Original Article

Impact of Cough Etiquettes in Compliance with Preventive Measures from Airborne Disease: A Cross-Sectional Study among Symptomatic Respiratory Patients

Cough Etiquettes with Preventive Measures from Airborne Disease

Ajmaal Jami[1], Abdul Aziz Qureshi[3], Ahmed Mujtaba Memon[4], Rizwan Ali Tunio[3], Hina Khan[2] and Anus Bin Tariq[5]

ABSTRACT

Objective: To evaluate the impact of knowledge regarding cough etiquettes among the symptomatic respiratory patients as a preventive measure from airborne disease.

Study Design: A cross-sectional study

Place and Duration of Study: This study was conducted at the Al-Tibri Medical College between the duration of December 2019 to February 2020.

Materials and Methods: A total of 200 admitted and non-admitted respiratory symptomatic patients of both genders with the age of 18 years and above were included in the study through a non-probability convenience sampling technique after taking ethical approval from concerned authorities. The researcher filled a valid questionnaire after taken verbal consent from the patients. The data were evaluated in the form of frequency and percentage through SPSS version 22.0.

Results: 100% of patient's responses the coughing, sneezing, and spitting are the source of transmission. The majority of the respondent knew the preventive method and media was the principal source of information. The number of patients was unaware of respiratory hygiene and cough etiquette. To some extent, they practice cough etiquettes in their daily lives while they cannot practice these measures due to insufficient knowledge and resources.

Conclusion: According to the current requirement of health sensibility among the community due to running pandemic situations of the coronavirus worldwide, the study revealed the hidden aspects of community orientation regarding the prevention form air born disease. Following the study results, they need proper education about respiratory hygiene, and by adopting which measures they can incorporate the appropriate care and cope with any health situation.

Key Words: Cough etiquettes, coronavirus, air-borne disease, preventive measures

Citation of article: Jami A, Qureshi AA, Memon AM, Tunio RA, Khan H, Tariq A. Impact of Cough Etiquettes in Compliance with Preventive Measures from Airborne Disease: A Cross-Sectional Study among Symptomatic Respiratory Patients. Med Forum 2021;32(1):94-97.

INTRODUCTION

Infection control is essential for all healthcare workers working within a hospital setting, as the risk of cross-infection is always present. If proper guidelines not followed may lead to the transmission of various diseases. Airborne transmission is also widespread as infectious particles have a high susceptibility to spreading through droplets and aerosol transmission[1]. New students of medical sciences must be aware of airborne infection control and its transmission as they are initially at a higher risk of becoming infected from various airborne infections[2]. Students working in clinical settings must be aware of good hand hygiene. They must follow measures put in place by multiple organizations such as the CDC regarding infection control. Proper use of medical equipment for protecting students and medical workers is necessary and must be available at all times to be used by them. This equipment which includes gloves, surgical masks gowns, and more required for the protection of the skin, eyes, and the face of students, so that airborne droplets even if spread cannot infect the students, this also prevents the students from contacting various pathogens on their clothing which they can take home to their family and friends and risk even more

[1.] Department of Medicine / Anatomy[2], Al-Tibri Medical College and Hospital & Consultant at Naz Memorial Hospital, Karachi.
[3.] Department of Medicine, Isra University, Karachi.
[4.] Department of Cardiology, Ghulam Muhammad Mahar Medical College, Sukkur.
[5.] Lecturer, Department of Medical Education.

Correspondence: Dr. Ajmaal Jami, Assistant Professor Medicine, Al-Tibri Medical College and Hospital & Consultant at Naz Memorial Hospital, Karachi.
Contact No: 0321-3494249
Email: ajmaaljami67@gmail.com

Received: July, 2020
Accepted: October, 2020
Printed: January, 2021

cross-contamination. Students must also be aware of how airborne infection and spread and how they can prevent it from spreading[3]. Constant use of alcoholic sanitizers before and after the treatment of patients and upon using the equipment must be carried out to prevent cross-infection. It is also crucial that there is the implementation of proper cough etiquettes in hospital settings in order to prevent cross infections to patients or other fellow students or health care workers. This study is carried out among clinical sciences students to check how much they are aware and compliant with airborne infection control and to assess if they require further education on following and maintaining proper infection control guidelines[4].

