



CODEN [USA]: IAJPBB

ISSN : 2349-7750

**INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES**

SJIF Impact Factor: 7.187

Available online at: <http://www.iajps.com>

Research Article

**KNOWLEDGE, ATTITUDE AND PRACTICES REGARDING
CHOLERA IN COMMUNITY OF BHALWAL
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ansa.ch97@gmail.com**Abstract:**

Background: Research showed that in a community about 75% of people were infected with Vibrio cholerae did not develop any symptoms, although the bacteria were present in their faeces for 7–14 days after infection and were shed back into the environment, potentially infecting other people. The mode of transmission of Cholera was through fecal contamination of food or water.

Objective: The objective of study was to explore, assess and provide knowledge, attitude and practices regarding cholera in community of Bhalwal so that we may overcome the causes of cholera by informing the people about its precautions.

Methodology: Probability convenient sampling method and questionnaires were used to get demographic and research data of 100 participants.

Result: As the research data showed that in a community of Bhalwal where 100 patients participated and they didn't know what was the actual cause of cholera 11% in the population of 100 said contaminated hands were the actual cause; 13% said drinking contaminated water was the actual source of being infected while 9% said changes in weather; 8% replied use of unwanted fruits and vegetables were spreading this disease among them.

Conclusion: It was assessed that lack of knowledge was the main reason to spread out cholera in the community. Basically, to acquire knowledge can alter the attitude of people towards any disease and as their attitude will transform towards the disease they will start its practices in practical life.

Key words: Cholera, Vibrio Cholerae, Knowledge, Attitude, Practices, Contaminated Water and Food, Community, Disease, Water-borne, Drinking, Research, Symptoms.

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Please cite this article in press Qamar Mubeen et al, *Knowledge, Attitude And Practices Regarding Cholera In Community Of Bhalwal (Zahoor Hayat Colony), Indo Am. J. P. Sci, 2023; 10 (05).*

INTRODUCTION:

Background

Before starting the topic one must know about what is the exact meaning of knowledge e.g. “Facts, information and skills acquired through experience or education; the theoretical or practical understanding of a subject” whereas attitude refers to “a settled way of thinking or feeling about something” and practices are the “Actual application or use of an idea, belief, or method as opposed to theories relating to it.

Now coming towards the topic regarding “knowledge, attitude and practices regarding cholera in community of Bhalwal (Zahoor Hayat Colony). Basically, Cholera is a water and food-borne infectious disease caused by *Vibrio cholerae*. Cholera usually causes fatality in the case of severe infections. Furthermore, cholera outbreaks are still recurring over time, especially in many developing countries. Cholera outbreak may be due to lack of basic knowledge, awareness and preventive attitude among public.

In developing countries, cholera often occurred as rapidly progressive, large-scale outbreaks (Swerdlow, et al., 2017). Those large-scale outbreaks caused a high burden of disease and rapidly overwhelmed curative health care services, particularly during complex humanitarian emergencies or in settings where public health systems had broken down (Swerdlow & Isaacson, 2014). Natural disasters like earthquake, tsunami, volcanic eruptions, landslides and floods also contributed to outbreak by disrupting the normal balance of nature. (Quadri, 2015)

People ingested about 2.7-3.7 liter of water a day in every day (Mayo Clinic Staff, 2018). It was also reported that human life on our planet is highly dependent on clean water supply. However, some irresponsible people contaminated natural sources of surface source by pushing industrial waste (Ali AF, 2018). Lack of safe drinking water promoted a number of water-borne diseases. (Lum M, 2018)

It was cleared from diagnosis of the earlier years that cholera depended mainly on culturing the causative bacteria from a stool sample of the patient (Talaie M. et. al, 2015). Rapid testing might also provide a preliminary result to start a targeted treatment plan (Mutreja A, Dougan G, 2020). The management of cholera consisted of antibiotics for the infection, and rehydrating measures for the vomiting and diarrhea through electrolytes and fluids administration.

(Taylor DL, 2015). However, the key to prevent cholera outbreaks was through improving public hygiene, water sanitation, and sewage systems. Additionally, cholera vaccination might play an important role in infection control and prevention.

(Anetor GO, 2020)

Cholera is a contagious infection that can be fatal; in spite of this, it can be easily prevented by sticking to proper hygienic measures as well as administering cholera vaccine. However, prevention of cholera is highly dependent on the knowledge and attitude of the general population toward the symptoms and preventive measures of cholera.

Objective of the study:

The objective of study was to explore, assess and provide knowledge, attitude and practices regarding cholera in community of Bhalwal so that we may overcome the causes of cholera by informing the people about its precautions.

Conceptual Definition of Cholera:

Cholera is an infectious disease that causes severe watery diarrhea, which can lead to dehydration and even death if untreated. It is caused by eating food or drinking water contaminated with a bacterium called *Vibrio cholerae*.

Operational Definition of Cholera:

Cholera is an acute diarrheal infection caused by ingestion of food or water contaminated with the bacterium *Vibrio cholerae*. Cholera remains a global threat to public health and an indicator of inequity and lack of social development.

