

Mumps Disease in Iraq: The General Knowledge and Public Awareness

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ABSTRACT

The objective of this study is to investigate the knowledge and awareness of Mumps disease among Iraqi citizens. A Likert modified questionnaire of 21 different statements including general information of Mumps, transmission modes, diagnosis ways, risk behaviors, prevention, and treatment were used in this study. A questionnaires were distributed to 200 educated persons (120 females and 80 males) divided into three age groups (Group1=18-30, Group2=31-49, Group3=50 and more) years. Of these 70 persons were under (G1), 80 under (G2) and 50 were under (G3) age group. The study was conducted at University of Baghdad during the period of September 2016 to march 2017. The results of this study appeared that the majority of the tested age groups (100, 69.2, and 91.4%) were aware and have general information about Mumps disease. Also, 100, 82.5 and 72% of them have aware about Mumps transmission modes. Approximately 50% of the cohort believed that Mumps disease is preventable. Awareness of infection time and gender infection in male was more than in female ($p < 0.05$). The study concluded that the majority of tested educated Iraqi sample have same knowledge of Mumps disease almost. However, there are still misconceptions regarding the attitudes, which reflect a false perception of the disease among people. This calls for well-structured health education programs stressing on such misconceptions.

Keywords: Mumps, awareness, Iraq.

1. INTRODUCTION

Mumps (Parotitis) is an acute viral infection of the salivary glands caused by a paramyxovirus family species. In addition, paramyxovirus especially mumps has a positive role in the etiopathogenesis of multiple sclerosis (MS) [1-3].

It is characterized by the swelling of the salivary glands (the affected salivary glands are called the parotid glands), giving the patient a "hamster-like" face. The symptoms of mumps disease involve: fever, headache, muscle aches, tiredness, and loss of appetite. Which commonly appear 16-18 days after infection, but it may range from 12-25 days beyond infection. The symptoms ranging between sever to symptomless in some mumps patients that may do not know they are infected with the disease. Rarely, adults can contract

mumps with same symptoms and slightly complications [4].

Mumps disease can be spread through saliva or mucus. The person can be infected by mumps virus through coughing, sneezing, talking, sharing items and touching of other patients. Mumps can spread rapidly, even before the swelling of salivary gland and up to five days after the mumps can occasionally cause complications [5].

Meningitis (inflammation of the tissue covering the brain and spinal cord) and Encephalitis (brain inflammation), are the more complications of mumps that accompanied with orchitis (testicles inflammation), Oophoritis (inflammation of the

ovaries) and Mastitis (breast tissue). This complication can arise in adult men and women. Also, mumps can include other complications, such as deafness, pancreatitis and orchitis. Fortunately, the recovered person from mumps has a permanent immunity throughout his life [6].

Recently, the MMR vaccine (measles, mumps and rubella vaccine) is used in controlling and reducing the spread of these disease over all the world. The MMR vaccine was an effective vaccine that protect from these three diseases. This vaccine is giving to the children more than one dose according to recommendation of CDC and WHO, first administration of MMR through 12 to 15 months of birth. While the second dose must be administrated at 4 to 6 years. Also, the active MMR vaccine dose must be re-administrated to the children between the ages 12 months to 12 years. The teens and adults were also covered with the active MMR vaccine especially the females. Recently, the MMR vaccine was developed to MMRV vaccine (measles, mumps, rubella and varicella), it must be given to children with 12 months until 12 years [7].

Preventing the spread of mumps can be released by a number of precautions such as washing hands with water and soap, not going to work or school until 5 days after the symptoms starting, and covering the nose and mouth with a tissue when sneezing or coughing. There is no antiviral drug for mumps, only the symptoms can be treated [8].

Current mumps treatment can only help relieve the symptoms until the infection has run its course and the body has built up an immunity, much like a cold. In most cases, people recover from mumps within 2 weeks. Place something cold on the swollen area to alleviate the pain, eat mushy or liquid food as chewing might be painful, get sufficient rest and sleep and take painkillers, such as acetaminophen or ibuprofen [9, 10].

The aim of this study is to determine the awareness of mumps disease in educated Iraqi citizens.

