

Evaluation of Health Care Workers' Knowledge about Immunity and Vaccination at Primary Health Care Centers in Al-Hilla City

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ABSTRACT

Background: Immunizations are one of the most effective health initiatives of the twentieth century, but many people do not receive sufficient immunizations in several parts of the world. Every year, about three million people around the world die from diseases that can be prevented by vaccines; half of the dead were infants and children. However, community health care workers have become increasingly recognized and acknowledged as an important and

efficient intervention essential for increasing community-centered health services, especially in deprived areas.

Objective: To evaluate the level of health care workers' knowledge about immunity and vaccination at primary health care centers.

Methodology: A cross-sectional descriptive study design conducted for the periods 27 \ September \ 2020 to 25 \ April \ 2021, among (315) health care workers who are selected by non-probability sampling

الخلاصة:

خلفية البحث: التحصينات هي واحدة من أكثر المبادرات الصحية فعالية في القرن العشرين، لكن الكثير من الناس لا يتلقون التحصينات الكافية في عدة أجزاء من العالم. في كل عام، يموت حوالي ثلاثة ملايين شخص حول العالم من أمراض يمكن الوقاية منها عن طريق اللقاحات، ونصف الموتى من الرضع والأطفال. ومع ذلك أصبح العاملون في مجال الرعاية الصحية المجتمعية معترفاً بهم بشكل متزايد على أنهم تدخل مهم وفعال ضروري لزيادة الخدمات الصحية التي تركز على المجتمع، لا سيما في المناطق المحرومة.

الهدف: تقويم مستوى معرفة العاملين في مجال الرعاية الصحية حول المناعة والتلقيح في مراكز الرعاية الصحية الأولية.

المنهجية: تصميم دراسة وصفية- مقطعية تم إجراؤها في الفترة من 27 / ايلول / 2020 الى 25 / نيسان / 2021، على (315) من العاملين في مجال الرعاية الصحية الذين تم اختيارهم عن طريق أخذ العينات غير الاحتمالية (عينة الراحة)، والاستبيان الذاتي، واستخدمت الدرجات التي تم الحصول عليها للإجابات على الأسئلة المغلقة لتحديد مستوى المعرفة، تم استخدام الأسئلة العكسية، وتم استخدام العديد من المقاييس الإحصائية باستخدام الحزمة الإحصائية للعلوم الاجتماعية الإصدار 24، وذلك لتحليل وتقييم نتائج الدراسة.

النتائج: أظهرت النتائج أن العاملين في مجال الرعاية الصحية لديهم مستوى متوسط من المعرفة حول المناعة والتلقيح.

الاستنتاجات: كان هناك مستوى متوسط من المعرفة حول المناعة والتلقيح بين العاملين في مجال الرعاية الصحية. بالإضافة إلى ذلك، فإن الجزء الأكبر من المشاركين في هذه الدراسة هم المساعدون الطبيين والممرضات.

التوصيات: يوصي الباحث بتنفيذ برنامج تعليمي مخصص للعاملين في مجال الرعاية الصحية حول المناعة والتلقيح في جميع مراكز الرعاية الصحية الأولية.

الكلمات المفتاحية: المناعة، التلقيح، العاملين في مجال الرعاية الصحية.

(convenience sample), self-administered questionnaire, the scores obtained for answers to closed-ended questions were used to determine the level of knowledge, reverse questions were used, several statistical measures were used by using Statistical Package of Social Sciences version 24, in order to analyze and evaluate the results of the study. **Results:** The findings showed that health care workers have a moderate level of knowledge about immunity and vaccination.

INTRODUCTION

Immunization strengthens the host's capability versus diseases produced by bacteria and viruses. Immunity (the human body's capability to safeguard itself opposes diseases resulted from pathogenic bacteria or viruses) can grow obviously (when humans are vulnerable to bacteria or viruses) or can be provided by physicians via vaccination. If individuals are immunized to a disease, they are generally resistant to it or only get a mild form of it. Due to the fact that no vaccine is 100% safe, several individuals who have been vaccinated will also become infected with to disease ⁽¹⁾.

Several diseases that were once widespread and/or lethal (including polio, measles, and diphtheria) are currently rare or under control in populations and nations where vaccines are extensively utilized. Vaccination has finally eradicated one disease such as smallpox. Vaccines have proven to be very successful in avoiding serious diseases and promoting global health. Many significant diseases include Ebola virus infection, the majority of sexually transmitted infections (including HIV infection, syphilis, gonorrhea, and chlamydial infections), and many tropical diseases such as malaria, do not yet have effective vaccines ⁽²⁾.

Mentioned vaccine guidelines are essential for individual's own health, as well as the health of their

Conclusion: There was a moderate level of knowledge about immunity and vaccination among health care workers. In addition, the greatest part of participants in this study is medical assistants and nurses.

Recommendation: The researcher recommends implementing an educational program designed for health care workers about immunity and vaccination in all primary health care centers.

Keyword: Immunity, Vaccination, Health care workers.

households and community members. Most of the diseases that vaccination prevents are simply transmitted from one individual to another. Most of them can still be located in America and in further portions of the globe. These diseases prevalence quickly among unvaccinated children, who can be infected even if they live in places where the disease is not widespread due to the ease of modern travel ⁽³⁾.

