

## Assessment of Science Teachers' Awareness towards Immunity and Immunization in Primary School at Baghdad City

تقييم وعي مدرسي العلوم تجاه المناعة والتحصين في مدارس مدينة بغداد الابتدائية

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### الخلاصة:

**الهدف:** تقييم وعي مدرسي العلوم تجاه المناعة والتحصين في مدارس مدينة بغداد الابتدائية.  
**المنهجية:** أجريت دراسة وصفية شملت (100) مدرسة ابتدائية، (50) في قطاع الرصافة ، و (50) في قطاع الكرخ للفترة من 15 آذار 2012 إلى 15 آذار 2013 لغرض تقييم وعي مدرسي العلوم تجاه المناعة والتحصين. وتم اختيار عينة متعددة من (100) مدرس لمادة العلوم (ذكور وإناث) وبواقع مدرس من كل مدرسة. أستعملت استبانة لجمع المعلومات وتم تحديد مصداقيتها من خلال عرضها على مجموعة من الخبراء في مجال الاختصاص ، أما ثباتها فقد تم تحديده من خلال دراسة استطلاعية أجريت في (20) مدرسة ابتدائية من غير المذكورة أعلاه وشملت (20) مدرساً للفترة من 8/نيسان/2012 إلى 14/نيسان/2012. وتم تحليل بيانات الدراسة من خلال استعمال الإحصاء الوصفي والاستدلالي.  
**النتائج:** أظهرت نتائج الدراسة الى أن ( 78% ) من العينة هم من المدرسين الأناث، وأن (39%) منهم تتراوح أعمارهم ما بين (40-49) سنة وأن (65%) هم من المتزوجين ، وأن (50%) منهم هم من خريجي معاهد المعلمين. كما بينت الدراسة أن (26%) منهم ممن لديه سنوات خدمة في مجال التعليم تتراوح بين (15-19) سنة . وأن (58%) منهم لم تتح له الفرصة للأشتراك في دورات تخصص المناعة والتحصين. وأشارت نتائج الدراسة إلى ان وعي مدرسي العلوم كان غير كافياً حول المناعة والتحصين ضد الأمراض الانتقالية في مدارس مدينة بغداد الابتدائية.  
**الاستنتاج:** إستنتجت الدراسة بأن وعي مدرسي العلوم في المدارس الابتدائية لمدينة بغداد كان غير كافياً حول المناعة والتحصين ضد الأمراض الانتقالية.

**التوصيات:** أوصت الدراسة الى ضرورة التعاون بين وزارة الصحة ووزارة التربية والتعليم على تأليف كتاب منهجي للمدارس الابتدائية عن طبيعة الأمراض الانتقالية وكيفية السيطرة عليها ، والتركيز على أهمية الدورات مستمرة للمدرسين في جميع المدارس الابتدائية.

### Abstract:

**Objectives:** To assess of Science Teachers' Awareness towards immunity and immunization in Baghdad City Primary Schools

**Methodology:** A descriptive study was conducted, included (100) primary school,(50) in Al Rassafa sector, and (50) in Al Karkh sector, from March 5th 2012 to March 15th 2013, to assess of science teachers' awareness towards immunity and immunization. A cluster sample of (100) Science teachers (males and females) were selected, as one teacher from each school. A questioner format was used for data collection. The validity of questioner was estimated through a penal of experts related to the field of study, and its reliability was estimated through a pilot study conducted in (20) schools is excluded from the original sample which included (20) teachers from April 8<sup>th</sup> 2012 to April 14<sup>th</sup> 2012. Data were analyzed through the application of descriptive and inferential statistical analysis.

**Results:** The results of the study indicated that (78%) of sample were female, and (39%) of them their ages were between (30-39) years old, (65%) of them were married, while (21%) of them were single, and (50%) of them were institute graduates. Also the study indicated that (26%) of teachers had (15–19) years of employment in teaching sector. Furthermore, (58 %) of sample had no opportunity to be involved in training courses concerning communicable diseases control. The results of this study indicate that, teachers' awareness was poor (in adequate awareness) towards immunity and immunization against communicable diseases in Baghdad City Primary Schools

**Conclusion:** The study concluded that teachers' awareness towards immunity and immunization in Baghdad primary schools was poor.

**Recommendations:** The study recommends that there is a need for cooperation between the Ministry of Health and the Ministry of Education on writing a book systematically for primary schools about the nature of the transitional diseases and how to control them through immunity and immunization, and Emphasis on continuous sessions concerning communicable diseases control for teachers in all primary schools

**Keyword:** Assessment, Awareness, Communicable diseases, Immunity, Immunization.

## **INTRODUCTION:**

Communicable Diseases are illnesses caused by infection (invasion of the body) with specific germs such as viruses, bacteria, fungi, and parasites are called infectious diseases. Communicable diseases are those illnesses that can be spread from one person to another either directly or indirectly. Infectious diseases that commonly occur among children are often communicable and may spread very easily from person to person<sup>(1)</sup>.

