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Rotavirus Infection and Vaccination: Knowledge Among Medical Students /Baghdad 2022

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Dedication

To our

Parents

Colleague

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Abstract

Background; Worldwide, Rotavirus infection affects children under the age of five. It is one of the 13 infectious diarrheal diseases that was reported by the Global Burden of Disease, Vaccination is one of the most cost-effective public health interventions to combat Rota virus. It provides quick and effective protection against preventable morbidity and mortality

Aims; to estimate the knowledge of medical student in Baghdad regarding Rotavirus Infection and Vaccination and to find the association of studied variables with knowledge score

Methods; a descriptive cross-sectional study was conducted among medical student at 6 major medical colleges in Baghdad. An online questionnaire was used in collecting data and it was carried out from 29th November 2022 to 17th of February 2023, on a sample of two hundred participants. Descriptive statistics were presented as frequencies and percentages. Continuous variables were presented as (Means \pm SD). Chi – Square test was used to find out significance of related variables. P – Value < 0.05 was considered as statistically significant.

Results; the results showed that 51% of studied sample had fair knowledge about rotavirus, there was no statistical significant association between studied variable and knowledge score. The most common source of information was internet where it form 51%

Conclusion; this study show fair knowledge among medical student regarding rotavirus infection and vaccination. There was no statistical significant association between studied variable and knowledge score

Chapter one;
Introduction and Literature
Review

Introduction

Diarrhea is one of the major public health problems in developing countries like India. It is the second most common cause of mortality in children under the age of five that claimed the lives of 3, 70,000 children in 2019. [1]

Each year, around 5,25,000 children under the five-years of age suffer from diarrhea. Globally, paediatric diarrheal disease accounts for an incidence of 1.7 billion each year. Diarrhea is one of the biggest risk factors of malnutrition in children under the age of five. [2]

Worldwide, Rotavirus infection affects children under the age of five. It is one of the 13 infectious diarrheal diseases that was reported by the Global Burden of Disease (GBD 2016). Study. The infection may go unnoticed, resulting in self-limiting watery diarrhea or induce an acute gastroenteritis with severe dehydration, vomiting and sometimes fatal fever.[3]

In India, the prevalence of childhood diarrhoea varies between 9 to 20 %. Diarrhoea is also identified as primary cause of death in children under the age of five. Infants between the age of 6 and 24 months are at the highest risk.[4]

Vaccination is one of the most cost-effective public health interventions to combat Rota virus. It provides quick and effective protection against preventable morbidity and mortality. Even after full-fledged implementation of universal immunisation, vaccine preventable diseases (VPDs) still cause more than 5 lakh deaths per year in India. This highlights the necessity for further action. Even though India is one of the world's top producers and exporters of vaccines today, one-third of the world's children live here without receiving any vaccination. [5]

According to WHO: Diarrhea has 3rd highest mortality amongst infectious diseases. Due to limited access to health resources gastroenteritis becomes a fatal disease in infants in Pakistan. Most deaths occur under 5 years. Rotavirus is common in infants and children caused by oral-fecal route and is contagious. Symptoms appear after 2 days and last for a week. According to sentinel sites' incidence due to rotavirus in Pakistan is 24%. According to EPI: it is number one cause of diarrhea and kills around 53,300 children in Pakistan each year [[6], [7], [8], [9], [10], [11]].

Rotarix™ is currently being introduced in Pakistan's Expanded Program on Immunization (EPI). Evidence has proven that it is highly effective and economic in preventing rotavirus gastroenteritis, globally which is the second most common preventable cause of mortality and morbidity among children <5 years in developing countries like Pakistan [12,13].

Rotavirus immunization program has been predicted to prevent 3061 deaths annually in Pakistan at an estimated \$279/DALY averted. It was found to be cost-effective when the result for the base case was compared with Pakistan per capita gross domestic product (GDP) [14,15].

The currently accepted rotaviral vaccines are Rotarix and Rota Teq. Both of the vaccines are oral and live attenuated. Two doses of Rotarix and three doses of Rota Teq are given [16].