Hypothesis:

Lack of personal hygiene and improper sanitation habits are the major causes of the occurrence of cholera. Knowledge, attitude and practices about any diseases are interlinked with each other and if people would have no knowledge about the disease then how they will take steps to rectify it.

Research Questions:

1. Does Personal Hygiene play any role to minimizing diseases among people?
2. How much is the role of personal beliefs in controlling the any type of disease?
3. Does literacy rate has direct impact to reduce the diseases?

4. What was the most effective channel of communication to spread health info in the public?
5. Should we use multiple sources to spread health info among people?

Problem Statement:

Although data was collected personally from the infected participants via questionnaire but during the research some participants were hesitating to tell about the personal hygiene questions. So, provided data may has some errors. The people had low education couldn't understand about the research questions and it was hard for them to respond. Lack of knowledge about the cholera hampered to collect data on the assigned topic

Literature Review:

Reported by a Community, 2017 showed that in a community about 75% of people were infected with *Vibrio cholerae* did not develop any symptoms, although the bacteria were present in their faeces for 7–14 days after infection and were shed back into the environment, potentially infecting other people. The mode of transmission of Cholera was through fecal contamination of food or water.

Yousuf RM et. al. 2017 described in the research that Robert Koch in 1884 identified *Vibrio cholerae* in pure culture from a stool sample originated in Egypt. The existence of cholera toxin was first hypothesized by Koch in 1886. Dr. Koch preached that the symptoms caused by *Vibrio cholerae* were due to a toxic substance produced by *Vibrio cholera*. However, the discovery of cholera toxin was needed to till 1959.

World Health Organization, 2014 reported that worldwide, an estimated 1.4 to 4.3 million cholera cases and 28,000 to 142,000 cholera deaths occurred every year. In places where cholera occurred regularly, an estimated 1.4 billion people were at risk for disease each year. Slow progress in providing access to safe water and sanitation to underserved populations, limitations of surveillance systems for early detection of cholera outbreaks, and lack of access to timely and appropriate healthcare had contributed to this burden of disease.

National Institute of Health Sciences, 2020 revealed in the report that antibiotics (Doxycycline, Ciprofloxacin, Cefixime, Cotrimaxazole, and Erythromycin) might reduce the duration of disease and period of excretion of *V. cholerae* in the stool of an infected patient. A single-dose live oral cholera vaccine (lyophilized CVD 103-HgR) for adults 18 – 64 years old was recommended who were travelling to an area of active cholera transmission. Two other

oral inactivated or non-live cholera vaccines were World Health Organization (WHO) prequalified.

Ministry of Health Pakistan, 2006 published in a report that Pakistan is a developing country, currently facing the double burden of disease with infectious diseases contributing to 26% of the total disease burden.

Narain JP, Bhatia R., 2010 also said that cholera was an endemic disease in Pakistan and had never been considered a significant cause of diarrhea before 1988.

World Health Organization, 2011 elaborated that outbreaks of cholera were attributed to poor environment / sanitation condition and consumption of contaminated water and food due to natural calamities which had displaced thousands of population.

Rahim M, 2010 demonstrated that in 2005, Disease Early Warning System (DEWS) was introduced in Pakistan by WHO, to undertake a prompt investigation and mitigation of alerts and outbreaks of priority diseases through establishment of active surveillance in earth quack affected districts as well as all over Pakistan. From 2005-2009, around 261 alerts and 46 outbreaks of acute watery diarrhea/suspected cholera were responded by DEWS team all over Pakistan. A total of 4,610 cases of suspected cholera were reported by Ministry of health (MOH) Pakistan in 2006. In 2010, after flood, this condition got even worse and Ministry of Health reported 99 confirmed *Vibrio cholerae* O1 cases in the country.

World Health Organization, 2003 published that in most of the cities of Pakistan, the elementary source of provision was ground water supply, which contained various pathogens including many viral, bacterial, and protozoan agents causing 2.5 million deaths from endemic diarrheal disease each year.

Agarwal S. K, 2002 showed in the studies that water pollution was a physical process that occurred in various water resources such as lakes, ground water, and rivers due to anthropogenic activities. The utilization of poor quality water caused water-borne diseases and their spread. In Pakistan, about 50% of diseases and 40% of deaths occurred due to poor drinking water quality reported in community health studies.

Ministry of Water & Power, 2002 showed in the report that improper and poor water supply for drinking purpose had a great health risk to the public. The release of toxic chemicals from urban communities and industries without any treatment into water bodies deteriorated water quality and also caused adverse effects to human beings. In Pakistan,

water and sanitation agency had been focusing on water quantity due to increasing requirements rather than water quality. All this was due to the lack of awareness, treatment technology, equipment, trained personnel, and quality monitoring.

National Institute of Health Sciences, 2020 showed in the research regarding cholera infection that it was occurred often mild or without symptoms, but might sometimes be severe and life threatening. Approximately 5-10% infected persons in the early stages would have severe disease characterized by profuse watery diarrhea, vomiting, and leg cramps. In those people, rapid loss of body fluids led to dehydration and shock. The contagious period for cholera began as soon as the organism was excreted in the feces. This might occur as early as about 6 to 12 hours after exposure to the bacteria and could last for about 7 to 14 days.

