Evaluation The Activities of Health Control Staff and Laboratories Staff for The Control of Cholera Epidemic In Al-Hilla City

تقويم فعاليات ملاك الرقابة الصحية وملاك المختبرات للسيطرة على وباء الكوليرا في مدينة الحلة

Haqi I. Mansoor*
Dr. Amean A. Yasir**

الخلاصة:
خلفية البحث: الكوليرا هي واحدة من الأمراض المعوية التي تهدد الحياة يمكن أن تنتشر بسرعة من مكان إلى آخر ،وتسبب وباء ،مما يؤثر على السكان.العامل المسبب لمرض الكوليرا هي جرثومة سلبية الغرام تدعى ضمات الكوليرا. في عام 2015 واجه العراق تفشيا لكوليرا. هناك العديد من الفعاليات التي يقدمها ملاك الرقابة الصحية وملاك المختبرات من أجل السيطرة على وباء الكوليرا والتي شملت الرقابة الصحية وقياس نسبة الكلور في الماء.
الهدف: تهدف الدراسة الى تقويم فعاليات ملاك الرقابة الصحية و المختبرات للسيطرة على وباء الكوليرا في مدينة الحلة، وتحديد العلاقة بين فعاليات الموظفين مع المتغيرات الديموغرافية.
المنهجية: اجريت دراسة وصفية في مراكز الرعاية الصحية الأولية في مدينة الحلة للفترة من الرابع منتشرين الثاني 2015 الى العاشر من اذار 2016 جمعت عينة من 20 مركز للرعاية الصحية الأولية (عينة عشوائية بسيطة). وتم جمع العينة بطريقة المقابلة مع ملاك وحدة الرقابة الصحية ووحدة المختبرات. وجمعت البيانات بواسطة استبانة صممت حسب مقياس ليكارت ذو ثلاث مستويات (دائمًا، احياناً، أبدا) وفقا للخطة الوطنية لمكافحة وباء الكوليرا.حدد ثبات الاستمارة الاستبيانية من خلال أجراء دراسة تجريبية وحددت مصداقيتها من خلال مجموعة مكونة من 14 خبير. تم تحليل البيانات عن طريق الاحصاء الوصفي و الاحصاء التحليلي .
النتائج:نتائج الدراسة أظهرت أن اغلب فعاليات ملاك الرقابة الصحية للسيطرة على وباء الكوليرا فعاليات معتدلة. لا توجد علاقة ذات دلالة إحصائية بين فعاليات ملاك الرقابة الصحية وبياناتهم الديموغرافية عدا مستويات التعليم، وسنوات الخدمة، يوجد بينهم علاقة. فعاليات ملاك المختبرات نحو مكافحة الكوليرا معتدلة. لا توجد علاقة ذات دلالة إحصائية بين فعاليات ملاك المختبرات وبياناتهم الديموغرافية.
الاستنتاج :إن الفعاليات التي يقدمها ملاك الرقابة الصحية والمختبرات كانت معتدلة ويحتاج إلى زيادة التركيز.
التوصيات :اوصت الدراسة بزيادة التركيز على أهمية فعاليات السيطرة على وباء الكوليرا، وخاصة الفعاليات التي تقدم في مراكز الرعاية الصحية الأولية لأنها خط الدفاع الأول والأقرب إلى المجتمع وتوفير المواد لفحص العينات في مراكز الرعاية الصحية الأولية والخروج بنتائج أولية ثم إرسالها إلى المختبر للصحة العامة للتأكيد.
مفردات البحث: فعاليات، الرقابة الصحية، المختبرات، الكوليرا، الوباء.