Improved knowledge of Rotavirus disease and increased uptake of these efficacious vaccines would result in better treatment and lower mortality in Rotavirus disease. These two vaccines have been shown to be 90 to 100% protective against severe rotavirus disease and 74-85% protective against rotavirus disease of any severity[17]

Vaccination is one of the most powerful preventive health-interventions leading to improvement of survival rates and the reduction of disease burden [18,19,20]

The vaccine causes an increase in the serum anti-Rotavirus immunoglobulin A titer. It is contraindicated in individuals having history of hypersensitivity, intussusceptions or Severe Combined Immunodeficiency Disease (SCID). Rotavirus Efficacy and Safety Trial (REST) evaluated that RotaTeq was able to reduce the severity of the disease by 74%; its efficacy against severe disease was 98%. Prior to vaccine implementation, & >65% children had at least one rotavirus diarrhea by 5 years of age. Arguably, immunizations could be part of all healthcare encounters. Shared responsibility is paramount if deaths are to be reduced [[21], [22], [23], [24]].

Steps should be taken to prevent rotavirus by promoting hygiene and immunization against the virus. Health care workers especially young medical students come in direct contact with infected patients and the community. They should have the knowledge of vaccines that are part of EPI and they should actively participate in promoting the practice of vaccination.

Their infection is systemic which causes malabsorption by changes in the villus epithelium. This malabsorption results in the undigested bolus of biomolecules that reaches the colon. Since the bolus is osmotically active, the colon cannot able to absorb required water and therefore results in diarrhea. [25,26]

RV diarrhea also causes enterocyte destruction and villus ischemia. Immunity develops with each infection, meaning, subsequent infection is less severe. Transmission is achieved through the fecal-oral route, contact with contaminated limbs, surfaces and even objects and also by the respiratory route. [27]

RV can be diagnosed by identifying the virus in patient's stool using enzyme immunoassay, electron microscopy, polyacrylamide gel electrophoresis and reverse transcriptase polymerase chain reaction. [28]

Aims of study

1. To estimate the knowledge of medical student in Baghdad regarding Rotavirus Infection and Vaccination.
2. To find association of studied variables with knowledge score.

Literature review

Rotavirus is a complex virus that belongs to the Reoviridae family. It is composed of a 70-nanometre (nm) viral nucleocapsid that has three concentric shells: an inner core, an internal capsid and an outer capsid within the virus, there are 11 segments of double-stranded RNA that encode a variety of proteins required for the viral lifecycle. Sixty spikes, 10–12 nm in length, protrude from the outer capsid. There are at least seven different antigenic groups (A to G), with Group A being the most common worldwide as a cause of human infections. These two outer capsid proteins are the determinants of the viral serotype classification and elicit neutralizing antibodies believed to be important for protection. There is considerable diversity of circulating strains among the known 15 G and 26 P genotypes, 10 G and 11 P serotypes. Since the two gene segments that encode these proteins can segregate independently, a typing system consisting of both P and G types has been developed. Numbering of G genotypes match G serotypes (e.g., G1, G2, G3, etc.), but the P genotypes do not exactly match the P serotypes. For example, P genotype 8 is equivalent to P serotype 1A [8]. The P genotypes are therefore tentatively designated in brackets RV strains are mostly species-specific Humans are the main reservoir of human RV strains; however, humans can occasionally be infected by rare or novel strains, the main mechanism of transmission is fecal-oral transmission. Since the virus is environmentally hardy, it can also be transmitted through both close person-to-person contact and fomites such as toys and hard surfaces [29]

The virus can survive on hands for at least four hours and remains viable on surfaces or fomites for days [30], [31]

Other recognized transmission modes include fecally contaminated food and water, and respiratory droplets [32]

Transmission is facilitated by a very small infectious dose of <100 viral particles [33]

high viral concentration within the stool (10¹² particles per gram of stool in infected children) and prolonged shedding of virus. Shedding can begin a few days prior to the onset of symptoms and can continue until 21 days after the onset of illness.

Asymptomatic shedding has also been described [31]

Both asymptomatic and symptomatic health care workers have been linked to the spread of the virus in some outbreaks. Since the virus can survive for long periods on hands, hand washing is an important preventive measure. Increased hand washing by hospital staff resulted in decreased nosocomial RV infections. Following ingestion and passage through the stomach, viable virions attach to the epithelial surface of the small intestine; they enter the mature enterocytes near the tips of the villi and begin replication [29]

Once more copies of the virus are made and appropriately assembled, they bud and are released to infect new enterocytes. The enterocytes, particularly at the tips of the villi where absorption occurs, are damaged and sloughed. This leads to inadequate adsorption and impaired digestion. In the epithelial cells, the virus produces the potent enterotoxin non-structural protein 4 (NSP4). In mice, this enterotoxin causes diarrhea due to release of calcium from the endoplasmic reticulum and resultant villous cell secretion [33]