After reviewing the literature of cholera disease how much it was mandatory to acquire knowledge, attitude and practices regarding cholera in a community and the current study was arranged in order to spread and assess the knowledge, attitude and practices regarding this disease.

Methodology:

Study Design:

It was based on case control study.

Study Settings:

The study was conducted at community of Zahoor Hayat Colony, Bhalwal.

Study Period:

This study was completed in 3 months from (November, 2020 to January, 2021)

Source of Population:

The population source in this study was 100 patients who were affected of cholera at Zahoor Hayat Colony, Bhalwal

Inclusion Criteria:

Only the patients within the age of 18-65 years.

Exclusion Criteria:

The respondents who didn't give informed consent.

Ethical Consideration:

Informed written consent and assent was obtained from the college to conduct the research work and then from the each infected patient of Zahoor Hayat Colony, Bhalwal.

Sampling Method:

Probability Convenient Sampling.

Methods of Data Collection:

Questionnaires were used to collect the demographic data and research related information.

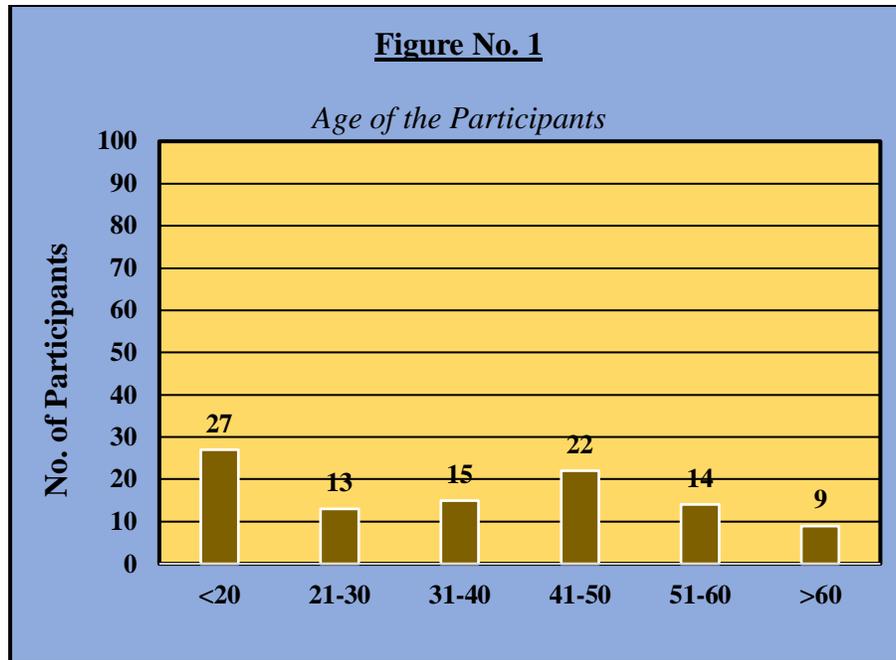
Result:

Cholera is an infectious disease that cause severe watery diarrhea, which can led to dehydration and even death if not properly managed with rehydration. It is caused by eating food or drinking water contaminated with a bacterium called *Vibrio cholerae*. So, the current research was conducted regarding knowledge, attitude and practices of cholera in a community of Bhalwal (Zahoor Hayat Colony) and in the under below table demographic data of the respondents is shown.

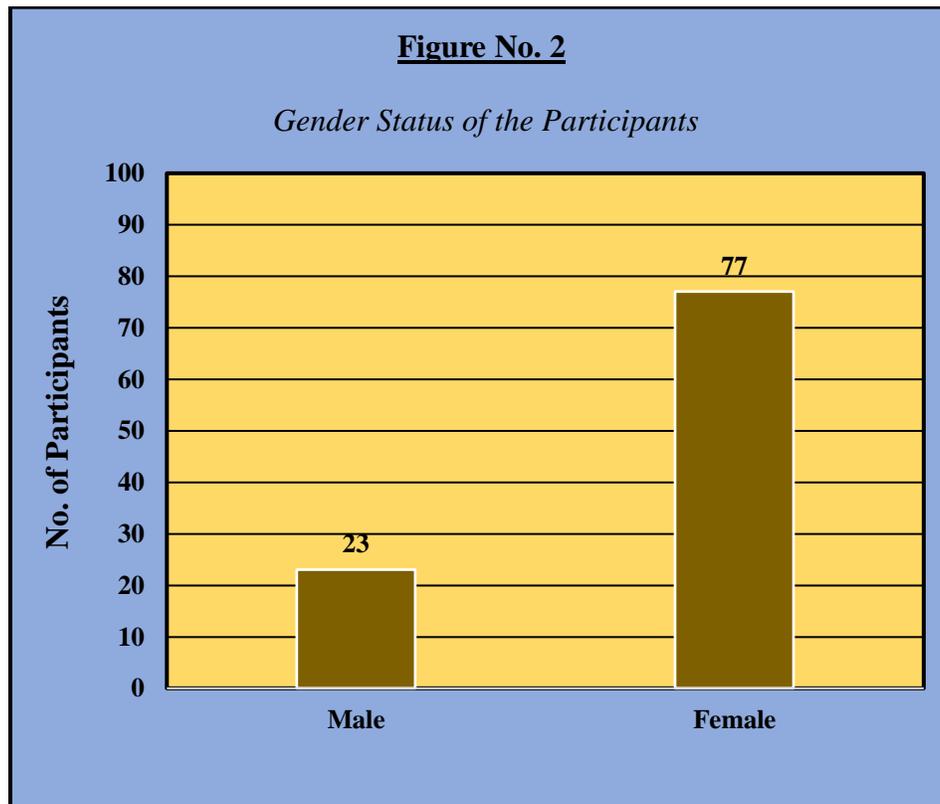
Table No. 1*Demographic Data of the Respondents*

