

Relationship between the demographic factors of people living in cholera endemic areas and their knowledge towards the preventive measures against the disease

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Abstract

Cholera is an infectious, acute bacterial disease caused by Vibrio Cholera. Watery diarrhea is the predominant clinical sign of the disease. Around the world, it is thought to be responsible for up to 4 million cases annually. This digestive contagious is characterized by high-volume fluid loss and electrolyte disturbances that may advance to hypovolemic shock and finally death. This survey study seeks to discover how well-informed, how individuals in Diyala, Iraq, feel about cholera epidemics, and how they behave in practice. In the present research, there were a total of 272 participants, with a mean age of 20 to 29 years, 114 participant men and 158 participant women, 74% of them residing in urban regions, and 68% having a college degree. The biggest number of those at risk 90.07% are those who live in areas with polluted water, and the highest percentage of accurate illness diagnoses 76.84% While just a small portion of participants 51.84% are aware of illness treatments. Despite the fact that a large majority of people—nearly 90%—know how to avoid cholera, only 51% of the sample understood how to cure it. The results showed that there was no statistically significant association between the demographic variables and the current study (age, Work, and residency). Even if they are closely related to (gender, educational level), 69.49% of participants had excellent understanding of the condition, while 27.21% have fair knowledge. The remaining percentage respectively, had little expertise. There are simple main steps when taking into considered can dramatically reduce risk of being infected with this disease particularly in area where the illness is widespread include: washing hands routinely and ensure that food and water are safe to consumed.

Keywords: Cholera, Diyala, knowledge, preventive methods.

العلاقة بين العوامل الديموغرافية للأشخاص الذين يعيشون في المناطق الموبوءة بالكوليرا ومعرفة تجاه الإجراءات الوقائية ضد المرض

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الخلاصة

الكوليرا :مرض جرثومي معدي حاد تسببه ضمات الكوليرا .الاسهال المائي هو العلامة السائدة للمرض . في جميع انحاء العالم يعتقد انه مسؤول عن ما يصل الى (4) مليون حالة اصابة سنوياً . يتميز هذا الاضطراب الهضمي بفقدان كميات كبيرة من السوائل واضطرابات بالشوارد في الجسم والتي تتطور الى صدمة نقص حجم الدم مما يؤدي الى الموت في النهاية . تسعى هذه الدراسة الاستقصائية الى اكتشاف مدى وعي الأفراد في ديالى بالعراق بأوبئة الكوليرا وكيف يتصرفون في الواقع العملي .في البحث الحالي كان هناك ما مجموعه 272 مشاركاً بمتوسط عمر 20-29 عاماً , 114% من الذكور و 158 % من الإناث , 74% منهم يقيمون في مناطق حضرية , 68% حاصلون على دراسة جامعية . اعلى نسبة من المعرضين للخطر 90,07 % أولئك الذين يعيشون في مناطق فيها مياه ملوثة , 76.84% من العينة على علم بكيفية تشخيص المرض بدقة بينما نسبة صغيرة منهم 51.84% على دراية بعلاجات المرض . على الرغم من حقيقة ان الغالبية العظمى من الناس ما يقرب 90% يعرفون كيفية تجنب وباء الكوليرا الا ان 51% فقط من العينة فهم كيفية علاجها . أظهرت النتائج عدم وجود علاقة ذات دلالة إحصائية بين المتغيرات الديموغرافية والدراسة الحالية فيما يخص (العمر, العمل, الإقامة) بينما يوجد ارتباط وثيقاً (دلالة احصائية) بين (الجنس ,المستوى التعليمي) والدراسة الحالية .كان 69.49% من المشاركين لديهم فهم ممتاز للحالة بينما 27.21% منهم لديهم معرفة جيدة والنسبة المتبقية من العينة لديهم خبرة قليلة هناك خطوات رئيسية بسيطة يجب أخذها في الاعتبار يمكن أن تقلل بشكل كبير من خطر الإصابة بهذا المرض خاصة في المناطق التي ينتشر فيها الوباء وتشمل غسل اليدين بشكل روتيني والتأكد من أن الطعام والماء آمان للاستهلاك .