Infection with RV leads to an imbalance in the function of the villi, associated with increased secretion with a relative impairment in adsorption and digestion. Limited human biopsy information and animal studies of proximal small intestine show shortening of the villi, mononuclear cell infiltration in the lamina propria, mitochondrial swelling, and sparse irregular microvilli with impaired D-xylose absorption, and sometimes depressed disaccharides' (maltase, sucrase, lactase) [34],[35],[36]

Stimulation of the enteric nervous system by NSP4 and villous ischemia may also be responsible for diarrhea [30],[32],[29]

The mechanism that causes vomiting, which characterizes the early illness, is poorly understood. It may be the result of early cytokine release acting centrally, or delayed gastric emptying [37]

The relative importance of viremia and extra intestinal replication is not clear [38],[39],[40]

Acute RV gastroenteritis in children is commonly associated with antigenemia and viremia (e.g., antigen detected in 43%–64% by enzyme immunoassay (EIA) and confirmed by reverse transcription PCR in 67%–93% of children). Antigenemia is

most common on the first day of illness. It peaks between day one and three days after symptom onset, with a minority being positive at one week. Persistent antigenemia (up to 11 weeks) has been seen in immunocompromised children [41]

Primary infections are associated with higher viral loads [31],[38]

Antigenemia was associated with G1 strains and lower levels of serum IgG[36]

Quantitative studies showed RV titers in the blood are substantially lower than in the stool, suggesting viremia is usually benign and silent with little risk of extraintestinal disease. It may be that RV is passively present in the blood as a result of transepithelial transport [42]

Severity, as measured by diarrhea and dehydration, has not been linked to viremia[43]

Although long thought to be confined to the small intestine, RV has now been identified in other sites [44]

RV antigen and/or RNA has been found in the cerebrospinal fluid of children with seizures, as well as in the livers and kidneys of immunocompromised children [45],[46]

RV RNA has been detected in the spleen, heart, lungs, kidney, bladder and pancreas of children who experience RV deaths. [47]

There is no proof of extra intestinal RV replication in immunocompetent children, and it has been shown only rarely in Immunodeficient children [48]

,but it is considered plausible [49],

Extra-intestinal replication does occur in animals, including: mesenteric lymph nodes, liver and lungs of mice [50]

RV infections can occur with a variety of presentations including asymptomatic infection, mild disease to severe infection leading to severe dehydration and death.

After an incubation period of 18 to 36 hours, there is typically an acute onset of fever (53%–89%) and vomiting (89%–97%) [51], [52]

This is usually followed by diarrhea, which typically lasts for five to seven days. There are often fewer than 10 non-bloody, but mucus bowel movements per day [53]

There are few distinguishing singular features among those who have RV gastroenteritis versus those with other causes of gastroenteritis [54]

The presence of all three symptoms (fever, vomiting and diarrhea) is reported more commonly with RV than with other gastrointestinal viruses (61.8% versus 38.7%) [55]

In the first three months of life (in a term infant), illness is generally mild as a result of passive transplacental transfer of RV antibody. Between 3 months and 5 years of age, there is a spectrum of disease, although disease is often most severe in children aged 3 months to 24 months. The duration of illness was less than a week in 80% of RV cases, with a mean of 5.8 to 6.1 days [56]

Of hospitalized children, <1% had persistence of fever, vomiting or diarrhea for more than two weeks [57]

At one-month follow-up, 88% of children had returned to their usual health status and the remainder had almost regained any weight lost [58]

Children can be sequentially infected, although subsequent courses of RV gastroenteritis are typically milder than initial infections.

While extra intestinal disease has been reported and is biologically plausible, this is not the predominant clinical manifestation of RV. All children have been infected with RV by 5 years of age [59]

In the U.S., RV is responsible for 5% to 10% of all gastroenteritis episodes among children aged under 5 years old. In Toronto, RV caused 18% and 20% of laboratory-tested gastroenteritis cases in day care centres and pediatric practices. In a 2005 study, RV caused 55% of laboratory-tested gastroenteritis cases that were seen in physician office and pediatric clinics across Canada [60]

In Toronto [61] and Quebec [62], 37% (0–18 years old) and 72% (0–5 years old), respectively, of childhood gastroenteritis hospitalizations were due to RV. This compares with 39% of childhood gastroenteritis hospitalizations generally reported worldwide [63].