2. MATERIALS AND METHODS

Two hundred of educated Iraqi citizens were participated in this survey. 40% (80 person) of them were male, while the female constituted 60% (120 females). 50% (100 person) of the respondents were lived in Karkh district of Baghdad city, while the other fifty percent (100 person) were lived in Al-Rusafa district of Baghdad city. The respondents were divided into three groups according to the age range, thirty-five percent of the respondents with age range (18 – 30 years) were classified to G1 group, while forty percent of the respondents with age range 31 – 49 years were classified to G2 group. Finally, twenty-five percent of the respondents with age range 50 and more, were classified to G3 group.

The questionnaire consisted of 21 different statements concerning basic knowledge of Mumps, transmission ways, diagnosis, risk behaviors, prevention, treatment, and some attitudes toward Mumps infected persons. The questionnaire used in this study is a two choice Likert modified to make the answers easy. The questionnaire included the general information about tested persons as age, gender, occupation and educated level. In addition, the first 5 statements were on general knowledge of the virus and the disease. The next 12 statements were about the knowledge of different modes of Mumps transmission. Four statements were about the symptoms of Mumps infection, drug of treatment and the availability of the vaccine (Table1).

2.1 Data analysis

The responses to the questionnaire were in the form of agree and disagree. The data were completely collected analyzed statistically using Statistical Package for Social Sciences program (SPSS v 24 for Windows).

3. RESULTS AND DISCUSSION

The results of this study indicate that the Cronbach's alpha statistics of questionnaire statements is 0.598.

Age group 1 (18-30 years)

Highest percent of answers as Yes of this group was at the question 6 which was about the transmission of mumps from person to another, this percent was 28.1%. Lowest percent of answers as Yes of this group was at the question 21 which was about mumps infect one gender, this percent was 0%. Highest percent of answer as No of this group was at the question 21 which was about mumps infect one gender, this percent was 27%. Lowest percent of answers as No of this group was at the question 6, this percent was 0% (Table1).

Age group 2 (13-49 years)

Highest percent of answers as Yes of this group was at the question one, this percent was 49.5%. Lowest percent of answers as Yes of this group was at the question 21 which was about mumps infect one gender, this percent was 0%. Highest percent of answer as No of this group was at the question 14 which was about effected of mumps prevalence by economic and social status, this percent was 50.5%. Lowest percent of answers as No of this group was at the question one, this percent was 0% (Table1).

Age group 3 (50 and more years)

Highest percent of answers as Yes of this group was at the question 6, this percent was 24.5%. Lowest percent of answers as Yes of this group was at the question 21 which was about mumps infect one gender, this percent was 2%. Highest percent of answer as No of this group was at the question 14 which was about effected of mumps prevalence by economic and social status, this percent was 21.9%. Lowest percent of answers as No of this group was at the questions 1, 2, 3, 4, 6 and 9, this percent was 0% (Table1).

Table 1: Percentage response to statements about awareness of Mumps disease (N=200).