Infants have some immunity to disease-causing pathogens for the first few weeks after birth. Until birth, the placenta transmits this security from their mother. This natural defense wears off after a short time ⁽⁴⁾.

Vaccines provide protection against a variety of diseases that were once much more prevalent. Tetanus, diphtheria, mumps, measles, pertussis (whooping cough), meningitis, and polio are only a few instances. Several of these diseases have the ability to cause severe or life-threatening conditions, as well as long-term health complications ⁽⁵⁾.

AIMS OF THE STUDY

To evaluate the level of health care workers' knowledge about immunity and vaccination at primary health care centers.

METHODOLOGY

Quantitative research, a cross-sectional descriptive study conducted to evaluate the health care workers' knowledge about immunity and vaccination for the periods 27th September 2020 to April 25th, 2021. A total of 315 health care workers from AL-Hilla city's primary health care centers were included in the study. They are chosen by a non-probability sampling method (convenience sample).

- Study Instrument

This instrument constructed by reviewing previous literature. Several statements of this instrument were modified and produced to improve the validity and to be more suitable for reaching the objectives of the present study.

Part I: Socio-Demographic Characteristics

This part comprises six items that relate to the socio-demographic characteristics of health care workers (gender, age, occupation, educational qualification, job experience in years, the participation in courses, seminars, and workshops about Immunity and Vaccination).

Part II: Knowledge of Health Care Workers about Immunity and Vaccination

This part concerning knowledge of health care workers about immunity and vaccination comprises (10 items). These items are measured and responses of participants by dichotomous Likert scale (Yes) (No).

In this questionnaire, reverse questions were used, some of the items used to answer (Yes) is a

correct answer, and the answer (No) is an incorrect answer, or the answer (Yes) is an incorrect answer and the answer (No) is a correct answer.

The correct answer of items of the questionnaire two, five, six, seven, ten, it (No). While the correct answer of items one, three, four, eight, nine, it (yes).

The questionnaire has been scored and rated on three levels of the Likert scale, (2) points for correct answer, (1) points for an incorrect answer, and the cutoff point (0.33) was determined based on scores (1, 2), respectively. Scores of responses are categorized according to the following: (1-1.33)= low level of knowledge, (1.34-1.67) = moderate level of knowledge and (1.68-2) = high level of knowledge.

By examining the questionnaire to assess the validity of the content of the questionnaire, a panel of experts (20) with more than 5 years of expertise in their field was selected.

The questionnaire's reliability is determined by (Internal Consistency). Cronbach's alpha coefficient was used to determine reliability in the pilot study. The tool's efficiency is shown by the coefficient of correlation ($r=0.84$).

The researcher met with primary health care providers to obtain their permission to participation in the research and to explain the study questionnaire, The data collection process begun from (31st January 2021 to 25th March 2021) in order to reach the objectives of the study.

RESULTS

Table (1): Distribution of the Study Sample to Health Care Workers' Socio-demographic Characteristics

Variables	Frequency	Percent
Gender	Male	68
	Female	247
	Total	315
Age	21-30	34
	31-40	34.9

	41-50	56	17.8
	51-60	42	13.3
	Total	315	100
Occupation	Physician	42	13.3
	Dentist	41	13
	Pharmacist	24	7.6
	Medical Technologist	18	5.7
	Nurses	59	18.7
	Laboratory Analyst	30	9.5
	Radiographer	5	1.6
	Medical Assistant	87	27.6
	Pharmacist Assistant	9	2.9
	Total	315	100
Educational Qualification	Preparatory school degree	32	10.2
	Institute	148	47
	Bachelor	113	35.8
	Postgraduate certificates	22	7
	Total	315	100
Job Experience in Years	1-5	71	22.5
	6-10	90	28.6
	11-15	45	14.3
	16 and above	109	34.6
	Total	315	100
Have You Participated in Training courses, Seminars, and Workshops on Immunity and Vaccination	Yes	180	57.1
	No	135	42.9
	Total	315	100

This table shows that (78.4) of sample are females, (34.9%) of them at age (31-40) years, (27.6%) of them are medical assistants, (47%) of them are institute graduated, (34.6%) of them have years of service more than 16 years, (57.1%) of them participated in training courses, seminars, and workshops on immunity and vaccination.