MATERIALS AND METHODS

A cross-sectional study was done at Al-Tibri Medical College after taken ethical approval from the authorized committee of the concerned hospital. The patients were selected between the duration of December 2019 to February 2020 from the outpatient department. The sample was collected based on non-probability convenient sampling, and a well-adopted questionnaire was used for data collection. After taken verbal consent, both genders were included with an age group of 18 and above. The duty doctor filled the questionnaire according to patient response. The questionnaires were used to assess the knowledge of airborne infection control and the compliance of those patients who are respondents. Data entry was then carried out on MS Excel, and the entered data was then analyzed using SPSS version 21.0. The frequency and percentage of the patient's answers based on the questionnaire were tabulated.

RESULTS

Out of 200 numbers of patients, males were 95(47.5%), and females were 105(52.5%). Mean age of male was 42.5 ± 0.32 and female was 38.4 ± 1.23. Table 1 shows knowledge of the patients regarding cough etiquettes as a preventive measure from airborne infection.

Table 2 shows compliance of patients towards use of preventive maneuvers towards airborne infection spread.

Table No.1: Frequency and Percentage of respondent regarding awareness of cough etiquettes

Awareness regarding cough Etiquettes	Reactions	Frequency & Percentage
Mode of transmission	Through coughing, spitting & sneezing	200(100%)
	Direct contact	119(59.5%)
	Through blood	81(40.5%)
Preventive methods used to avoid transmission	Cover the month during coughing	124(62.0%)
	Face mask	124(62%)
	Don't come in contact with others	30(15.0%)
	Avoid spitting	76(38.0%)
	others	46(23.0%)
Do you have any idea about cough etiquettes?	Yes	42(21.0%)
	No	158(79.0%)
What is your main source of information?	By Physicians	53(26.8%)
	Through paramedics	12(6.0%)
	Friends, neighbors & family	27(13.5%)
	Television, social media & internet	95(47.5%)
	others	11(5.5%)
Can you explain respiratory hygiene?	Correct reply	30(15.0%)
	Incorrect reply	170(85.0%)
Can you explain hand hygiene?	Correct reply	69(34.5%)
	Incorrect reply	131(65.5%)
In your opinion cough etiquettes can help to prevent the transmission of infection?	Correct reply	154(77.0%)
	Incorrect reply	46(23.0%)

Table No.2: Shows Compliance of preventive maneuvers

Application of cough etiquettes	Reactions	Frequency & Percentage
Do you practicing the cough etiquettes during daily life?	Yes	172(86.0%)
	No	28(14.0%)
Which one of the following Preventive methods you are using to avoid the transmission?	Cover the month during coughing with hand	138(69.0%)
	Cover the month during coughing with handkerchief/tissue	29(14.5%)
	Face mask	19(9.5%)
	Avoid spitting & usually used dustbin	14(7.0%)
	others	0(0%)
How often you practice these measures while coughing?	Always	82(41%)
	Occasionally	118(59.0%)

What are the reasons behind the non-compliance	Unawareness	125(62.5%)
	Severity of symptoms	33(16.5%)
	Inaccessibility of tissues/ handkerchief	24(12.0%)
	No such use for such compliance	7(3.5%)
	others	11(5.5%)
Are you habitual for hand washing after an episode of coughing and sneezing?	Always	68(34.0%)
	Occasionally	132(66.0%)
How frequent you are used to for such measures?	Always	68(34.0%)
	Occasionally	132(66.0%)
Which one of the following are used to for hand hygiene?	Use water	39(19.5%)
	Use water and soap	76(38.0%)
	Sanitizers and others disinfectants	85(42.5%)
What the reasons behind the non-compliance of preventive measures	Unawareness	109(54.5%)
	Inaccessibility of water, soap or sanitizers	67(33.5%)
	Others	24(12.0%)

