social gathering, odd's ratio for calculated for individual places. In most cases, odd's ration came more than 1 which signifies not following covid appropriate behavior might let to exposure and risk factor for getting infected. [TABLE 3]

CONCLUSION:

From this study we can cay that following national guidelines on covid appropriate behavior is protective measure for not getting infected by corona virus. Giving proper training and student's satisfaction for training is must as it will not only help students or health care workers to stay safe but also help them teach others what is to be taken care of in this time of pandemic.

ACKNOWLEDGEMENT: Department of community medicine, B.J Medical college, Ahmedabad

CONFLICT OF INTEREST: No actual or potential conflict of interest is involved in this project.

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