In a comprehensive review of diarrhea-associated hospitalizations in Quebec in the 13-year period between 1985 and 1998, there were 63,827 hospitalizations of children under the age of 5 years.

The number of cases attributable to RV in Quebec is estimated to be 1,506 per year using the method of Jin [62] and 1,817 per year using the 37% RV causality rate in the Toronto area study [61]

Adenovirus, Torovirus, norovirus, astrovirus and calicivirus also cause hospitalized gastroenteritis cases, though far less commonly. In pediatric practices and day care settings, where there is both RV-associated diarrhea and diarrhea due to more benign agents, the proportion due to RV is generally lower [36],[58]

Over three-quarters of all children hospitalized for diarrhea were between 6 months and 35 months of age.

In all settings, the proportion of children with RV was highest in the youngest age groups: 6 to 11 months and 12 to 23 months of age [63]

This is also true of the age distribution found by both IMPACT in 1997 and 1998, and the Measuring the Impact of Rotavirus Acute Gastroenteritis (MIRAGE) study in 2005.

In the survey of children in day care centers, the incidence of RV-associated diarrhea in children under 24 months of age was 1.1 episodes per 100 child-months. This can be compared to children 24 months' to 35 months of age, with an incidence of 0.23 episodes per 100 child-months, and those 36 months and older with an incidence of 0 per 100 child-months [64]

In a Canadian study, significantly more male than female children presented with diarrhea (57% versus 43%), although the proportion that was RV positive was similar [65]

This is also consistent with findings by IMPACT, where 60% of RV cases presenting to ER or hospital were male (personal communication, Lisa Landry, IMPACT/PHAC database), and MIRAGE, where 59% of the RV positive cases were male.

In a U.S. study, male children were identified as having a greater risk of RV diarrhea compared with females [66]

In a Toronto study, the rates of diarrhea in contacts of young RV cases were: 65% to 74% in contacts under 3 years of age, 38% to 43% in contacts aged 3 to 18 years and 29% to 35% in adult contacts [63],[64]

Others have reported lower rates of infection in household contacts of about 50% of exposed children and 15% to 30% of exposed adults, with some children and most adults being asymptomatic. A cross-Canada study in 2005 demonstrated that 47% of RV cases had at least one other family member experiencing gastroenteritis within two weeks before or after symptom onset. There was an average of one other case per family. Among these household contacts experiencing diarrhea, 11% were under 2 years of age, 27% were 2 to 5 years of age, 5% were 6 to 17 years of age and 57% were adults. In a prospective Canadian family study in the late 1970s, Wenman showed that infection occurred significantly more often in adults caring for RV-infected children than among adults whose children had no documented RV infection (35% versus 5%). The presence of another child in the house less than 24 months of age has recently been identified as a risk factor for RV hospitalization in a U.S. study (odds ratio (OR) 1.6, 95% CI: 1.1–2.3). It has also been identified as a risk factor for development of RV diarrhea. It is important to note that neither study assessed household crowding.

Review of Iraqi Studies;

Several researchers recorded different infection rates with Rota viruses among Iraqi governorates such as Al-Zuheiry et al., (2010) who showed that the overall infection rate by rotavirus among 500 patients was 20.3%, and the highest infection rate was among those below 5 years in Baqubah Diyala province [67]

Hasan (2013) who reported that females had an insignificantly higher infection rate compared to males (22.1% vs. 18.9%) among patients with diarrhea using BioRad-Rota kit in Baqubah - Diyala province [68]

Hussein et al., (2018) who identify 20% (30 out of 160) from children with gastroenteritis admitted to Al-Batool Teaching Hospital for Maternity and Children in Baqubah city using Cer Test one step [69]

Three studies conducted in Baghdad such as study of Abdul Sattar (2012) who reported 11 cases (18.03%) had positive Rotavirus infection among 61 children admitted to Children Welfare Teaching Hospital [70]

Musa et al., (2019) who found 21.4% (21 out of 98) among children with acute gastroenteritis in two hospitals which are Children's Protection Teaching Hospital and Al-Alawiya Children's Hospital from October, 2018 till end of January, 2019 using multiplex RT-PCR [71]

Recently Abdulridha (2019) who reported 30.3% among all collected samples [72].