الكلمات المفتاحية : الكوليرا , ديالى , المعرفة , الطرق الوقائية .

Introduction

Cholera: the acute bacterial disease known as cholera is caused by the bacterium *Vibrio cholera*. The feature change of cholera is watery diarrhea [1]. High-volume fluid loss and electrolyte imbalances are the hallmarks of this intestinal illness, which may progress to hypovolemic shock and eventual death. The illness, which spreads through the feco-oral route, may vary in severity. The most important action is to immediately replace any electrolytes and fluids that lost [2]. Certain types of the bacterium *Vibrio cholerae* may cause infections in the small intestine, which results in the illness known as cholera [3]. The degree of the symptoms can range from mild to serious cases [3]. Severe diarrhea with plenty of fluids loss for a few days is the common symptom. [2] The possibility of nausea & cramps is another symptom [3]. Within hours, severe dehydration and electrolyte imbalance may result from diarrhea. [4] The consequences might include sunken eyes, wrinkles on the hands and feet, skin cold extremities, and a loss of skin elasticity. Pail skin is one sign of dehydration [5] [8]. Symptoms might start to show up two hours to five days after exposure [3]. Annually, there are around four million cases of cholera recorded. Around 1.8 million individuals worldwide consume water from locations that may be home-based to cholera germs due to its contamination with human waste. [6] Outbreaks are known to occur in the underdeveloped nations when standards for water purification and sanitation may not exist. Today, it's estimated that cholera is a problem in 50 nations,

mostly in Asia, Africa and South and center America. The incidence is connected to a seasonal distribution based on when the region's rainy season starts. However, epidemics may be more widespread in other parts of the world, such South and Central America. When a species is brought to a new location where sanitation and medical services have failed, epidemics have been known to spread [7].

Methodologies

A cross-sectional study for individuals in Diyala the Iraqi governorate by performed an limit the study. A self-administered structured questionnaire was distributed through an internet connection. The study addressed participants about their attitudes and actions about this kind of sickness as well as their knowledge of cholera symptoms, cause, and prevention, in addition to sociodemographic data. The SPSS tool, version 24, was used to analyze the data.

Data collection: An internet connection was used to distribute a self-developed questionnaire to subjects in Diyala city. Demographic data was gathered, and respondents were quizzed on their knowledge, attitudes, and behaviors related to cholera infection and prevention.

Results

Table (1) showed how the research sample was distributed according to sociodemographic characteristics. In the current study, a total of 272 individuals were included, with a significant number (51.47%) of participants between the ages of 20 and 29 years, 114 participants of men, and 158 participants of women. Furthermore, 74% of the participants resided in metropolitan areas, and 68% possessed by a university degree.

Table (1): Sociodemographic characteristics of participants.

Demographic characteristics		N	%
Age Group	<20 Years	76	27.94
	20-29	140	51.47
	30-39	30	11.03
	40-49	13	4.78
	≥50 Years	13	4.78
Gender	Male	114	41.91
	Female	158	58.09
Educational level	Primary	3	1.10
	Secondary	3	1.10
	Intermediate	48	17.65
	College	187	68.75
	Post graduated	31	11.40
Work	Student	189	69.49
	Un employed	8	2.94
	Employee	62	22.79

	Other	13	4.78
Residency	Urban	202	74.26
	Rural	70	25.74

Table 2 Based on their understanding of the cholera sickness, respondents accurately identified the illness based on stool samples in 76.84 percent of cases. The largest percentage of (90.07%) at-risk group from persons in areas with polluted water and highly percentage (76.84%) accurate illness diagnosis. While just 51.84 percent of participants knew anything about illness therapy. Nearly 90% of the population is aware of how to avoid the cholera epidemic, but only 51% of the sample was aware of how to treat it.

Table (2): General information about Cholera disease.