Description	Frequency (n)	Percentage
<u>Age (Years)</u>		
<20	27	27%
21-30	13	13%
31-40	15	15%
41-50	22	22%
51-60	14	14%
>60	9	9%
Total	100	100%
<u>Gender</u>		
Male	23	23%
Female	77	77%
Total	100	100%
<u>Religion</u>		
Muslim	97	97%
Non-Muslim	3	3%
Total	100	100%
<u>Qualification</u>		
Matric	33	33%
F.A.	15	15%
B.A.	11	11%
Masters	9	9%
Degree	7	7%
Diploma	11	11%
Others	14	14%
Total	100	100%

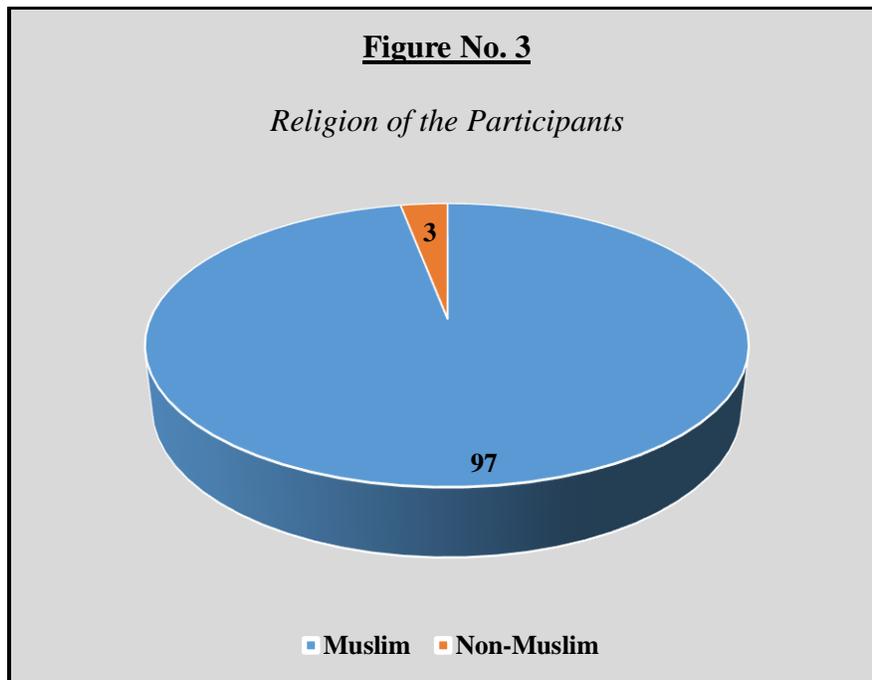
The research was conducted regarding knowledge, attitude and practices of cholera in a community of Bhalwal (Zahoor Hayat Colony) in which 100 patients who infected with cholera were participated. In a sample of 100 patients there were 27 participants had an age of <20 years ; 13 were belonged to an age group of (21-30) years; 15 with an age group of (31-40); 22 out of 100 were belonged to an age group of (41-50) years whereas 14 had an age group of (51-60) years and only 9 were >60 years as shown in the (Figure no. 1 and Table no. 1).



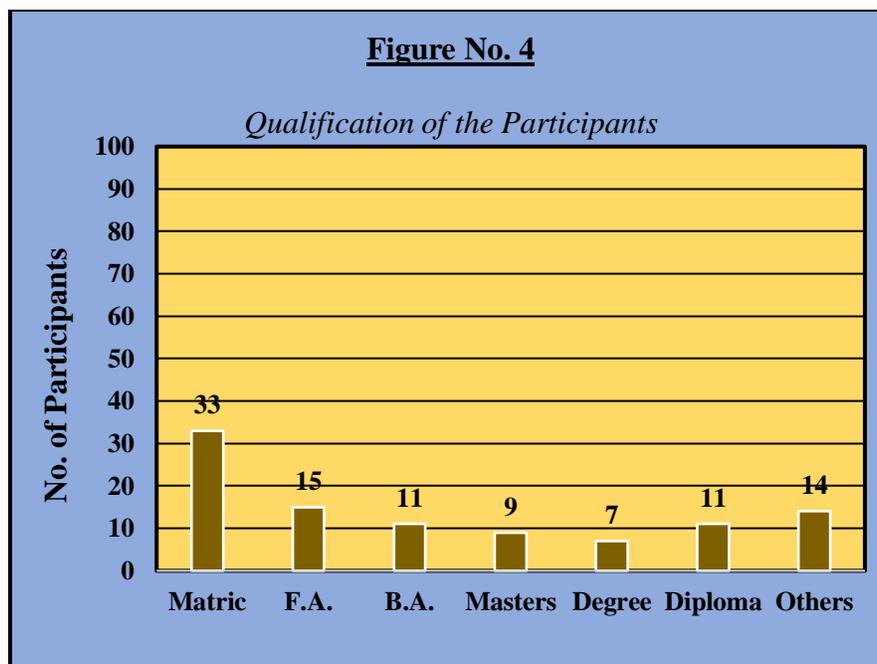
The research was conducted regarding knowledge, attitude and practices of cholera in a community of Bhalwal (Zahoor Hayat Colony) in which 100 patients who infected with cholera were participated. In a sample of 100 patients there were 23 male participants whereas 77 were female (**Figure no. 2 and Table no. 1**).