Statement	Yes %			No %			Cronbach's alpha if item deleted
	G1	G2	G3	G1	G2	G3	
General knowledge of mumps disease							
1. Do you hear about mumps disease	25	49.5	23.5	2	0	0	0.579
2. Do you know mumps cause	25.5	46.4	24	2	2.1	0	0.580
3. Do you know mumps transmission mode	21.5	45	23.5	5.5	4.5	0	0.592
4. Do you know mumps symptoms	19.5	47	23.5	7.5	2.5	0	0.582
5. Is mumps transmission correlated with insects	2	16.3	8.2	25.5	32.1	15.8	0.542
knowledge of different modes of Mumps transmission							
6. Is mumps can transmitted from person to another	28.1	45.3	24.5	0	2.1	0	0.614
7. Is mumps can transmitted from animal to human	4.3	19.1	2.1	22.3	31.4	20.7	0.530
8. Is mumps infection percent increase seasonally	19.8	39.1	22.4	6.3	10.4	2.1	0.590
9. Do you know mumps protection ways	10.2	45.4	24	15.8	4.6	0	0.585
10. Is mumps has treatment	26	35.7	19.9	1.5	12.8	4.1	0.611
11. Do you get mumps infected previously	2.1	17.2	12	26	34.4	8.3	0.567
12. Is mumps can be transmitted by food and drink	23.4	33.7	14.7	4.3	13	10.9	0.601
13. Is mumps infection increase locally	14.7	33.7	21.2	13	15.2	2.2	0.553
14. Is mumps prevalence effected by economic and social status	19.9	39.8	17.9	7.7	50.5	21.9	0.580
15. Is governmental associations ways are enough to mumps control	6.3	16.7	8.3	21.9	32.8	14.1	0.599
16. Is social media has a role in awareness and control of mumps	11.7	43.9	17.9	15.8	6.6	4.1	0.588
17. Is military and security operations has a role in mumps prevalence	6.4	38.3	17	20.7	11.7	5.9	0.590
symptoms of patients with hepatitis Mumps infection							
18. Is mumps can be transmitted from mother to baby	12.2	30.9	16.5	16.5	17.6	6.4	0.574
19. Which age group more effected with mumps	13	33.5	11.5	8	14	8	0.630
20. Is school awareness has a role in mumps control and it's enough	21.5	38.5	22	5.5	11	1.5	0.593
21. Do you believe that mumps infect one gender	0	0	2	27	49.5	21.5	0.605

The results of this study showed that the answers of tested sample depends on their ages except the answers of question 6 which was about the transmission of mumps from person to another. So that there are significant differences among age groups in their answers except question 6. Also, the results of our work indicated that the answers of study sample are not depending on gender. So that no significant differences among answers of tested gender sample. The results of this study showed that the answers of tested sample are depending on their education level except the answers of questions 1, 2, 5, 13, 14, 15, 17 and 20. So that there are significant differences among sample answers which have different education level except questions 1, 2, 5, 13, 14, 15, 17 and 20. In addition, the results of recent work cleared that the answers of study sample are not depending on their occupations except question 17. So that no significant differences among answers of tested gender sample except question 17 (Table2).

Results from the recent work demonstrated a knowledge and awareness of mumps among different age groups in educated Iraqi citizens. This result has not been previously observed in similar survey studies of mumps in Iraq. Mumps immunization at age 15 months has been included in the national vaccination program since 1992 in Iraq. Mumps cases were recorded in Iraq in years 1997, 2003, 2004, 2015 and 2016 as (8253, 7051, 11821, 12957 and 73939 cases)

respectively. About 26% of recorded mumps cases were recorded in Nianawa province north of Iraq. Other study suggested that the mumps cases were increased in Baghdad through the period (2001-2010). Many causes behind this increase includes disease control, the migration, restrictions on travel, resources and sanitary conditions [11, 12].

This study shows majority of the sample had a good knowledge about the seriousness of the mumps disease. Approximately, 50% of the people knew about the vaccine. In comparison with other studies, most people had a poor knowledge about the dangerous of mumps disease [13]. This was because that most of the people knew that there was a vaccine, but few parents did not vaccinate their children because they did not believe that mumps was a dangerous disease [14].

In 2015, 12 new mumps cases have been registered in Arbat IDP camp in Sulamanayah province northern of Iraq. Most of the cases were recorded among new IDPs from Salahaldin, so that a campaign was conducted on February to ensure vaccination of all children in Arbat camp. In Central and southern provinces of Iraq, children below 5 years hope to administered trivalent oral vaccine irrespective. In Kurdistan northern of Iraq, a combined mumps vaccination campaign in Erbil, Suleimaniya and Duhok for children aged 9 months to 5 years [15].

Table 2: The relationship between sample answers with age, gender, education level and occupation (n=200).

