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Evaluation and comparison of Awareness and practice of protective measures for COVID-19 between preclinical and clinical Medical students in developing country: Pakistan

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Abstract. Objective of this study was to evaluate the awareness and practice of medical students for preventive measures and to compare Covid related knowledge between preclinical and clinical students. Materials and methods: It is an observational cross section study conducted in medical students of southern Punjab, Pakistan. A questionnaire consisting questions for demographic, COVID -19 related information and practice for preventive measures was given online and response of students was recorded and result was analyzed. Results: Out of 589 students 230 (39%) were males and 359 (61%) were females. Over all 85% students were well aware of virology, predisposing factors and preventive measures Clinical students were having more knowledge as compare to pre clinical students. Male students were better aware of covid-19 as compare to female students. The most common source of information was social media. Practice of preventive measure was better by clinical students. Good awareness and preventive practice in clinical students might be based on fact of direct dealing or contact with Corona patients in wards. Moreover observing the intensive treatment required for symptomatic patients and poor outcome in some patients increases the Covid fear or anxiety that increases the thirst for gaining more information and knowledge. Conclusion: There is inadequate knowledge overall among preclinical and female students. Awareness for covid-19 pandemic has key role in control of Covid pandemic and its related fear and anxiety in medical students but unfortunately is an ignored aspect in developing countries. There is need of intervention by public health department for designing curriculum and education plans.

Keywords. COVID-19, pandemic, Viral Infection, Awareness, Anxiety, Medical students

Introduction

COVID-19 pandemic is currently, the most exigent challenge worldwide(1). Pandemic started in China and now has trapped most of the countries all over the world(2, 3). It has badly affected not only the economy but also physical and mental health of people(4). Covid related deaths have been recorded in millions(5). No definitive treatment is yet available and Covid patients are managed by supportive treatment. Preventive measures have key role in fight against this communicable deadly disease and are implemented worldwide(6, 7). Its transmission via animals and human to human is proven via direct communication, coughing, sneezing or direct touching(8, 9). Main focus in control of pandemic is to control its spread by observing social distancing, self quarantine, use of face mask and adopting the habit of frequent

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hand washing(10). There is a great need of awareness to control current situation as previous studies have proved that knowledge greatly affect the control of epidemics of such type(11-13).

Medical students gain significant importance in clinical years having bilateral risk of contracting disease and transmitting it to others. Immuno compromised and peoples with co morbidities are highly susceptible to contract disease by medical students. Moreover medical students are also involved in history taking and initial patient evaluation for signs and symptoms and further guidance. Previous studies show that lack of knowledge results in misdiagnosis and mismanagement due to poor skill of patient evaluation and recognition of clinical symptoms and signs. Moreover medical students got the opportunity of being proponent of health knowledge in society so it is highly imperative for them to gain maximum knowledge for diagnosis and preventive measures of COVID-19. In modern era of technology, many different sources other than literature or books are available for gain and dissemination of knowledge and information but the most common and fastest source is social media(14). Media also plays a crucial role in creating awareness in public. Public messages on media have proven role in change of behavior of people on topic of cigarette smoking and other injurious factors. It is research based proven fact that people adopt behavioral changes only if they perceive high threat to health. But on other side watching or reading news on daily updates for increasing number of deaths creates fear and phobia for Covid-19. Thus media act as double sward(15, 16).

Our study was based on aim to evaluate awareness of medical students of southern Punjab, Pakistan regarding predisposing factors, transmission, clinical presentation, diagnosis, management and outcome of COVID-19 Pneumonia, their aptitude for protective measures. This study will help to detect the areas of deficit in knowledge and information among medical students of southern Punjab that will help to plan and reschedule the academic activities and awareness programs to improve this deficiency in interest to provide better health care.