The research was conducted regarding knowledge, attitude and practices of cholera in a community of Bhalwal (Zahoor Hayat Colony) in which 100 patients who infected with cholera were participated. In a sample of 100 patients there were 3 non-Muslims whereas 97 participants were Muslims. (**Figure no. 3 and Table no. 1**).



As the research was conducted regarding knowledge, attitude and practices of cholera in a community of Bhalwal (Zahoor Hayat Colony) in which 100 patients who infected with cholera were participated. In a sample of 100 patients there were 33 participants had Matric qualification; 15 were F.A.; 11 had B.A. degree; 9 were holding Masters Degree whereas 7 were holding other than Masters degree; 11 had diploma and 14 were holding others qualification. (Figure no. 4 and Table no. 1).



The research was conducted regarding knowledge, attitude and practices of cholera in a community of Bhalwal (Zahoor Hayat Colony) consolidated result of research is shown as under below (**Table No. 2**).

Table No. 2
Consolidated Result of Research Related Questions

The research was conducted regarding knowledge, attitude and practices of cholera in a community of Bhalwal (Zahoor Hayat Colony) consolidated result of research is shown as under below (**Table No. 2**).

Sr. No.	Questions	Total Participants	Ans			
			Yes	%age	No	%age
1	What is the cause of cholera?					
a)	Contaminated hands	11				
b)	Drinking contaminated water	13				
c)	Changes in weather	9				
d)	Use of unwashed fruits and vegetables	8				
e)	Uncooked food and products	19				
f)	All of the above	33				
g)	None of the above	7				
	Total Participants	100				
2	What are the signs and symptoms of cholera?					
a)	Profuse vomiting	15				
b)	Watery diarrhea	27				
c)	Skin allergy is most common	10				
d)	Profuse vomiting, watery diarrhea and abdominal pain	6				
e)	Fever and general weakness	9				
f)	All of the above	23				
g)	None of the above	10				
	Total Participants	100				

Table No. 2*Consolidated Result of Research Related Questions*

29 The research was conducted regarding knowledge, attitude and practices of cholera in a community of

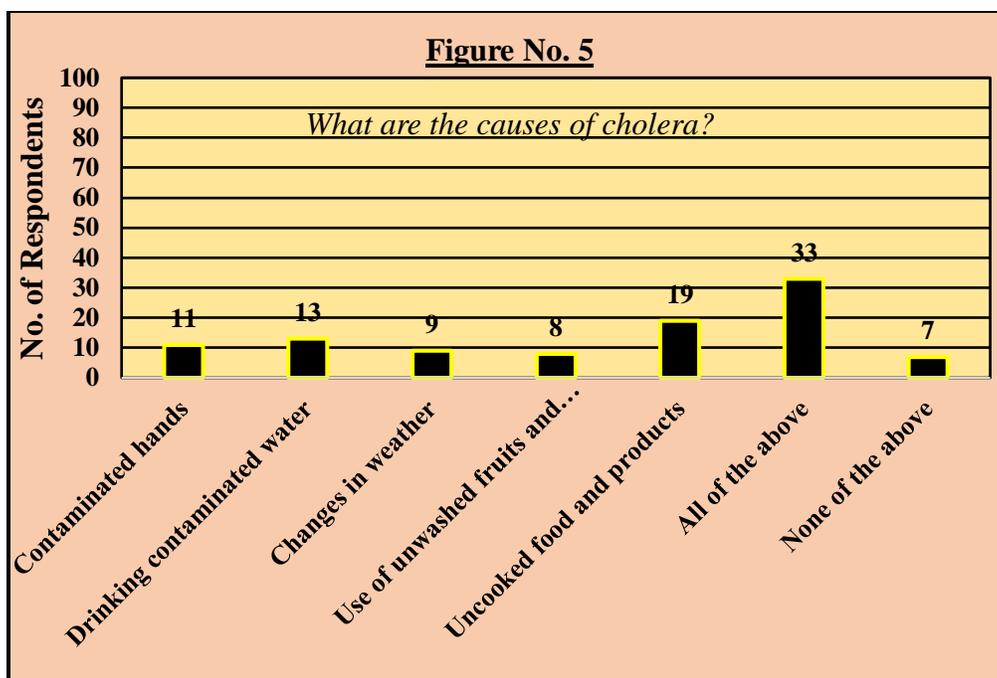
Sr. No.	Questions	Total Participants	Ans			
			Yes	%age	No	%age
3	Do you wash hands with soap each time after using toilet?	100	77	77%	23	23%
4	Do you think cholera is punishment of sins?	100	33	33%	67	67%
5	Do you drink water after boiling?	100	22	22%	78	78%
6	Are you vaccinated against cholera?	100	11	11%	89	89%
7	Is cholera ends within 2 to 5 days?	100	66	66%	34	34%
8	Is ORS effective in treatment of cholera?	100	45	45%	55	55%
9	Is it necessary to hospitalized in case of cholera?	100	33	33%	67	67%
10	Disposing of human excreta has no role in prevention of cholera?	90	63	63%	27	27%
11	Social distancing is important in prevention of disease?	100	56	56%	44	44%
12	Cholera is most common in children especially under 5 years?	100	39	39%	61	61%