Muneam (2020) found 32% in Ramadi [73]. And Abd-Al Fattah et al., (2020) who reported 32.6% of rotavirus group A among 150 children with diarrhea admitted to Maternity and Children Hospital Ramadi city at Al-Anbar governorate using rapid test [74]

Abood et al., (2013) who found that 42.45% were positive for rotavirus among 384 infants with gastroenteritis were admitted to Maternity and Child Teaching Hospital in three governorates (Addiwaiya, Najaf and Babylon) and two hundred fourteen infants from the attendants of outpatient departments of the hospitals, some primary health care centers and some private clinics using latex agglutination test from June 2010 to April 2012 [75]

Al-Khafaji and Hawraa (2013) who found that 45.76 % (112 out of 236) samples fecal samples from outpatients and hospitalization children with acute gastroenteritis in Babylon governorate using latex agglutination test and ELISA for rotavirus antigen detection [76]

and Mutlak et al., (2018) who reported 48% in Babylon City [77]

Several Iraqi studies conducted in North of Iraq, such as Jaff et al., (2016) who detected 22% (22 out of 100) children with gastroenteritis under 5 years old attended Sulaimani Pediatric Hospital using VIKIA test [78]

Salih (2009) the incidence of RV infection in was 28.7% among 150 children hospitalized with acute diarrhea referred to Ibn-Al-Atheer pediatric Hospital in Mosul city using Latex agglutination test [79]

Zaman et al., (2012) reported 33.3% Rotavirus using immunochromatographic in Kirkuk city-Iraq [80]

and Herish et al., (2006) who reported 37% of rotavirus gastroenteritis were found in different study in Iraqi Kurdistan [81]

Chapter Two; Methodology

Methodolgy

Study design: descriptive cross-section design

Setting and duration of data collection: the study was conducted at Al-kindy College of Medicine from 29th November 2022 to 17th of February 2023

Medical students from various universities in Baghdad, including:

University of Baghdad/College of Medicine

University of Baghdad/Al-kindy College of Medicine

University of Al-Mustansiriyah/College of Medicine

University of Al-Nahrain/College of Medicine

Al-Iraqia University/College of Medicine

University of Ibn-Sina for Medical and Pharmaceutical Sciences/College of Medicine

A convenient sample of 200 students participating in the current study

Pilot study: A pilot study was conducted first among 20 students. It was conducted for the following purposes:

- a.To assess the compliance and response of students.
- b. Find out any difficulty of any unclear question.
- c. Find out if there are other questions or aspects that may affect students and that are not included in the questionnaire form.

After pilot study, no major changes were made on study tool.

Method of data collection: An online questionnaire by Google forms was used to collect the data. A questionnaire was adopted from previous studies measuring the same studied variables, the questionnaire was revised by the

supervisor and panel of experts in Al-Kindy College of Medicine and their modification and advice regarding the proposed questionnaire was taken into consideration.

Ethical and official approval

The conduct of study was approved by the

1. Ethical and Scientific Committee at Al Kindy College of Medicine/ Family and Community Medicine department.
2. Permission of all students who participated in the study was obtained during the data collection
3. All participants were informed that their responses would remain Confidential

Statistical Analysis

Collected data were reviewed and entered into Microsoft Excel Sheet 2010 and loaded into the SPSS software version for statistical analysis.

Descriptive statistics were presented as frequencies and percentages.

Chi square test was used in inferential statistics to find out significance of related variables. P value < 0.05 was considered as the discrimination point of significance

Scoring

The Knowledge score was calculated by dividing the total number of correct answers in each Knowledge item by the total number of questions in that item and the results multiplied by 100%.

For example;

Knowledge score = Number of knowledge questions answered correctly/total number of knowledge question *100% [82]

A score of <50 was considered 'poor'

and a score of 50-75 is fair

While score of > 75 is good

Chapter Three

Results

Results

This study enrolled a total of 200 medical students, their distribution according to socio-demographic variables was illustrated by table (1).

Regarding gender, the majority of the participants (62.8%) were females

The majority of participants were less than 20 years old (72.4%), and 36.6% of

Table (1): Distribution of the sample according to the demographic characteristics, No. =200

Variables		No.	Percent (%)
Gender	Female	127	63.5
	Male	73	36.5
Age	<20	146	73
	>20	54	27
College	Al-Iraqia University/College of Medicine	18	9
	University of Al-Mustansiriyah/College of Medicine	15	7.5
	University of Al-Nahrain/College of Medicine	47	23.5
	University of Baghdad/Al-kindy College of Medicine	71	35.5
	University of Baghdad/College of Medicine	49	24.5

Figure 1 shows that 69.2% of studied sample were in preclinical stage.