Item No.	Age		Gender		Educated level		Occupation	
	Chi-square	Asymptotic Sig. (2-sided)	Chi-square	Asymptotic Sig. (2-sided)	Chi-square	Asymptotic Sig. (2-sided)	Chi-square	Asymptotic Sig. (2-sided)
1	63.94	0.000	1.04	0.306*	3.32	0.344*	**	**
2	258.5	0.000	1.92	0.382*	6.49	0.370*	0.581	0.446*
3	118.5	0.000	5.26	0.022*	25.4	0.000	5.431	0.020*
4	148.1	0.000	0.002	0.962*	18.14	0.000	5.431	0.020*
5	97.4	0.000	0.530	0.467*	9.70	0.021*	0.313	0.576*
6	35.1	0.166*	0.96	0.325*	91.9	0.000	0.598	0.439*
7	123.8	0.000	7.82	0.005	14.4	0.002	0.146	0.703*
8	111.9	0.000	1.85	0.173*	21.3	0.000	5.78	0.016*
9	131.1	0.000	0.052	0.820*	55.8	0.000	0.462	0.497*
10	106.1	0.000	2.53	0.111*	16.1	0.001	6.491	0.011*
11	146	0.000	7.64	0.006*	21.2	0.000	0.937	0.333*
12	114.9	0.000	0.97	0.324*	13.9	0.003	0.646	0.421*
13	124.1	0.000	8.39	0.004	6.27	0.099*	7.423	0.006*
14	114.8	0.000	4.77	0.029*	8.23	0.041*	7.436	0.006*
15	147.9	0.000	3.32	0.068*	3.53	0.316*	11.07	0.001
16	135.4	0.000	7.46	0.006*	21.2	0.000	4.962	0.026*
17	142.8	0.000	1.07	0.299*	7.66	0.054*	11.29	0.001
18	121.5	0.000	0.631	0.427*	18.5	0.000	0.028	0.868*
19	382.3	0.000	1.10	0.776*	39.5	0.000	4.581	0.205*
20	61.3	0.000	0.089	0.765*	8.76	0.033*	0.045	0.832*
21	97.9	0.000	1.04	0.306*	3.32	0.344	0.566	0.452*

*Answer of items is not depending on this parameter.

**No statistics are computed because the question1 is a constant.

Two MMR campaigns were carried out in 1992, 1994, 2001, and 2004 targeted children (age 7-15 years). Accordingly, the participants aged (17-20 years) should have received at least one dose of mumps vaccine [16]. According to the analysis of study results we need to announce necessary instructors as mumps spreading by coughing, sneezing, and contacting with infected saliva or person [17]. Also, we need to announce necessary to know that the incubation of mumps period is on average 2-4 weeks. A person who suffer from mumps disease may be infectious from 7 days before the salivary glands swell to 9 days after [18].

In our study, we thought that the Iraqi citizens need to know the symptoms of mumps disease because big number children under 2 years have no symptoms appeared when they infect with mumps. In this situation, they will suffer from severity of mumps disease. Mumps disease symptoms are include; headache, fever, muscle aches, malaise, poor appetite, swelling and tenderness of salivary glands. Furthermore, many patients suffer from other symptoms in other organs as headache, fever, neck stiffness, sensitivity to light, and vomiting. However, fever may continue for 6 days while the swollen of salivary gland may continue for 10 days [19].

Also, citizens need to know some information about mumps treatment and the fact that say there is no treatment for the mumps infection. Management of symptoms is focused on improving comfort. In addition, the unvaccinated adolescents and adults are most at risk, and are more likely to experience severe mumps

disease and complications. Immunization given on-time is the best method of preventing mumps. The MMR is given as part of the immunization schedule at 15 months and 4 years of age [20].

Vaccines are considering most successful medical advances in this time. Because all of the vaccines are free of adverse effects or the risk of complications. People should be aware of the risks and advantages of immunizations. The measles, mumps, and rubella vaccine is not associated with autism. Physicians should guide the people and educate them regarding the disadvantages of not vaccinating their children. The fatality rate of mumps disease is almost 1.8 per 10,000 cases. It is possible to event inflammation in other organs, such as joints, pancreas, kidney, breast, nerves, heart and thyroid. Women who have pregnant and infect with mumps disease may be at risk of miscarriage, but not fetal abnormalities [21].

People who suffer from infection with mumps must be isolated from other children, school and work until 3 weeks after the appearance of swollen salivary glands to protect others from infection [22].

4. CONCLUSION

The majority of the sample had a general knowledge about vaccines and a specific knowledge about chickenpox disease. One-third of them had already vaccinated their children and a major group is willing to vaccinate their children in the future if the vaccine is more readily available.

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