Bhalwal (Zahoor Hayat Colony) consolidated result of research is shown as under below (**Table No. 2**).

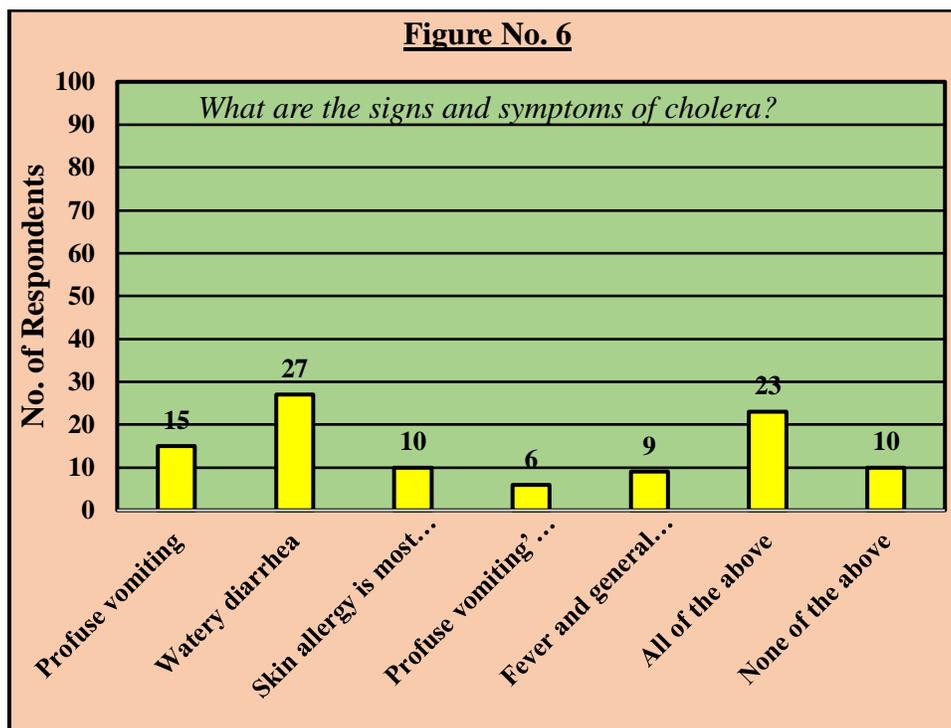
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Sr. No.	Questions	Total Participants	Ans			
			Yes	%age	No	%age
13	Do you take medicines by clinic, Hospital or health worker?	100	78	78%	22	22%
14	Do you use herbal remedies?	100	22	22%	78	78%
15	Do you know how to make ORS homemade?	100	13	13%	87	87%
16	Do you only prayer in case of cholera?	100	45	45%	55	55%
17	Do you prefer only rest without remedy or medicine?	100	12	12%	88	88%
18	Do you use boil water at least 5 minutes in case of cholera?	100	23	23%	77	77%
19	Vendor food is dangerous in cholera?	100	59	59%	41	41%
20	Homemade ORS is effective for rehydration?	100	50	50%	50	50%
21	Improving Hygienic condition can prevent cholera?	100	33	33%	67	67%
22	Do you wash hands before cooking for prevention?	100	55	55%	45	45%