Abstract:
Background: Cholera is one of intestinal disease conceded life-threatening can spread rapidly from place to another and cause epidemic, affecting the population. The causative agent of cholera is gram-negative bacterium called *Vibrio cholera*. In 2015 Iraq was faced an outbreak of cholera .There are many activities for the control of cholera epidemic that provided by health control staff and laboratories staff which included measuring the ratio of chlorine in the water and the health control.
Objective: To evaluate the activities of health control staff and laboratories staff for the control of cholera epidemic in Al-Hilla city, and determine the relationship between the activities of staff with demographic variables.
Methodology: descriptive study was conducted in primary health care centers of Al-Hilla city, from the period November 4th 2015 to March 10th 2016, the samples (simple random sample) collected from 20 centers for primary health care. The sample were collected through a structured interviewing questionnaire constructed with the staff of health control unit and laboratories through using the Likert scales three-level (always, sometimes, never) according to a national plan to control of cholera epidemic. Reliability of the questionnaire estimated through a pilot study and the validity through (14) experts. The data analyzed by using descriptive and inferential statistical measures.
Result:
The findings of the study show that the majority (93.3%) of the health control staff are moderately active toward control of cholera. No significant relationship between the activities of health control staff and their demographic data at ($P > 0.05$) except with their occupation, levels of education, and years of services, the study results indicate that there is a significant relationship. The activities of laboratory staff toward cholera control is moderate.No significant relationship between the activities of laboratory staff and their demographic data at ($P > 0.05$).

Conclusion: most the staff of the health control units were men and the laboratories of primary health care centers do not investigate any sample, collect the samples and send it to laboratory of public health, This might delay the emergence of the results.
Recommendation: The study recommended increasing the focus on the importance of the activities for control the epidemic of cholera, especially the activities that provided by primary health care centers because it is the first line of defense and the closest to the community and the provision of materials for the investigation of samples in primary health care centers and out the results of the initial then sent it to the laboratory of public health for confirm .and the need to increase female staff work in health control units to deal with women when visiting homes or places for women, such as bathrooms in schools, Institutes and colleges.
Keywords: Activities, health control, laboratories, Cholera, epidemic.

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* Master Student in the Department of Family and Community Health Nursing – Collage of Nursing / University of Babylon.
** Ph.D. Prof. Department of Family and Community Health Nursing / Collage of Nursing / University of Babylon.
E-mail:Haqinurse@yahoo.com

INTRODUCTION

Cholera is an acute intestinal infection caused through the ingestion of bacterium V. cholera present in faecal contamination of food or water. Generally associated lack access to good water and adequate sanitation, its impact can be even more dramatic in areas where essential environmental infrastructures are disrupted or have been destroyed. Countries experiencing difficult emergencies especially risk facing outbreak of cholera. Refugees to overcrowded settings or massive displacement of internally displaced people (IDPs), where water is not potable and bad sanitation , constitutes also a risk factor **(1).**Vibrio cholera consider globally significant pathogen because endemic in lots of countries of the world and annually reported 3 to 5 million cases of cholera **(2)** and estimated that there are 28 000 to 142 000 deaths worldwide **(3).**

The world was exposed to 7th pandemics of cholera. The first pandemic from 1817 to 1824 (Asiatic cholera) began spreading beyond the areas of India where it had long been endemic, especially Bengal and the Ganges river delta to Southeast Asia then China and Japan after that reach to Middle East and Russia. The second pandemic in 1827 to 1835, the wave of cholera move to North American and Europe particularly because of developments in traveling and international industry and increased human's migration through the soldiers **(4).**

The third pandemic from 1839 to 1856 brought the disease for the first time to South America, especially Brazil, and to much of North Africa as far west as Tunis. The fourth pandemic from 1863 to 1875, much of sub-Saharan Africa was ensnared in cholera's worldwide net. During 1881 to 1896 the fifth pandemic and sixth pandemic from 1899 to 1923 were less fatal because of high perception of cholera. Egypt and the Arabian Peninsula, India, Persia, and the Philippines were hit hardest during these epidemics while other areas experienced severe outbreaks, in 1892 Germany and from 1910 to 1911 Naples. Indonesia was original of the final pandemic and emergence of a new strain, called ElTor, which often still persists today in developing nations around the world **(5).**