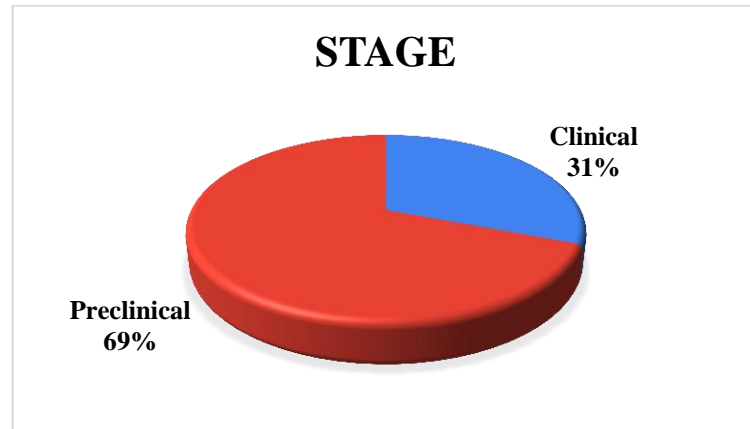


Figure (1): Distribution of the sample according to their academic stage

Table 2 shows that most of students answer were uncertain regarding rotavirus infection and vaccination

Table (2): Distribution of the sample according to their knowledge about rotavirus, No. =200

Knowledge questions	True No. (%)	False No. (%)	Uncertain No. (%)
Do you know what rotavirus is?	7(3.5)	56 (29)	137 (71)
Knowledge that vaccination against rotavirus is a preventive measure	6 (3)	48 (24.7)	146(75.3)
Knowledge that the rotavirus vaccine is available in Iraq	9 (4.5)	69 (36.1)	122 (63.9)
Modes of transmission of rotavirus	11 (5.5)	50 (26.5)	139 (73.5)
What is the symptoms (multiple answers more than one)	12 (6)	47 (25)	141 (75)
Know the complications of the disease.	11 (5.5)	45 (23.8)	144 (76.2)
How is vaccine given?	10 (5)	81(42.6)	109 (57.4)
Know the appropriate age of vaccination	10 (5)	102 (53.7)	88 (46.3)
Know the contraindication to vaccine	9 (4.5)	88 (46.1)	103 (53.9)
Do you know that Rota virus vaccine cause Side Effects?	12 (6)	74(39.4)	112(59.6)
Is Rota vaccine included in expanded program of immunization?	13 (6.5)	37(19.8)	150 (80.2)
Did you know that Rota virus is a risk factor for health problem?	8(4)	45(23.4)	147(76.6)
Agree that medical staff as have a vital role to play in advising patients to get the vaccine	8(4)	18(9.4)	174(90.6)

Figure (2); shows the distribution of the studied sample regarding knowledge score where 37% of medical students had good knowledge about rotavirus. 51% had fair knowledge, and 12% of them had poor knowledge.