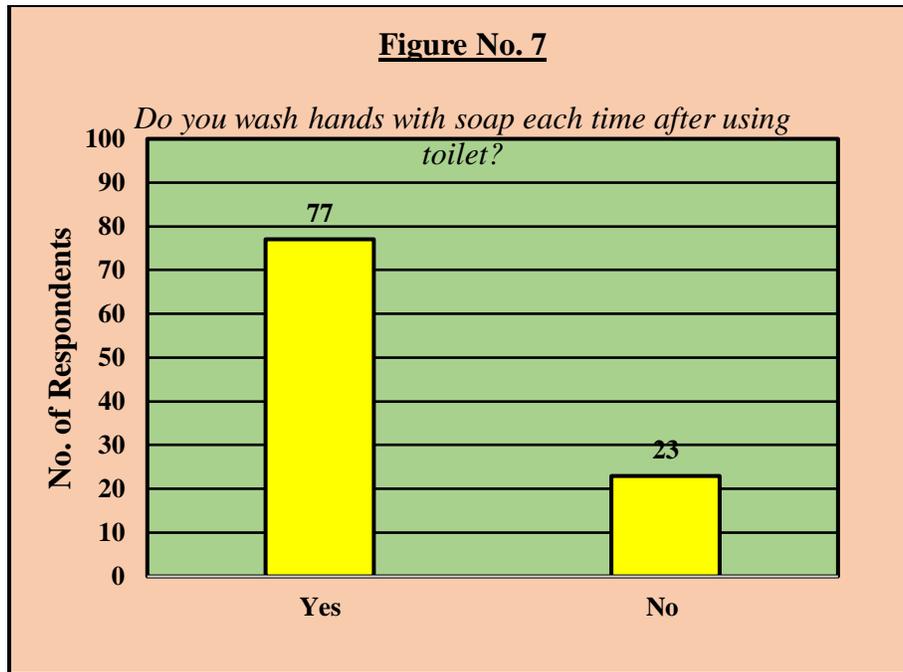
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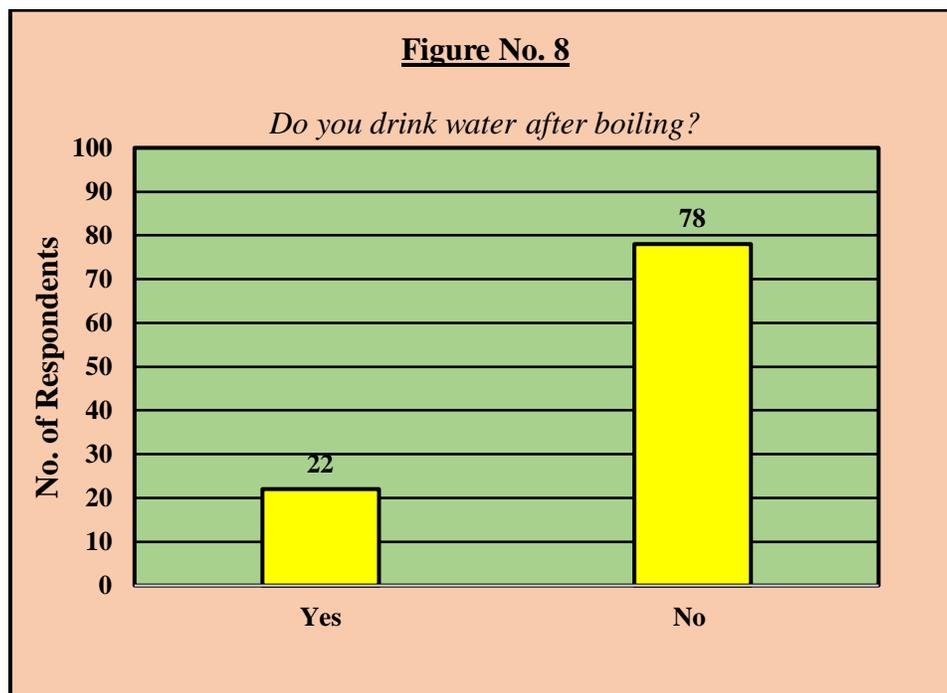
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As the research was conducted regarding knowledge, attitude and practices of cholera in a community of Bhalwal (Zahoor Hayat Colony) in which 100 patients who infected with cholera were participated. When a question was asked that “Do you wash hands with soap each time after using toilet?” 77 said “Yes” and 23 replied “No”. (**Figure no. 7 and Table no. 2**).



As the research was conducted regarding knowledge, attitude and practices of cholera in a community of Bhalwal (Zahoor Hayat Colony) in which 100 patients who infected with cholera were participated. When a question was asked that “Do you drink water after boiling?” 22 said “Yes” and 78 replied “No”. (**Figure no. 8 and Table no. 2**).



It can be determined from the consolidated result that there was lack of knowledge existed among the people of community Bhalwal caused of this disease. As they didn't know what was the actual cause of cholera 11% in the population of 100 said contaminated hands were the actual cause; 13% said drinking contaminated water was the actual source of being infected while 9% said changes in weather; 8% replied use of unwanted fruits and vegetables were spreading this disease among them. **(Table. No. 2)**

It was shown in the result that in the population of 100 respondents only 77% were used to wash their hands whereas 23% didn't ever bother about it. 33% had a belief that cholera was punishment of their sins while 67% were disagreed from this statement. Only 22% were using boiled water for drinking out of 100 respondents while 78% were using tap water. 11% were vaccinated against cholera and 89% found with an attitude that it was useless against cholera disease. **(Table. No. 2).**

In view of the above, it was resulted that lack of knowledge about cholera disease was the main cause of being infected. If the people will have accurate knowledge about the disease then obviously it will change their attitude towards the cholera and after having this attitude they will start to implement it in their daily lives. How much it is imperative to create awareness among the population of Pakistan regarding personal hygiene as they even didn't bother to wash their hands after using toilet. Review of the literature and intro also depicted lack of hygiene knowledge, attitude and practices among the nation of Pakistan causing lot of burden of disease for the state.