From 1965 to 1966 the Eltor biotype was transmitted from Asia and Middle East then Iraq and Iran through trading in 7th pandemic **(6).** Cholera consider in Iraq since 1966 when the first cases appeared and increase to 277 cases which include 20 deaths the fatality rate reached to 8.8%. In the last forty years, all epidemic of cholera appears last months the and in the next year occur

the second wave. Data refer to that the seasonality is not available, yet ordinarily cholera started in northern then distributed towards the center and southern region [7]. According to the statistic of Iraqi Ministry of Health, in the last five years, the incidence of cholera was as following in 2010 two cases and not documented any case in 2011. In 2012 the number of casualties 653 cases of cholera. In 2013, one case of cholera and in 2014 not documented any case [8].

Iraq was faced an outbreak of cholera that started in Sept. 2015 along the Euphrates valley of the country. According to a Nov 26 world health organization statement, from mid-September to November 22, nearly 2800 cases of cholera infection were reported in Iraq. Although WHO reported only two cholera-related deaths in the country, the outbreak fuelled concerns across the region with reports of its spread to other countries such as Bahrain and Kuwait. The cholera outbreak has affected seventeen governorates in Iraq of nineteenth governorates, according to world health organization, with most cases reported in Baghdad 940 cases , Babylon 675 cases , Qadisiyyah 442 cases , Muthanna 287 cases, Karbala 157 cases, and Basra 102 cases [9][10]. the presence of cholera in the country was because of the warm of climate in Iraq[11].

OBJECTIVE OF THE STUDY:

1. To evaluate the activities of health control staff and laboratories staff for the control of cholera epidemic in Al-Hilla city.
2. To determine the relationship between the activities of staff with demographic variables.

METHODOLOGY:

Study design:

The descriptive analytical study was conducted on primary health care centers in Al-Hilla City. throughout the period of November 4th 2015 to March 10th 2016 to reach the objective of this study.

Setting of the Study:

The study is carried out at Al-Hilla city in (20) primary health care centers (PHCCs) were selected from (47) PHCCs, These centers were distributed into two health sectors.

The Study Instrument:

The study instrument was rated on Likert Rating Scale (always, sometime, never) for the purpose of the study according to the national annual plan to control of cholera outbreak to measure the underlying concepts in the present study. It is comprised of two forms of questionnaires one directed for health control unit and other directed for laboratories. Reliability of the questionnaire estimated through a pilot study and the validity through (14) experts. Data are collected using interview technique.

The Sample of the Study:

A probability (sample random sampling) the manual selection of (70) participant from health control unit and laboratories units at first and second health sectors of Al-Hillh city.

Data analysis:

Data are analyzed through using the Statistical Package of Social Sciences (SPSS) Version 16 performed through the use of descriptive statistical data analysis approach through statistical descriptive analysis methods (percentages, frequencies, bar graph, mean of score, p-value and Chi square test).

RESULTS:

Table (1) Distribution of the Health control Staff by their Demographic Data

Demographic Data	Rating	Frequency	Percent
Age/Years	20-29	2	6.7
	30-39	10	33.3
	40-49	16	53.3
	50 and more	2	6.7
Gender	Male	25	83.3
	Female	5	16.7
Occupation	Medical assistant	2	6.7
	Nurse	28	93.3
Level of Education	Nursing school graduated	2	6.7
	Technical institute graduated	28	93.3
Experience Years	6-10	13	43.3
	11-15	13	43.3
	16-20	3	10
	21-25	1	3.3
Services Years	6-10	7	23.3
	11-15	14	46.7
	16-20	8	26.7
	21-25	1	3.3
	Total	30	100

Table (1) shows that (53%) of the health control staff are within the fifth age group (40-49) years old, (83.3%) are males, (93.3%) are nurses, (93.3%) are having Technical institute, (83.3%) are having (6-15) years of experience, and (46.7%) are having (11-15) services years.