DISCUSSION

By the requirement of the current situation of pandemic worldwide, this study will help health professionals and researchers to encourage the community-based information program for their awareness about the preventive measures regarding cough etiquette. The results revealed the role of preventive measures that minimize the chance of disease transmission. Covering of nose and mouth can cover the chance of transmission from person to person and in the surrounding environment. They established the requirement of a modified maneuver that can effectively stop the air born infection transmission. Similar in the present study, they establishing the facts regarding awareness of defensive maneuvers that might help control the spread of infectious disease among the population. The fact is to educate the community and facilitate the population[5]. One of the study results established the evidence regarding the perception of university students regarding preventive procedures to control the transmission of the influenza virus. A maximum number of the participants showed desired knowledge and compliance regarding precautions and their application in their daily life to prevent the transmission of influenza virus. They mentioned the barriers like the availability of resources that make it challenging to acquire the precautionary measures in their daily lives. Another fact is social awareness and spread information about preventive measures through media resources and internet pages. Similar to the study, the patients are facing similar barriers like resources and inadequate knowledge regarding respiratory and hand hygiene. They get maximum information through television and internet resources, the proper guidelines and media reminders with the government policies and socialization will encourage the population to adopt the precautionary maneuver[6]. The study mentions the importance of making new preventive maneuvers as per requirement for the community to control the airborne infections.

Meanwhile, they concluded the effectiveness of cough etiquettes that are essentials along with the applications of preventive methods. In the present study, cough etiquettes' knowledge and compliance are major contributing factors in controlling the spread of infectious diseases[7]. The advance study showed the significance of ventilation in houses and workplaces as a preventive method form airborne diseases with proper incorporation of respiratory hygiene and all preventive methods that should be a part of daily life. Similar in the recent study, they ensure patients' knowledge and attitude regarding all essential etiquettes required for the control of the spread of infections[8-9]. According to the research, the masks and cough etiquettes are the best methods of prevention from air-born disease; the results concluded that masks' usage was a preferred method to take precaution from aerosol dispersal in cases of pneumonia. The use of a surgical mask is easy to apply and effectively prevent the aerosol dispersal in air and reduce environmental contamination. Instead of cough etiquette, the wearing of a mask is an easy way for prevention. As per our study results, the cough etiquettes and use of mask both measures incorporate simultaneously as a precautionary procedure[11-12]. Following the study of Bangladesh, they evaluate the perception of respiratory hygiene among the urban and rural populations, including data of 907 participants. The majority of the respondents declared their knowledge below the level, and the community[4-12-13] requires low-cost preventive maneuvers required on an essential basis in both regions of the community and awareness programs from health providers, similar in present study essential programs. In another research subject, the 190 students evaluated their attitude towards cough etiquettes for the prevention of air droplet infection. The percentage of the correct answer was about 61.5%. The low level of information declared the current necessity for establishing the health education program, which would be the prior responsibility of stalk holders. Similar to this study, the patients showed an adequate level of knowledge while, on the other hand, they had a low level of application. They uncover community-based facts about health care education[14-15-16].

CONCLUSION

According to the current requirement of health sensibility among the community due to running pandemic situations of the coronavirus worldwide, the study revealed the hidden aspects of community orientation regarding the prevention form air born disease. Following the study results, they need proper education about respiratory hygiene, and by adopting which measures they can incorporate the appropriate care and cope with any health situation.