Material & Methods

1. Cross sectional Study was conducted at institutes of southern Punjab including Nishtar Medical University, Multan and Quade Azam Medical College, Bahawalpur. Online survey based on self designed objective type questionnaire derived from previous literature on awareness about pandemics in past, was sent to students. Questionnaire was based on aim to evaluate the knowledge of medical students of southern Punjab in respect of causative factor, mode of transmission, risk factors, clinical signs and symptoms, serious outcomes and protective measures. Trend of practice for protective measures among medical students was also evaluated. Total 589 students participated in study. Students responded positively by filling Performa were included in study and students not willing to participate or filled Performa incompletely were excluded from study. Data was collected. SPSS version 24 was used for analysis of data. Qualitative statistics such as response to questions was expressed in frequency and percentages. Mean and standard deviation was calculated for descriptive values like age. Chi square test was applied for variables with significant p value defined as < 0.05 and independent student t test was applied to determine association of scores from different groups

Results

Out of total 589 students 39% were male and 61% were females. 56.2% were preclinical and 47.8% were clinical students. Demographic features are shown in Table 01.

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Table: 01 showing Demographic features

Demographic Feature	Frequency	Percentage
Gender		
Females	259	61%
Male	330	39%
Total	589	100%
Age		
18-20	331	40%
20-25	258	60%
Total	589	100%
Study year		
Pre-Clinical students(1st& 2nd year)	389	66%
Clinical students(3rd,4th,5th year)	200	34%
Total	589	100%
Days scholar/Hostelite		
Days scholar	189	32%
Hostelite	400	68%
Total	589	100%

Students were divided in two groups based on gender and level of study, preclinical (1st & 2nd years) and clinical (3rd, 4th & 5th year). Response to questionnaire for knowledge about Covid - 19 is summarized in table 02.

Table :02 showing Response of students to questionnaire

	Questions	Sex				P value	Educational status				P value
		Male		Female			Preclinical		clinical		
		No	%	No	%		No	%	No	%	
1.	Do you know about Corona Pandemic										
	Yes										
	No	230	100	*303*	84.4	NS	275	83.1	258	100	NS
2.	What is a causative agent for CORONA?	Nil		*56*	15.6		56	16.9	Nil		
	Virus										
	Bacteria	226	98.2	*194*	54	0.002	264	79.7	256	99.3	
3.	Patients with chronic disease are at high risk for Corona	04	1.8	*165*	46		67	20.3	02	0.7	NS
	Yes										
	No										
4.	Corona can lead to death	204	88.6	*258*	71.8	NS	216	65.2	246	95.3	0.025
	Yes	26	11.4	*101*	28.2		115	34.8	12	4.6	
	No										
5.	Corona can be prevented by protective measures	230	100	*296*	82.4	NS	268	80.9	254	100	0.017
	Nil			*63*	17.6		63	19.1	Nil		
	Yes										
	No										
6.	Incubation period is	196	85.2	*247*	68.8	NS	209	68.6	234	90.7	0.028
	24 hours	34	14.8	*112*	31.2		122	31.4	24	9.3	
	1-10 days										
	1-4 weeks	08	3.5	*63*	12.7		69	20.8	2	0.7	
	>5 weeks	04	1.7	*37*	4.7		27	8.1	14	4.6	
7.	Mode of transmission is	214	93	*251*	83.8		223	67.4	242	93.7	0.034
	Skin contact	04	1.7	*08*	2.2		12	3.6	00	00	
	Droplet infection										

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	Oro feacal rout	01	0.4	*83*	20.3		63	17.2	21	2.7	
8.	Symptoms include	214	93	*236*	62.9	0.008	232	70.2	218	94.1	0.029
	Fever	15	6.5	*40*	10.3		36	12.6	19	3.1	
	Cough										
	Shortness of breath(SOB)	14	6.0	*62*	17.3		64	19.3	12	4.7	
	All of above	12	5.3	*42*	11.7		47	14.2	07	2.7	
9.	Source of information	12	5.3	*42*	11.7		49	14.8	05	2.0	
	Nesw paper	192	83.4	*213*	59.3	0.026	171	51.6	234	90.6	0.001
	Television										
	Social media	06	2.6	*02*			08		00		
		23	10	*66*			76		13		
		201	87.4	*291*			247		245		

Response of students for practice of protective measures and their approach towards management, vaccination and interest in educational and awareness programs is summarized in table 03.