Table (2): Distribution of Health Control Staff according to their Activities about Control of Cholera

Activates of health control staff									
No.	Items	Never		Sometimes		Always		M .s	Evaluation
		F	%	F	%	F	%		
1	Do educational courses to food handlers from general shops and factory, particularly in high-risk places (restaurants, refreshment , ice factory, soft drinks, dairy …etc)	13	43.3	14	46.7	3	10	1.67	Moderate significant
2	Follow-up and intensify visits to the place of shelter emigrants and other high-risk areas.	3	10	7	23.3	20	66.7	2.57	High significant

3	Be sure the provide the requirements of health and safety of the food.	16	53.3	13	43.3	1	3.3	1.5	Mild significant
4	Be sure to provide drinking water.	2	6.7	0	0	28	93.3	2.87	High significant
5	Be sure to provide health and safety to the environment.	17	56.7	11	36.7	2	6.7	1.5	Mild significant
6	Imposed the health control against the shops selling of the foods and the foods factories which are not approved, within the geographical area of the health center.	12	40	13	43.3	5	16.7	1.77	Moderate significant
7	Imposed the health control on the public restaurants.	12	40	12	40	6	20	1.8	Moderate significant
8	Imposed the health control on the student clubs in colleges and institutes.	23	76.7	7	23.3	0	0	1.23	Mild significant
9	Field visits to schools to ensure the cleanliness of the school shops.	0	0	2	6.7	28	93.3	2.93	High significant
10	Follow-up with sewage and coordinate with other departments.	13	43.3	14	46.7	3	10	1.67	Moderate significant
11	Follow-up with ice factory and the factories of R.O. water supply.	6	20	15	50	9	30	2.1	Moderate significant
12	Monitoring street vendors.	10	33.3	13	43.3	7	23.3	1.9	Moderate significant
13	When the results of the stools are positive for V. cholera, immediately visit the house of the infected person and took water samples to measure the ratio of chlorine to increase the percentage if it is less than the required limit .	2	6.7	28	93.3	0	0	2.93	High significant
14	Daily check the ratio of free chlorine in the three regions (the nearest point to the water project, an intermediate point and distant point).	2	6.7	28	93.3	0	0	2.93	High significant
15	Open a record at the health center to document the chlorine ratios and send it to the sector.	0	0	0	0	30	100	3	High significant
16	Treat the error immediately through the contact with officials within the geographical area of the health center and reinforce later in a formal letter that the ratio of chlorine in the farthest point in the network should be not less than 0.5 ppm	7	23.3	11	36.7	12	40	2.17	Moderate significant

17	The health center take samples of water weekly for the purposes of bacterial examination and send it to the Public Health Laboratory.	2	6.7	4	13.3	24	80	2.73	High significant
18	The Public Health Laboratory to inform the health center when the results emerge.	13	43.3	9	30	8	26.7	1.83	Moderate significant
19	Follow-up to provide the alum material and chlorine to all water projects within the geographical area.	20	66.7	7	23.3	3	10	1.43	Mild significant

Cut off point (0.66): mild significant (1-1.66), moderate significant (1.67-2.34), high significant (more than 2.34), M.s: Mean of scores.

Table (2) based on statistical cut-off point (0.66) the study results indicate that the health control staff activities toward control of cholera distributed differently in term of mild, moderate, and high significant of activities based on the intervals of mean of scores.

Table (3):Distribution of Health Control Staff according to their Overall Activities about Control of Cholera

Overall Domain For health control Staff Activity	Rating	Frequency	Percent	m.s.	Evaluation
	High Active	2	6.7	2.13	Moderate active
	Moderate Active	28	93.3		
	Mild active	0	0		
	Total	30	100		

Table (3) shows that the majority (93.3%) of the health control staff are moderate active toward control of cholera.