Questions	Yes		No		DNK	
	N	%	N	%	N	%
At risk group						
People in contaminated water area	245	90.07	17	6.25	10	3.68
People sewage area	233	85.66	12	4.41	27	9.93
Children	180	66.18	32	11.76	60	22.06
Elderly	145	53.31	46	16.91	81	29.78
Diagnosis						
Stool	209	76.84	21	7.72	42	15.44
Urine	100	36.76	100	36.76	72	26.47
Blood	133	48.90	58	21.32	81	29.78
Clinically	60	22.06	146	53.68	66	24.26
Treatment						
Oraly	141	51.84	35	12.87	96	35.29
Intravenous	171	62.87	25	9.19	76	27.94
To hospital	248	91.18	5	1.84	19	6.99
Prevention						
Decontaminate water at house	222	81.62	20	7.35	30	11.03
Decontaminate water by chlorine	72	26.47	132	48.53	68	25.00
Wash hands	262	96.32	2	.74	8	2.94
Cook food thoroughly	244	89.71	12	4.41	16	5.88
Suitable sewage	245	90.07	4	1.47	23	8.46
Mode of Transmission						
By contaminated water	254	93.38	1	.37	17	6.25
By contaminated food	233	85.66	15	5.51	24	8.82
Direct contact with patient	161	59.19	55	20.22	56	20.59

Both food & water	219	80.51	13	4.78	40	14.71
Symptoms						
Diarrhea	250	91.91	2	.74	20	7.35
Fever	226	83.09	18	6.62	28	10.29
Vomiting	225	82.72	14	5.15	33	12.13
Nausea	224	82.35	13	4.78	35	12.87
Dehydration	229	84.19	5	1.84	38	13.97
Hypotension	114	41.91	48	17.65	110	40.44
Sever dehydration	211	77.57	7	2.57	54	19.85
Shock	83	30.51	80	29.41	109	40.07
Tachycardia	120	44.12	45	16.54	107	39.34
Intensive thirst	210	77.21	15	5.51	47	17.28
What do you do if one of your family infected with cholera? (ORS)	167	61.40	26	9.56	79	29.04
What do you do if one of your family infected with cholera? (breastfeeding)	161	59.19	40	14.71	71	26.10
What do you do if one of your family infected with cholera? (to hospital)	256	94.12	6	2.21	10	3.68

Table 3 It was determined that there was no statistically significant correlation between the present research and demographic factors (age, Work, and residency) even if strongly connected with (gender, educational level).

Table (3): Association between demographic characteristic and knowledge about cholera disease.

Demographic characteristic		Knowledge score						P - value
		Weak		Acceptable		Good		
		N	%	N	%	N	%	
Age Group	<20 Years	3	33.33	24	32.43	49	25.93	0.481
	20-29	6	66.67	37	50.00	97	51.32	
	30-39	0	0.00	10	13.51	20	10.58	
	40-49	0	0.00	1	1.35	12	6.35	
	≥50 Years	0	0.00	2	2.70	11	5.82	
Gender	Male	7	77.78	39	52.70	68	35.98	0.004*
	Female	2	22.22	35	47.30	121	64.02	
Educational level	Primary	1	11.11	2	2.70	0	0.00	0.013*
	Secondary	0	0.00	0	0.00	3	1.59	
	Intermediate	1	11.11	19	25.68	28	14.81	
	College	7	77.78	46	62.16	134	70.90	

	Higher	0	0.00	7	9.46	24	12.70	
Work	Student	8	88.89	56	75.68	125	66.14	0.164
	Unemployed	1	11.11	3	4.05	4	2.12	
	Employee	0	0.00	12	16.22	50	26.46	
	Other	0	0.00	3	4.05	10	5.29	
Residency	Urban	5	55.56	55	74.32	142	75.13	0.423
	Rural	4	44.44	19	25.68	47	24.87	