Immunity is a state in which the body is protected from infectious disease. It is conferred by the immune system, a complex network of cells, tissues and chemicals that fight infection and kill organisms when they invade the body. There are three categories of immune protection, all of which help protect the body from infectious diseases. It can be innate or acquired, active or passive, and natural or artificial. These categories can mix and match to produce, for example, natural passive or artificial passive immune protection<sup>(2)</sup>.

Vaccines have greatly improved the health of children in the World by eliminating or significantly reducing the incidence of many childhood diseases and decreasing rates of child mortality<sup>(3)</sup>.

Vaccines are not only beneficial to the individual children who receive them and to the health care system that needs to otherwise pay for the treatment of disease. Vaccines are also instrumental in building "herd immunity" to disease within a population. Herd immunity is the resistance of a group of people to attack by an infectious disease when a large enough proportion of the population is immune to that disease so that even people who are not immune are protected against illness because their chances of being exposed to the disease are sufficiently reduced<sup>(4)</sup>.

Teachers should be aware of infectious diseases that affect students and be familiar with how to minimize their spread, the designated staff member who handles illness issues should consult with the school nurse regularly. Most cases of illness are isolated to one student, but occasionally an outbreak of a particular disease can occur in a school. Suspected outbreaks should be reported to the state or local public health agency immediately<sup>(5)</sup>.

### **Objectives:**

The study aims to assess science teacher's awareness needs communicable diseases control.

## **METHODOLOGY:**

The study is conducted at (6) education directorates in Baghdad City, (3) in Al Rassafa sector, and (3) in Al Karkh sector. The study included one hundred primary schools, (50) in Al Rassafa sector, and (50) in Al Karkh sector, from March 5th 2012 to March 15th 2013, to assess of science teachers' awareness towards immunity and immunization. A cluster sample of (100) Science teachers (males and females) were selected, as one teacher from each school. A questionnaire format was used for data collection. The validity of questionnaire was estimated through a panel of experts related to the field of study, and its reliability was estimated through a pilot study conducted in (20) schools is excluded from the original sample which included (20) teachers from April 8<sup>th</sup> 2012 to April 14<sup>th</sup> 2012.

A questionnaire format was used for data collection which consisted of (2) major parts; the first part is concerned with teachers' socio-demographic characteristics of sex, age, gender, marital status, level of education, years of experience in teaching, and participation in training courses. The second part is concerned with teachers' awareness towards immunity and immunization which consisted of (25) items.

The content validity is estimated through a panel study of experts. The reliability of study instrument was determined by using test – retest technique. The alpha correlation coefficient ( $r$ ) was = 0.92 for teachers' awareness<sup>(6)</sup>.

Analysis of data was performed through the application of descriptive statistics (frequency, percentage) and inferential statistics (mean of scores, relative sufficiency, Pearson correlation coefficient, t-test and one way analysis of variance and chi- square test). The items of science teachers' awareness were rated on three level likert scales; know, uncertain, and do not know, and scored as 3, 2 and 1, respectively<sup>(7)</sup>. The researcher interviewed all teachers, and each one was given a time period between (25–30) minutes to answer the questions.

## RESULTS:

**Table (1): Distribution of Teachers by Their Demographic Characteristics (N= 100)**

List	Variables	Frequency	Percent	Cum. Percent
1	<b>Gender</b>			
	Male	22	22.0	22.0
	Female	78	78.0	100.0%
2	<b>Age (year)</b>			
	20-29	17	17.0	17.0
	30-39	31	31.0	38.0
	40-49	39	39.0	87.0
	50- and more	13	13.0	100.0%
3	<b>Marital status</b>			
	Single	21	21.0	21.0
	Married	65	65.0	86.0
	Divorced	5	5.0	91.0
	Widowed	9	9.0	100.0%
4	<b>Level of education</b>			
	Secondary graduate	31	31.0	31.0
	Institute graduate	50	50.0	81.0
	College graduate	15	15.0	86.0
	Course after secondary school	4	4.0	100.0%
5	<b>Sector</b>			
	Al-Karkh Sector	50	50.0	50.0
	Al – Rusafa Sector	50	50.0	100.0%
6	<b>Years of employee</b>			
	1-5	16	16.0	16.0
	6-10	24	24.0	30.0
	11-15	19	19.0	49.0
	16-20	15	15.0	64.0
	21 – and more	26	26.0	100.0%
	<b>Total</b>	<b>100</b>	<b>100.0%</b>	<b>100.0%</b>
7	<b>Training courses</b>			
	None	58	58.0	58.0
	One	29	29.0	87.0

List	Variables	Frequency	Percent	Cum. Percent
	Two	7	7.0	94.0
	Three – and more	6	6.0	100.0%

Table (1) shows that (78%) of teachers were females. Concerning their ages (39%) of them (40–49) years old. Regarding the marital status, the majority of teachers (65%) were married. Concerning educational level, half of the teachers (50%) were Institute graduate. (26%) of teachers had (21–and more) years of employment in teaching sector. Furthermore, (58 %) had no opportunity to be involved in training courses concerning communicable diseases control.