Table (4): Relationship between the health control Staff Activities toward Control of Cholera and their Demographic Data

Demographic Data	Rating	Overall Activities		Chi. sq	D.F	P- value
		Moderate Active	High Active			
Age/years	20-29	1	1	5.00	3	0.113
	30-39	1	9			
	40-49	8	8			
	50 and more	1	1			
Gender	Male	23	2	0.429	1	0.513
	Female	5	0			
Occupation	Medical assistant	1	1	6.467	1	0.011
	Nurse	27	1			
Levels of education	Nursing school graduated	1	1	6.467	1	.011
	Technical institute graduated	27	1			
Experience years.	6-10	5	8	2.832	3	0.726
	11-15	3	10			
	16-20	2	1			
	21-25	1	0			
	6-10	2	5	15.938	3	0.014

Services years	11-15	5	9
	16-20	4	4
	21-25	0	1

Chi. sq :Chi square , D.F :Degree of freedom

Table (4) shows that there is a not-significant relationship between the activities of health control staff and their demographic data at p-value more than 0.05. Except with their occupation, levels of education, and years of services, the study results indicate that there is a significant relationship.

Table (5):Distribution of the Laboratory Staff by their Demographic Data

Demographic data Activity of laboratory staff	Rating	Frequency	Percent
Age/year	20-29	7	17.5
	30-39	17	42.5
	40-49	8	20
	50 and more	8	20
Gender	Male	21	52.5
	Female	19	47.5
Level of education	Technical institute graduated	23	57.5
	College graduated	17	42.5
Experience .years	6-10	24	60
	11-15	11	27.5
	16-20	5	12.5
Services years	6-10	21	52.5
	11-15	8	20
	16-20	6	15
	21-25	5	12.5
	Total	40	100

Table (5) shows that (42.5%) of the laboratory staff are within the third age group (30-39) years old, (52.5%) are males, (57.5%) are having technical institute graduated, (60%) are having (6-10) years of experience, and (52.5%) are having (6-10) services years.

Table (6): Distribution of the Laboratory Staff according to their Activities about Control of Cholera

Activity of laboratory test									
No.	Items	Never		Sometimes		Always		M.S	Evaluation
		F	%	F	%	F	%		
1	Open a record in the laboratory to document all the information needed to investigate V. cholera.	6	15	3	7.5	31	77.5	2.62	High significant

2	The samples of stool are taken before giving antibiotics.	25	62.5	9	22.5	6	15	1.52	Mild significant
3	Send the samples to the central laboratory to verify testing.	6	15	0	0	34	85	2.7	High significant
4	When the results of the stools are positive for V. cholera, visit the house of the infected person and his neighborhood for the discovery of other undetected cases.	6	15	2	5	32	80	2.65	High significant
5	When the results of the stools are positive for V. cholera, take samples of stool from all family members who have direct contacts with the infected person.	4	10	2	5	34	85	2.75	High significant
6	When the results of the stools are positive for V. cholera, take samples of stool from all the persons who don't have direct contact with the infected person (people in same area and suffer from diarrhea).	27	67.5	8	20	5	12.5	1.45	Mild significant
7	Follow-up provide the materials for laboratory diagnosis.	14	35	14	35	12	30	1.95	Moderate significant

Cut off point (0.66): mild significant (1-1.66), moderate significant (1.67-2.34), high significant (more than 2.34),F: Frequency,%:percentage, M.s: Mean of scores.

Table (6) based on statistical cut-off point (0.66) the study results indicate that the laboratory staff activities toward control of cholera distributed differently in term of mild, moderate, and high significant of activities based on the intervals of mean of scores.

Table (7): Distribution of the Laboratory Staff according to their Overall Activities about Control of Cholera

	Rating	Frequency	Percent	M .S	Evaluation
Overall domain of laboratory test items	Mild activity	6	15	2.30	Moderate activity
	Moderate activity	16	40		
	High activity	18	45		
	Total	40	100		

Cut off point (0.66): mild significant (1-1.66), moderate significant (1.67-2.34), high significant (more than 2.34) , M.s: Mean of scores.

Table (7) shows that the laboratory staff activities toward cholera control is moderate.