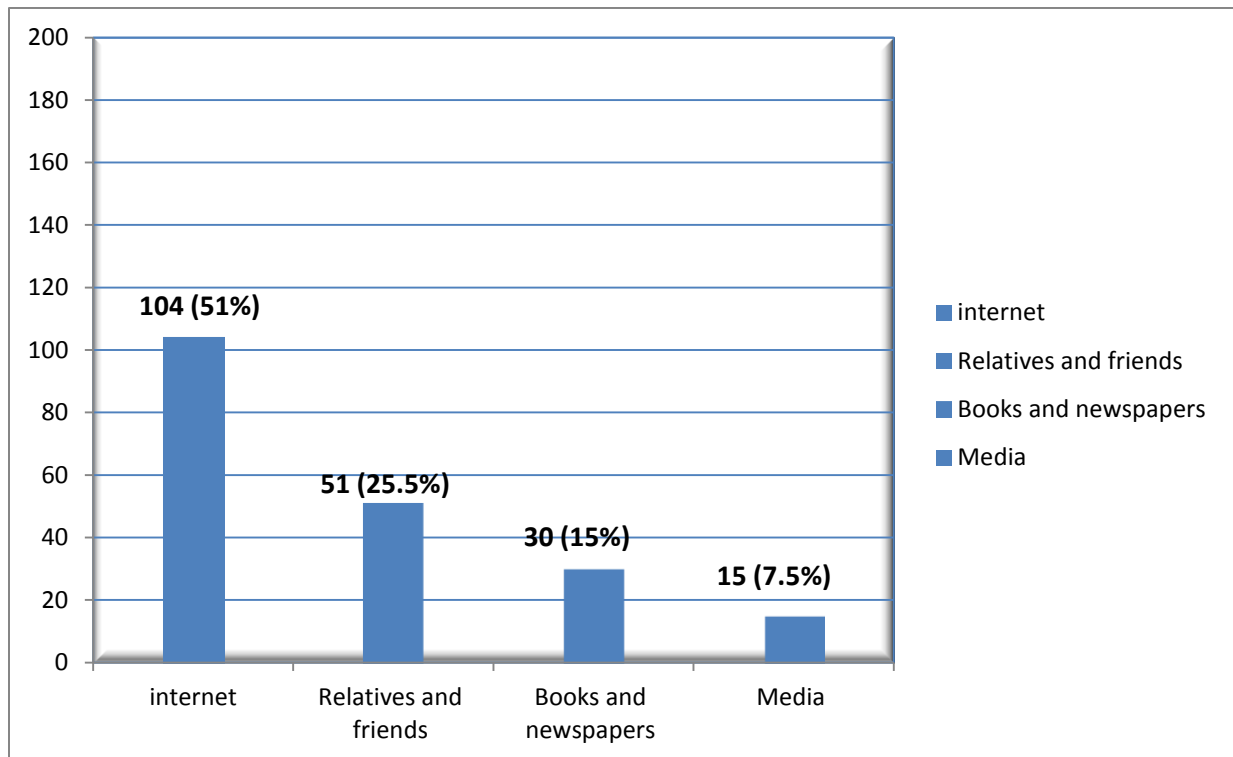


Table 3 shows no statistical significant association between studied variables and knowledge score.

Table (3): The association between socio-demographics & knowledge of participants

Socio-demographics		Poor	Fair	Good	P-value
Gender	Female	13(10%)	65(51%)	49(39%)	0.566
	Male	11(15%)	37(50%)	25(35%)	
Ages	<20	16(11%)	74 (51%)	56(38%)	0.681
	≥20	8(15%)	28(52%)	18(33%)	
University	Al-Iraqia University/College of Medicine	1(5%)	9(50%)	8(45%)	0.158
	University of Al-Mustansiriyah/College of Medicine	3(20%)	5(33%)	7(47%)	
	University of Al-Nahrain/College of Medicine	4(9%)	27(57%)	16(35%)	
	University of Baghdad/Al-kindy College of Medicine	5(7%)	36(51%)	30(42%)	
	University of Baghdad/College of Medicine	11(22%)	25(51%)	13(27%)	
Stages	Preclinical	15(11%)	65(48%)	55(41%)	0.799
	Clinical	9(14%)	37(57%)	19(29%)	

Figure 3: Shows that 51% of the studied sample got their information from Internet, while the source of information of 25.5% was from relatives and friends, 15% and 7.5% were Books and newspapers, media



Chapter Four

Discussion

Discussion

Health care workers especially young medical students come in direct contact with infected patients and the community. They should have the knowledge of vaccines that are part of EPI and they should actively participate in promoting the practice of vaccination and in the previous study.

Knowledge score about rotavirus was fair comparing to other studies in Karachi knowledge was good [83], in Kuala Lumpur most of student categorized as high

Knowledge score [84]

In this study there is no significant association between the demographics data and knowledge score. Regarding gender, there is no association, in a study in PAKISTAN in 2021 were the knowledge regarding rotavirus and its vaccination found that females were high mean score of knowledge, [82]

Other study results found also that females have more knowledge, mean score compared to males [83].

In other study in Malaysia in 2017 found males showed higher percentage of knowledge compared to female [85]

Regarding age, also there is no significant association according age , In research conducted in Malaysia where the students with an age >21 years (clinical stages) have a good knowledge regarding rotavirus [84]

Different studies were conducted which found that students' knowledge regarding rotavirus and its vaccination has increased as year of education increased [86], [87]

A study conducted in Canada showed that when a vaccination program was implemented medical students had a more positive attitude toward the vaccine [88].