Table (2): Distribution of study Sample Response Knowledge of Immunity and Vaccination

No.	Items	Incorrect answer		correct answer		M.S	Ass
		f	%	F	%		
1.	Immunity may be innate or passive	9	2.9	306	97.1	1.97	H
2.	Immunity to measles virus is innate immunity	243	77.1	72	22.9	1.22	L
3.	Acquired immunity may be induced by active or passive immunization	78	24.8	237	75.2	1.75	H
4.	Active immunization refers to the immunization of an individual by administration of an antigen (infectious agent or vaccine) and usually is characterized by the presence of antibodies produced by the individual host.	40	12.7	275	87.3	1.87	H
5.	Vaccinating children against diseases of	92	29.2	223	70.8	1.70	H

	childhood is an example of ineffective immunity.						
6.	Active immunity refers to immunity during the transfer of a specific antigen that the body creates from a vaccinated person to an unvaccinated person.	184	58.4	131	41.6	1.41	M
7.	Transfer of the antibody from mother to infant is an active immunization.	243	77.1	72	22.9	1.22	L
8.	The vaccines are suspensions of attenuated (live) or inactivated (killed) micro-organism which inter immune system to the individuals.	49	15.6	266	84.4	1.84	H
9.	Vaccines that should be taken in preschool-age are whooping cough, tetanus, polio, measles, rubella, mumps, with booster doses.	19	6.0	296	94.0	1.94	H
10.	Vaccines that are taken while entering school with booster doses, including rubella, mumps, and typhoid only	191	60.6	124	39.4	1.39	M

f= frequency, %= percent, M. S.= mean score, Ass.= assessment level of mean score, L=low level (1-1.33), M=moderate level (1.34-1.67), H=high level (1.68-2)

This table shows that they have a high level of knowledge about immunity and vaccination in items (immunity may be innate or passive, acquired immunity may be induced by active or passive immunization, active immunization refers to the immunization of an individual by administration of an antigen (infectious agent or vaccine) and usually is characterized by the presence of antibodies produced by the individual host, vaccinating children against diseases of childhood is an example of ineffective immunity, The vaccines are suspensions of attenuated (live) or inactivated (killed) micro-organism which inter immune system to the individuals, & vaccines that should be taken in preschool-age are whooping cough, tetanus, polio, measles, rubella, mumps, with booster doses). Also moderate level in items (active immunity refers to immunity during the transfer of a specific antigen that the body creates from a vaccinated person to an unvaccinated person, vaccines that are taken while entering school with booster doses, including rubella, mumps, and typhoid only) and low level in items (immunity to measles virus is innate immunity, transfer of the antibody from mother to infant is an active immunization).

Table (3): Total Mean Score and Standard Deviation of study Sample According Immunity and Vaccination

Subject	No. of items	M. S	S. D.	Assessment
Immunity and vaccination	10	1.63	0.16	M

M. S. = mean score, SD= standard deviation, Ass. = assessment level of mean score, L=low level (1-1.33), M=moderate level (1.34-1.67), H=high level (1.68-2)

This table shows that health care workers have a moderate level of knowledge in Immunity and Vaccination.

DISCUSSION

Through table (1) Females were higher more than 3 quarters than males due to job requirements that hire females more, the age distribution in this study tends to second class (31-40) higher than other classes. Our results share a number of similarities with the findings of Joseph (2011) that found the

female (89.5%) and the age class between (31-40) is (45.1%) higher than other classes ⁽⁶⁾.

Regarding occupation, the majority of the sample is medical assistants in primary health care (PHC) centers. This result can be explained from the researcher's point of view that many of health

services provided by medical assistants related to their specialty such as (vaccination, health promotion, health education, apply for health programs, administering medications, disease prevention, clients records) and may work in other administrative positions, and this is different from all professions.

Concerning educational qualification, that half of the sample were institute graduates. This result can be explained from the researcher's point of view that the ministry of health policies hires institutions graduates in PHC centers rather than a bachelor's degree. Our results share a number of similarities with the findings of Muhammad Mussa and Abass (2014) who found (55%) of the study sample are institute graduated ⁽⁷⁾.

Concerning job experiences, more than one-third of the study sample at 16 years and above. From the researcher's interpretation, this result can be clarified that most health care professionals prefer working in PHC centers than hospitals because of the exhaustion, fatigue, physical discomfort, and psychological tension.

Regarding participation in courses, seminars on immunity and vaccination that more than half of the study sample showed participated in it, from the researcher's perspective, this finding can be explained that health care workers do not receive a job promotion unless they participate at least once a year in these training courses or seminars. This result disagrees with a study conducted by Bakey (2014) who found that only (34.4%) of the study sample participated in training courses ⁽⁸⁾.

Through table (2) More than three-quarters of the study, the sample does not know that immunity to

measles virus is an innate immunity and transfer of the antibody from mother to infant is an active immunization, and this can be explained because the inability of health care providers or the lack of opportunities to attend professional development programs for vaccines.

Most of the study sample know immunity may be innate or passive, and vaccines that should be taken in preschool-age includes tetanus, polio, whooping cough, rubella, mumps, and booster doses, this can be explained by the fact that most health care workers prepare vaccines daily to clients.

The majority of the study sample knows the definition of vaccines that live or killed micro-organism which inter to the body, this result approves with the study in Iraq performed by Ahmed (2021) who found more than three-quarters of the study sample know that ⁽⁹⁾.

CONCLUSION

There was a moderate level of knowledge about immunity and vaccination among health care workers at primary health care centers in Al-Hilla city. In addition, there are insufficient immunity and vaccination training courses for health care providers.

RECOMMENDATIONS

The Health ministry should concentrate on increasing courses or seminars for health care workers on immunity and vaccination, which will contribute to the improvement of their knowledge and, as a result, the advancement of Iraq's health care system.

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