Table (8): Relationship between the Laboratory Staff Activities and their Demographic Data

Demographic data	Rating	Overall activities			Chi.sq	D.F	P-value
		Mild active	Moderate active	High active			
Age / years	20-29	2	4	1	5.00	6	0.532
	30-39	3	6	8			
	40-49	0	3	5			
	50 and more	1	3	4			
Gender	Male	4	10	7	2.462	2	0.292
	Female	2	6	11			

Levels of education	Technical institute graduated	3	8	12	1.125	2	0.57
	College graduated	3	8	6			
Experience years	6-10	4	11	9	2.291	4	0.682
	11-15	2	3	6			
	16-20	0	2	3			
Services years	6-10	3	10	8	4.294	6	0.637
	11-15	2	2	4			
	16-20	1	1	4			
	21-25	0	3	2			

Chi. sq :Chi square , D.F :Degree of freedom

Table (8) shows that there is a not-significant relationship between the activities of laboratory staff and their demographic data at p-value more than 0.05.

DISCUSSION

Part I: the health control

A. Distribution of the health control staff by their demographic data:

The study results showed that the highest percentages of the health control staff (53%) were within (40-49) years old. The result is supported by Hellemans and Closon, (2013), effect health condition, professional competence, and psychosocial work conditions, among two age groups of employees: (40-49) year old employees and employees 50 years of age or older[12].

From researcher's point of view, this category has a professional experience in dealing with the community but prefers the younger age groups.

The study results showed that more than eighty percent of the respondents were males, nurses graduated from the medical technical institute. These finding were supported by (Esmail, et al,. 2016) which showed that more than half of the sample were males and highest percentage (70.37%) of the study sample graduated from the medical technical institute[13].

From researcher's point of view, men staff are important in the health control units because they interaction with the community because of their roles monitor shops and vendors roving , most of the PHCCs have one or two doctors and other staff such as nurses, the need to increase doctors, employ the academic nurses and involved them in health education .The study showed that the majority (83.3%) are having (6-15) years of experience, this result disagree with study conducted by Al-Saidi (2008) which indicated that (22%) of nurses have (6-10) years of experience in a nursing field[14].

The study showed (46.7%) of the sample have (11-15) years of services, this result disagree with the study conducted by Abed (2016) which showed that the majority (38.0%) of nurses have

(1-10) years old of experience in occupation filed. From researcher's point of view, they have a good period of experience and services enable them to work in the health control units.

B. Distribution of health control staff according to their activities about control of cholera:

Through the investigating the activities of the health control in table no.(2), the results of the present study revealed that items number 2,4,9,13,14,15,17 were high satisfied and item number 1,6,7,10,11,12,16,18 were moderately satisfied except with items number 3,5,8,19 were mild satisfied. the distribution overall activities about control of cholera through health control staff in table no.(3), shows that the majority (93.3%) of the health control staff are moderate active toward control of cholera , From researcher's point of view, the reason of this result may be attributed to the following reasons, Lack of emphasis on the following topics educational courses to food handlers from general shops and factory, imposed the health control against the shops selling of the foods and the public restaurants within the geographical area of the health center, follow-up with sewage and coordinate with other departments, Follow-up with ice factory and the factories of R.O. water supply, monitoring street vendors, follow-up the ratio of chlorine in the farthest point in the network should be not less than 0.5 ppm, follow-up the result of water testing from the public health laboratory. In addition to touched for some items was mild signified such be sure provide the requirements of health and safety of the food when asked the staff about this most their answer was the families depend on the ration of food distributed by the government ,also, item be sure to provide health and safety to the environment most staff answered to that the whereabouts of the displaced were in the houses and Husseiniya not camps and good places to some extent, either both items Imposed the health control on the student clubs in colleges and institutes and follow-up to provide the alum material and chlorine to all water projects within the geographical area. mostly answer that tasks of the health sector.