Table: 03 showing Response of students towards practice for preventive measures

Questions	Numbers	Percentages
1. Are you afraid of getting Corona by yourself or your family member?		
Yes	480	81.4%
No	109	18.6%
2. What protective measure you practice?		
Social distancing & Self quarantine	44	7.5%
Face mask	540	91.68%
Hand sanitizer& frequent hand wash	5	0.82
3. Would you get vaccination if available?		
Yes	521	88.4%
No	68	11.6%
4. How do you deal Corona patient?		
Use gloves	548	93%
N95 Mask	529	90%
Hand sanitizer	579	98.3
gown	589	100%
All above	431	73.1%
5. Does Corona patient need intensive treatment?		
Yes	357	60.6%
No	232	39.9%
6. Are you satisfied with available information?		
Yes	137	23.2%
No	452	76.8%
7. What source you use for information?		
Television	67	11.4%
Print media i.e newspaper	12	2.0%
Social media i.e face book, wattsapp etc.	510	84.6%
8. Will you like to participate in awareness and educational programme to enhance knowledge about Corona pandemic?		
Yes	503	85.4%
No	86	14.6%

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Knowledge in regards of causative agent was good in all groups. Knowledge related to risk factors, clinical presentation, mode of transmission, and was comparatively better in clinical students but no significant gender based difference was seen. Risk factors, incubation period, its fatality and protective measures were comparatively less known to female and preclinical students. Social media was the most common and favourite source of information or knowledge among medical students.

Discussion

Previous studies show knowledge gap among medical students about Covid-19 pandemic in regards of prevention, dissemination and treatment(17). It is manifested by previous studies that paucity of Knowledge results in poor skills for history taking and recognition of signs and symptoms leading to misdiagnosis and mismanagement(18). In light of previous studies and current widespread global inexorable issue of Covid-19 pandemic, it was imperative to carry out this study to evaluate the level of knowledge among our medical students of southern Punjab, Pakistan. As per our knowledge no such study was conducted in this region that also adds up the significance of this study.

Our study shows that overall knowledge and attitude towards protective measures for Covis-19 is better among clinical and male students. This difference might be based on facts that clinical students are directly in involved in patients dealing for taking history and initial evaluation that increases their confidence level on one hand and practical knowledge on other hand. Moreover direct observation of Covid affected patients, their management in isolation far from dear ones, a cause of metal trauma and fatal outcome forces them to enhance and update their knowledge for preventive measures and its treatment. Previous studies have shown the positive relation of level of study year with better knowledge (2, 10, 19). Currently no definite treatment is available and role of antiviral is also not yet established(20). Research on its treatment is continuously being published. Different trails on vaccination are going on. All these enforce the update of knowledge mandatory. Our study shows the social media being the most popular and main source of information in medical students as in other young generation. Studies have shown the rapid shift of learning pattern in recent past. Increased utilization of internet and social media for Covid-19 updates was published recently. The crucial role of social media to update and disseminate information cannot be denied but wrong information might be harmful(21, 22). The updates of Covid related death rate creates the phobia. There is need for strategic planning for positive utilization of social media, the hot favourite source of information by youth to overcome the fallibilities based on deficiency of basic knowledge. Online short courses for medical students should be organized.

Female students are less sage as compare to male. It's highly compatible with our society as females have less public and media exposure. Moreover females show less interest in updates of current affairs(23, 24). This dearth of knowledge of medical students observed in our study needs to be conquered by contriving curriculum for medical students that incorporates all clinical aspects including the epidemiology, virology , pathology and therapeutic aspects of Covid-19. Courses on infectious diseases should be included in their medical curriculum(25, 26). In current situations of lock down, online education programs or courses could be compelled with offer of benefits for internal assessment grades or certificate. 84% male, 59% females while 51.6% preclinical and 90% clinical students were aware of clinical presentation of Covid-19 patients while early diagnosis has vital role to commence proper treatment in time leading to better recovery thus reducing the mortality rate. Short courses of medical students to deal with infectious disease comprising risk factors, aetiology, clinical presentation and

diagnosis, management and complications could be organized as part of their main course(25, 26).

Conclusion

Our study shows, clinical and male students were better aware of Covid-19 with a cut above in practice for protective measures but overall there is meagreness in basic knowledge and awareness about Covid -19 among medical students. Adaptation of behaviour change and protective measures that is the key yardstick to measure pandemic control is not up to scratch. Medical students are frontline soldiers in future so there is strong need for strategic plans and refinement of their curriculum to boost their knowledge leading to better expertise with high potential to shrug off this kind of pandemics in future

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