Author's Contribution:

Concept & Design of Study:	Ajmaal Jami
Drafting:	Abdul Aziz Qureshi, Ahmed Mujtaba Memon
Data Analysis:	Rizwan Ali Tunio, Hina Khan, Anus Bin Tariq
Revisiting Critically:	Ajmaal Jami, Abdul Aziz Qureshi
Final Approval of version:	Ajmaal Jami

Conflict of Interest: The study has no conflict of interest to declare by any author.

REFERENCES

1. Fajemilehin BR, Dare AO, Oluseyi AO. Knowledge and Practice of Airborne and Droplet Precautions within the Emergency Departments of Selected Hospitals in Osun State, Nigeria. Int J Caring Sci 2018;11(3).
2. Askarian M, Aramesh K, Palenik CJ. Knowledge, attitude, and practice toward contact isolation precautions among medical students in Shiraz, Iran. Am J Infection Control 2006;34(9):593-6.
3. Hambire C, Patil A, Patekar D, Wani V, Hambire UV. Awareness and perception regarding hand hygiene among dental students in Western India. Int J Scientific Res 2020;9(1).
4. Shrivastava PS, Shrivastava SR. A cross sectional study to assess the awareness and practice about cough etiquettes among respiratory symptomatic patients in Tamil Nadu. Int J Comm Med Publ Health 2019;6(10):4248.
5. Zayas G, Chiang MC, Wong E, MacDonald F, Lange CF, Senthilselvan A, et al. Effectiveness of cough etiquette maneuvers in disrupting the chain of transmission of infectious respiratory diseases. BMC Public Health 2013;13(1):811.
6. Seale H, Mak JP, Razee H, MacIntyre CR. Examining the knowledge, attitudes and practices of domestic and international university students towards seasonal and pandemic influenza. BMC Public Health 2012;12(1):307.
7. VandenDriessche K, Marais BJ, Wattenberg M, Magis-Escurra C, Reijers M, Tuinman IL, et al. The Cough Cylinder: a tool to study measures against airborne spread of (myco-) bacteria. The Int J Tuberculosis Lung Dis 2013;17(1):46-53.
8. Eames I, Tang JW, Li Y, Wilson P. Airborne transmission of disease in hospitals. J R Soc Interface 2009;6:S697–S702.
9. Nielsen PV. Control of airborne infectious diseases in ventilated spaces. J Royal Society Interface 2009;6(suppl_6):S747-55.
10. Wood ME, Stockwell RE, Johnson GR, Ramsay KA, Sherrard LJ, Jabbour N, et al. Face masks and cough etiquette reduce the cough aerosol concentration of Pseudomonas aeruginosa in people with cystic fibrosis. Am J Respiratory and Critical Care Med 2018;197(3):348-55.
11. Stockwell RE, Wood ME, He C, Sherrard LJ, Ballard EL, Kidd TJ, et al. Face masks reduce the release of Pseudomonas aeruginosa cough aerosols when worn for clinically relevant periods. Am J Respiratory Cri Care Med 2018;198(10):1339-42.
12. Nasreen S, Azziz-Baumgartner E, Gurley ES, Winch PJ, Unicomb L, Sharker MA, et al. Prevalent high-risk respiratory hygiene practices in urban and rural Bangladesh. Tropical Medicine & Int Health 2010;15(6):762-71.
13. Nizame FA, Nasreen S, Unicomb L, Southern D, Gurley ES, Arman S, et al. Understanding community perceptions, social norms and current practice related to respiratory infection in Bangladesh during 2009: a qualitative formative study. BMC Public Health 2011;11(1):901.
14. Jin BY, Kim S. University students' cough etiquette knowledge and practice to protect droplet infection. J Korean Biol Nurs Sci 2015;17(4):348.
15. Kim OS, Oh JH, Kim KM. Knowledge of and compliance with cough etiquette among nursing and allied health college students. Korean J Nosocomial Infection Control 2012;17(2):61-9.
16. Song MS, Yang NY. Knowledge and compliance with cough etiquette among elderly in the community. J Korean Academic Society of Home Health Care Nursing 2017;24(1):52-60.