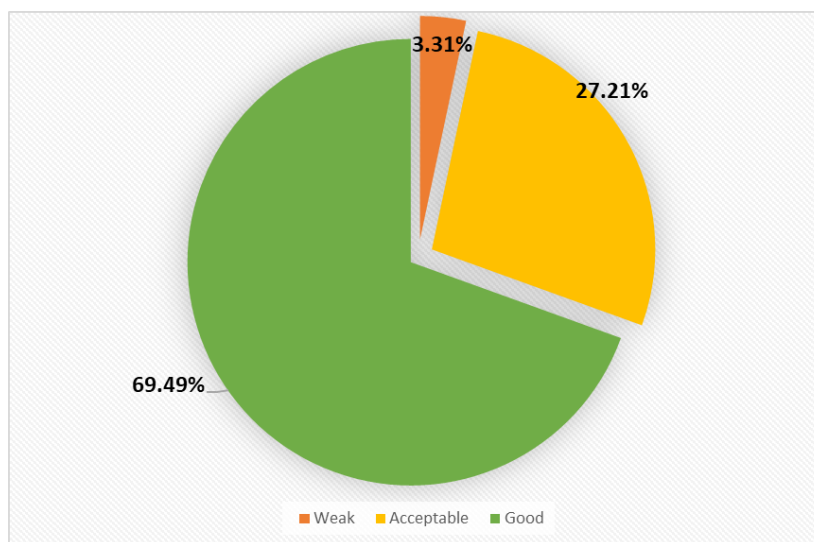


Fig. (1): Knowledge score about cholera disease.

The majority of participant 69% have good knowledge about disease, followed by 27% have acceptable knowledge. The remaining 3% have weak knowledge.

Discussion

Cholera is regarded as a very infectious illness that may cause epidemic break out. This kind of illness is more prevalent in places with poor hygiene practices and improper sanitary infrastructure. Therefore, it is essential to raise public awareness about cholera infection and put the steps that may be taken to avoid it. The results of this investigation revealed a few elements that are crucial in the development of the cholera pandemic in the nation. These elements include barriers to clean water access and to correct inadequate environmental sanitation [9] and to correct Inadequate drainage systems contribute to the cholera pandemic in addition to other things. According to reports, drinking contaminated water is a key risk factor for cholera [10]. Similar to this, inadequate sewage disposal has been recognized as another contributing cause, which contaminates the nearby food and water supply. When individuals drink or eat contaminated food or water, a cholera outbreak may develop. This result is consistent with findings from research on the geospatial evaluation of cholera in a rapidly urbanizing setting, which found that trash dump sites have an impact on the environment and

thus contribute to the spread of cholera [11, 12]. The research also indicated the unclean environment as a causal factor. The study's findings also showed that sick individuals neglected to get adequate care because of fear of persecution or intimidation. Due to financial hardship and inadequate government assistance, some were not able to get therapy [13]. The study's results revealed several important insights that are crucial for improving cholera prevention and control. **First**, there is strong data about the threat and preventative dynamics of cholera transmission, taking into account variables that might prevent the spread of the disease, such as drinking polluted water, living in an unsanitary environment, and improperly disposing of waste. **Second**, the incidence of cholera infection and mortality may be decreased by providing the public with accurate information and raising their understanding of the mechanism and pattern of cholera transmission. [14]. It was determined that the demographic factors in the present research were statistically not substantially related (age, work, and residency). even if strongly connected with (gender, educational level). Furthermore, Wahed *et al* study's [15] from Bangladesh looked at public perceptions of cholera infection and cholera vaccine-based cholera prevention. 2,830 participants in the study who answered the research's questionnaire were counted. According to Wahed *et al* [15], there is a substantial relationship between knowledge level and age, gender, and educational attainment. Similar to the last research, this one revealed a substantial positive association between education level and cholera awareness, with more educated people having greater cholera awareness. The majority of participants (69.49%) had excellent understanding about diseases, while 27.21% have fair knowledge. The remainder (3%) have correspondingly poor knowledge. Additionally, Ncube *et al* evaluations of the community's awareness of cholera prevention in South Africa [16] was conducted. In this research, 96 people were enrolled. According to Ncube *et al*. [16], the South African people's awareness of cholera is unsatisfactory, and the local population is unprepared for the disease's prevention. These results agreed with those of Tappero *et al* [17].

Conclusions

The largest proportion of 90.07% at-risk group from residents of areas with contaminated water and the highest percentage 76.84% of accurate illness diagnosis. While just 51.84% of participants had any knowledge about illness therapy. Nearly 90% of the population is aware of how to avoid the cholera epidemic (include improved sanitation and access to clean water), but only 51% of the sample was aware of how to treat it. There was no statistically significant association between demographic variables & the participant's knowledge.

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