Regarding to source of information, most of students know rotavirus from internet. This contrary to a study was done in Baghdad in 2015 were the highest knowledge was from health personnel followed by TV [32]

Chapter Five; Conclusions and Recommendations

Conclusion

1. The study results indicate that knowledge about rotavirus and vaccine is fair
2. No statistical significant association between knowledge score and studied variables.
3. Most common source of information was internet.

Recommendations:

1. Implementing educational programs in terms of educational sessions, media presentation and others, in order to increase knowledge.
2. Further studies should include a larger sample on this topic in other medical schools in all governorates in Iraq are necessary.
3. Integrity clinical stage with preclinical .
4. Early stage Community Engagement

CHAPTER SIX ;Appendices

السلام عليكم ...

أعزائي الطلبة الكرام ... فيما يلي استبيان لغرض إجراء بحث علمي حول موضوع معارف الطلبة في كليات الطب عن الإصابة واللقاح للفيروس العجيلي. علماً أن هذه الاستمارة لا تحتوي على اسم المشارك وسرية الإجابات سوف تحفظ ، وسوف تستخدم لغرض البحث فقط .

Questionnaire ;

Demographic data

Age

Gender

Stage

College

Knowledge questions

- 1- Do you know what rotavirus is?
- 2- Knowledge that the vaccination against rotavirus is a preventive measure
- 3- Knowledge that the rotavirus vaccine is available in Iraq
- 4- Modes of transmission of rotavirus
- 5- What is the symptoms (multiple answers more than one)
- 6- Know the complications of the disease.
- 7- How is vaccine given?
- 8- Know the appropriate age of vaccination
- 9- Know the contraindication to vaccine
- 10- Do you know that Rota virus vaccine cause Side Effects?
- 11- Is Rota vaccine included in expanded program of immunization?
- 12- Did you know that Rota virus is a risk factor for health problem?
- 13- Agree that medical staff as have a vital role to play in advising patients to get the vaccine

Source of information :

1. Internet
2. Relatives and friends
3. Books and newspapers
4. Media

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الخلاصة

خلفية الموضوع : في جميع أنحاء العالم ، تصيب عدوى الفيروس العجيلية الأطفال دون سن الخامسة. إنه أحد أمراض الإسهال المعدية الـ ١٣ التي تم الإبلاغ عنها من قبل العبء العالمي للمرض ، يعد التطعيم أحد أكثر تدخلات الصحة العامة فعالية من حيث التكلفة لمكافحة الفيروس العجلي . يوفر حماية سريعة وفعالة ضد الأمراض والوفيات التي يمكن الوقاية منها

الاهداف: لتقييم مدى معرفة طلاب الطب في بغداد فيما يتعلق بعدوى الفيروس العجلي و التطعيم و لايجاد ارتباط بين العوامل الاجتماعية و مستوى المعرفة .

طريقة البحث : أجريت دراسة وصفية مقطعية بين طلاب الطب في ٦ كليات طبية في بغداد. تم استخدام استبيان عبر الإنترنت في جمع البيانات وتم تنفيذه في الفترة من ٢٩ \ ١١ \ ٢٠٢٢ إلى ١٧ \ ٢ \ ٢٠٢٣ ، على عينة من مائتي مشارك. تم عرضها على شكل نسب مئوية و تكرارات .تم استخدام كاي تربيع لمعرفة اهمية المتغيرات ذات الصلة .القيمة الاحصائية $p < 0.05$, اعتبر ذات دلالة احصائية

النتائج : أظهرت النتائج أن ٥١٪ من العينة المدروسة لديهم معرفة معتدلة بالفيروس العجلي ، ولا توجد علاقة ذات دلالة إحصائية بين المتغير المدروس ودرجة المعرفة. كان الإنترنت هو المصدر الأكثر شيوعًا للمعلومات حيث يشكل ٥١٪ .

الاستنتاج : تظهر هذه الدراسة معرفة معتدلة بين طلاب الطب فيما يتعلق بعدوى الفيروس العجلي والتطعيم. لا توجد علاقة ذات دلالة إحصائية بين المتغير المدروس ودرجة المعرفة .



وزارة التعليم العالي و البحث العلمي

جامعة بغداد

كلية طب الكندي

معارف الطلبة في كليات الطب عن الاصابة واللقاح

للفيروس العجولي \ بغداد ٢٠٢٢

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