**Table (2): Mean of scores and relative sufficiency for teacher's awareness towards immunity and immunization**

Items	Mean	RS %	grade	
1	Immunity is a person's ability to resist disease when exposed to pathogens	1.67	55.81	L.S
2	I think that there are two types of immunity: passive immunity and positive immunity	2.26	75.33	M.S
3	Passive or negative immunity is to protect the body, temporarily or for a short period by moving natural antibodies	2.15	71.67	M.S
4	Passive immunity acquired naturally: Is the transfer of antibodies from mother to fetus through the placenta or through breast milk	1.94	64.69	L.S
5	I imagine that active immunity lasts in the body for a longer period of negative passive immunity	1.57	52.44	L.S
6	I think that active immunity acquired naturally produced when the incidence of some diseases or subclinical disease (which does not show symptoms and signs)	1.80	60.0	L.S
7	I imagine that active immunity acquired artificially produced when giving vaccines to give immunity without the disease	1.72	57.5	L.S
8	Active immunity acquired artificially may occur by active or passive immunization	1.67	55.81	L,S
9	The most successful form of primary prevention is the national vaccination program, which led to immunity at the individual level and at the population level (General immunity)	1.86	62,22	L.S
10	Active vaccine refers to an individual vaccination by the introduction of anti-material (infectious agents or vaccine) and is often characterized by the production of anti-body by the host	1.66	55.55	L.S
11	I think that children vaccinated against childhood diseases is an example of Active immunity	1.52	50.83	L.S
12	Vaccines are substances containing live causes debilitating or etiology was slain or toxins to generate antibodies that gives the body an effective immunity against certain diseases	2.10	70,0	M.S
13	I think that the two vaccines: Vaccines are optional and mandatory vaccines	1.76	58.88	L.S
14	Vaccine against tuberculosis disease, as well as DPT + polio vaccine are mandatory vaccines	1.86	62,22	L.S
15	I think that typhoid and smallpox vaccines, rubella and mumps vaccines are optional	1.73	57.77	L.S
16	Immune Person - A person who possesses specific protective antibodies or cellular immunity as a result of previous infection or immunization.	1.39	46.33	L.S
17	DPT vaccine contains a vaccine against diphtheria, tetanus and whooping cough	1.81	60.33	L.S
18	I think that vaccines that must be taken in childhood before entering the school are: whooping cough, tetanus, polio, measles, rubella, mumps, with booster doses	1.84	61.48	L.S
19	In my opinion that vaccines that are taken during school are booster doses of rubella, mumps, viral hepatitis and typhoid vaccine	1.48	49.33	L.S
20	I imagine that the incubation period in the hepatitis A, long with an 15 - 50 days before the onset of symptoms	1.46	48.67	L.S
21	I imagine that the incubation period of hepatitis B viral long with an 45 - 180 days before the onset of symptoms	1.70	56.66	L.S

22	I imagine that the incubation period in typhoid disease depends on the amount of germs in contaminated food is up to 1-3 weeks	2.06	68.67	M.S
23	I think that the incubation period of poliomyelitis is up to 7-14 days	1.43	47.66	L.S
24	I think that the incubation period in measles disease up to 7-14 days	1.54	51.33	L.S
25	I think that the incubation period of pertussis is up to 7-10 days	2.16	72.0	M.S
	Total	1.76	58.85	L.S

MS= Mean of score, Low = Less than (66.66), moderate (66.66- 77.77) and high (77.78-100.0), L.S=Low grade

Table (2) indicated that teachers' awareness towards immunity and immunization was low grade awareness (poor), with respect to the total mean of score and relative sufficiency (RS).

## DISCUSSION:

### 1. Discussion of demographic characteristics of study sample for teachers' awareness.

Throughout the course of the present study, and as it has been shown in table (1) that (78%) of teachers in the sample study were females. Concerning to their ages (39%) of them were (40–49) years old.

Regarding the marital status, the majority of teachers (65%) were married. Concerning educational level, half of the teachers (50%) were Institute graduate.

The result shows that (26%) of teachers had (21–and more) years of employment in teaching sector. Furthermore, (58 %) had no opportunity to be involved in training courses concerning communicable diseases control; these findings disagree with the <sup>(8)</sup> which centered on the enrollment of the teachers in training sessions to improve their knowledge, skills, and awareness to keep them to up-dated knowledge concerning communicable diseases control. The researcher suggests an opportunity for teachers to be enrolled in training sessions to improve their knowledge and skills.

### 2. Discussion of the teacher's awareness towards immunity and immunization:

Table (2) demonstrate the total mean of score for teachers' awareness which indicate that there is poor level of awareness (low significant) for teachers towards immunity and immunization with respect to the total mean of score, and to the relative sufficiency (RS) .

This result is supported by <sup>(9)</sup>; <sup>(10)</sup> they indicate that teachers' awareness was poor before implementation an educational program for teachers in primary school.

## CONCLUSION:

The study concluded that teachers' awareness towards immunity and immunization in Baghdad primary schools was poor.

## RECOMMENDATION:

1. The study recommends that there is a need for cooperation between the Ministry of Health and the Ministry of Education on writing a book systematically for primary schools about the nature of the transitional diseases and how to control them through immunity and immunization.
2. Emphasis on continuous sessions throughout promotes immunity and immunization in all primary schools.

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