C. Relationship between the activities of health control staff toward control of cholera and their demographic data:

The study results indicated that there was a non-significant relationship between the activities of health control staff and their demographic data, except with subject occupation, levels of education, and years of services was a significant relationship with the activities of health control staff. The researcher's point of view is the work at a health control units need to be occupational experience and the appropriate level of education in order to deal with the community. In explanation of the reason for non-significant relationship between the activities of health control staff and their demographic data that may be more than half of the sample was relatively high age and the gender was a small proportion of female 16.7% and the years of experience were 43.3% in both groups 6-10 and 11-15**.** The study used variables for the first time and there are no studies to support the findings.

Part II: the laboratories:

A. Distribution of the laboratory staff by their demographic data:

The findings of the present study show that the majority of the studied the laboratory staff are in the age group (30-39) years. This result is almost similar to that of Oladele and et al. (2010) in Nigeria whose findings indicate that the majority of the studied subjects were (29-39) years **(15).**

Regarding the gender, the majority of the study sample 52.5% was males. This result is supported by Bwire, and et al (2013) study in Uganda that more half of sample of participants with regard to gender were male **(16).**

Concerning the level of education, the findings of the present study reveal that most of studied subjects (57.5%) were having technical institute graduated.

Regarding to experience the majority of sample (60%) were six to ten years of experience, and regarding to services (52.5%) were six to ten years of services in occupational field. This results agree with the study that conducted by Abed and Kadhim 2013 which show the similar in the categories of the sample 15.8% have (6-10) years of experience in the occupational field and 10% of them have (6-10) years of service in the occupational field [17].

From researcher's point of view, they have a good period of experience and services enable them to work in the laboratories.

B. Distribution of the laboratory staff according to their activities about control of cholera:

The statistical analysis for the present study involved a statistical percentage, frequencies, and the mean of scores that used to divide the activities of the laboratory staff to control of cholera into mild satisfied, moderate satisfied and high satisfied .The activities of the laboratory staff to control of cholera including 7 items. On investigating the activities of laboratories in table no.(6), the results of the present study revealed that items number 1, 3, 4, 5 high satisfied and item number 7 "Follow-up provide the materials for laboratory diagnosis" was moderately satisfied except with items number 2 & 6, they were mild satisfied .the distribution overall activities about control of cholera of the laboratory staff in table no.(7), shows that the majority (93.3%) of the laboratory staff are moderate active toward control of cholera this results. From researcher's point of view, the reason of this result may be attributed to the following reasons, some labs of health centers are followed provide material for lab and connected with health sector and the other depend on the health sector provide material of lab, some lab staff does not adhere to take the samples before giving antibiotics and most lab collecting samples from the infected person and people close to him (His family) but most of the health centers do not take samples from the people far away from the infected person (His neighbors) in the region.

C. Relationship between the laboratory staff activities and their demographic data:

The results show there is a not significant relationship between the activities of laboratory staff and their demographic data. From researcher's point of view, In explanation of the reason for not significant relationship between the activities of the laboratories staff and their demographic data that may be because the activities of the laboratories are fixed in the primary health care centers and registered high significant included open a record in the laboratory to document all the information needed to investigate V. cholera, Send the samples to the central laboratory to verify testing, When the results of the stools are positive for V. cholera, visit the house of the infected person and his neighborhood for the discovery of other undetected cases and When the results of the stools are positive for V. cholera, take samples of stool from all family members who have direct contacts with the infected person. The study used variables for the first time and there are no studies to support the findings.

CONCLUSION

Most of the staff of the health control units were men and the laboratories of primary health care centers do not investigate any sample ,collect the samples and send it to laboratory of public health, This may be delayed the emergence of the results.

RECOMMENDATION:

1. More emphasis should be put on the importance of the activities for control the epidemic of cholera, especially the activities that provided by primary health care centers because it is the first line of defense and the closest to the community.
2. The provision of materials for the investigation of samples in primary health care centers and out the results of the initial then sent it to the laboratory of public health for confirm .
3. The need to increase female staff work in health control units to deal with women when visiting homes or places for women, such as bathrooms in schools, Institutes and colleges.

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