Discussion:

As the research was conducted regarding knowledge, attitude and practices of cholera in a community of Bhalwal (Zahoor Hayat Colony) in which 100 patients who infected with cholera were participated. It was determined from the result that only 33% in the entire population knew the causes of cholera even very few participants were aware about the exact signs and symptoms of cholera. 23% didn't wash their hands after using toilets while 77% used to wash their hands. It was unclear from the result that either higher qualified people had good knowledge as compared to matriculation and if higher degree holders had a good knowledge regarding personal hygiene then what was the major cause of this disease among them.

It was also unclear from the research data either male had good hygiene knowledge, attitude and practices or females and what age group participants were

mostly infected by cholera. There were 100 participants had an age of <20 years to >60 having education form Matric to Masters; although some of them found with good knowledge about the disease but still infected of cholera. Were there any negligence found in their attitude to apply the knowledge and stay away from this disease or lack of practices regarding personal hygiene caused of this disease?

Research showed that people must adopt personal hygiene and they must clean their surroundings too in order to stay away from communicable and non-communicable diseases then why the participants in the result didn't know ORS might be effective in this disease; 55% didn't know ORS can be used in the treatment of cholera.

As we know that a human ingested 2.7 litre to 3.7 litre of water a day and highly dependent on the cleaned water supply & every year more than 3.4 million people died because of water related diseases and cholera is a water-borne disease as earlier shown in the literature then why the participants in the research didn't know contaminated water might be the cause of cholera and they must use boiled water for drinking even literature also proved that poor environment/sanitation condition and consumption of contaminated water caused cholera among people then why the people of Pakistan are too much careless about the personal and environmental hygiene practices? If the only literacy rate is the solution to cope up with the diseases then in the current research even highly qualified people didn't know about personal hygiene. Overall result showed lack of knowledge, attitude and practices among the people in a community of Bhalwal regarding cholera.

Cholera is an infectious disease that cause severe watery diarrhea, which can led to dehydration and even death if not properly managed with rehydration. It is caused by eating food or drinking water contaminated with a bacterium called *Vibrio cholerae*. So, the current research was conducted regarding knowledge, attitude and practices of cholera in a community of Bhalwal (Zahoor Hayat Colony) and in the under below table demographic data of the respondents is shown.

The research was conducted regarding knowledge, attitude and practices of cholera in a community of Bhalwal (Zahoor Hayat Colony) in which 100 patients who infected with cholera were participated. In a sample of 100 patients there were 27 participants had an age of <20 years ; 13 were belonged to an age

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The research was conducted regarding knowledge, attitude and practices of cholera in a community of Bhalwal (Zahoor Hayat Colony) in which 100 patients who infected with cholera were participated. In a sample of 100 patients there were 3 non-Muslims whereas 97 participants were Muslims. **(Figure no. 3 and Table no. 1)**.

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It can be determined from the consolidated result that there was lack of knowledge existed among the people of community Bhalwal caused of this disease. As they didn't know what was the actual cause of cholera 11% in the population of 100 said contaminated hands were the actual cause; 13% said drinking contaminated water was the actual source of being infected while 9% said changes in weather; 8% replied use of unwanted fruits and vegetables were spreading this disease among them. **(Table. No. 2)**

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In view of the above, it was resulted that lack of knowledge about cholera disease was the main cause of being infected. If the people will have accurate knowledge about the disease then obviously it will change their attitude towards the cholera and after having this attitude they will start to implement it in

their daily lives. How much it is imperative to create awareness among the population of Pakistan regarding personal hygiene as they even didn't bother to wash their hands after using toilet. Review of the literature and intro also depicted lack of hygiene knowledge, attitude and practices among the nation of Pakistan causing lot of burden of disease for the state.

CONCLUSION:

From the above result and the discussion, it was assessed that lack of knowledge was the main reason to spread out cholera in the community. While in the population of 100 infected people some of them had good knowledge but due to non-serious attitude towards the cholera they infected of this disease. Even some of the population had some kind of religious beliefs regarding this disease. In view of the earlier studies it was evaluated that if we spread accurate information regarding the disease and also provide its precautions among the people their attitude may altered and then to have attitude of personal hygiene they will start some implementation of their knowledge that will become practices of their daily lives. Basically, to acquire knowledge can alter the attitude of people towards any disease and as their attitude will transform towards the disease they will start its practices in practical life.

Recommendations:

Through TV channel commercials we can create a sense of cleaning among the population of Pakistan because most of the females watch TV all the day not only females but also male also watch TV some hours a day. TV can be a good source to spread awareness among people the people while radios also can play vital role in this regard although some of the population listens radio but we must spread info through multiple channels (TV, Radio, Print media, leaflets, hand bills etc.) to create awareness regarding the cholera. Because it takes time to transform the habits of humans so we continuously aware the people about the hazards associated with cholera and gradually this information definitely change their attitude and it will become practices of their routine life. Knowledge is the first step; in case it would provide on continuous basis then after acquiring knowledge a person's attitude will alter and in the last the person will think to implement this knowledge to make his/her life disease free.

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