RESEARCH PAPER

Parents' Awareness and Perception of Chickenpox in Mosul City, Iraq

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ABSTRACT
This study aims to determine parents' awareness and perceptions of chickenpox in Mosul City, Iraq. A descriptive analytic cross-sectional study held in Mosul city between 1st of January 2025 and 1st of June 2025 in Al-khansa and Ibn Al-Atheer Teaching Hospitals. The data collected from this study included 305 participants (29male and 276 female) of age ranging from more than 16 to older than 32 years, who decided to share in a special questions formula that structured and modified as follow: it contained 21 core questions divided into: First 10 questions about the socio demographic, then 8 questions about awareness and perception of chicken pox and 3 questions about vaccination. The College of Medicine at Nineveh University approved the study, and participants provided informed consent before completing the questionnaire. All information was kept confidential and used only for statistical analysis. The study found a positive association between age (20-24) and both belief in the seriousness of chickenpox and awareness of the disease, and participants' opinions on the vaccine showed a positive attitude toward vaccination (83.9%). However, 16.1% express reluctance, emphasizing the need for targeted educational efforts. This study concluded that most residents of Nineveh had a good perception and awareness of the disease, and people will vaccinate their children if the vaccine is available.

Keywords: Chickenpox, Awareness, Perception, Mosul, Parents.

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INTRODUCTION

Chickenpox, or varicella, is a major public health problem because of its infectious nature and serious complications. The varicella zoster virus (VZV), a member of the herpesviridae family, is the causative agent and is distinguished by a vesicular rash, systemic symptoms, and rapid communicability. [1] This condition causes a distinctive skin rash with small, itchy blisters. It typically begins on the trunk, then the face, and spreads throughout the body. The skin changes, along with high fever and fatigue, often persist for 120 to 168 hours. [2] Pneumonia, encephalitis, and bacterial skin infections are all possible complications. [2] The condition is frequently more dangerous in older people than younger people. [3] Varicella is easily transmitted from person to person because it is airborne, usually through sneezes and coughs from infected people. [4] The incubation period is 10 to 21 days, followed by the distinctive emergence of a rash. [5] The disease can be transmitted 24 to 48 hours before the rash appears, until all skin changes crust over. The disease can also be transmitted via touching skin blisters. [4] Diagnosis often depends on clinical features [6], but some cases are rarely confirmed by polymerase chain reaction (PCR) on scabs or blister fluid. Antibody examination can also be performed. [3] Most people get chickenpox once. [4] Although reinfection is possible, these reinfections seldom produce symptoms. [7] Since vaccines were introduced in 1995, varicella vaccines have reduced the number of patients [8]. It protects more than 69% to less than 91% of people from infection, with benefit to severely infected persons. [4] Many nations recommend routine childhood vaccination [9]. Vaccination within 72 hours of exposure can improve outcomes.[10]

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Some immunological and demographic factors will decrease the likelihood of developing Varicella. An important factor is age; adolescents and adults are less vulnerable to the disease than young children, especially children who are not vaccinated or have not previously had the disease.[11] The epidemiology of chickenpox, or varicella, is an important aspect of World Health Organization research. Chickenpox, caused by the varicella-zoster virus (VZV), has been the focus of intensive research because of its infectious nature, widespread dispersion, and serious sequelae.[12] Aim of study: The study aims to determine parents' awareness and perceptions of chickenpox in Mosul city, Iraq.

METHODOLOGY

A descriptive analytic cross-sectional study held in Mosul city between 1st of January 2025 and 1st of June 2025 in Al-khansa and Ibn Al-Atheer Teaching Hospitals. The data collected from this study included 305 participants (29male and 276 female) of age ranging from more than 16 to older than 32 years, who decided to share in a special questions formula that structured and modified as follow: it contained 21 core questions divided into: First 10 questions about the socio demographic, then 8 questions about awareness and perception of chicken pox and 3 questions about vaccination. The College of Medicine at Nineveh University approved the study, and participants provided informed consent before completing the questionnaire. All information was kept confidential and used only for statistical analysis. We analyzed the data using Microsoft Office Excel and Minitab. We considered results statistically significant when the P-value was < 0.05.[13-16]

RESULTS

Table 1. Sociodemographic characteristics of the study participants (N = 305)

Characteristic	Category	n	%
Age, years	16–20	25	8.2
	20–24	113	37.0
	24–28	48	15.7
	28–32	31	10.2
	>32	88	28.9
Sex	Male	29	9.5
	Female	276	90.5
Residence	Rural	6	2.0
	Urban	299	98.0
Marital status	Widowed	25	8.2
	Married	270	88.5
	Divorced	10	3.3
Occupation	Unemployed or housewife	103	33.8
	Student	82	26.9
	Self-employed or other	106	34.8
Educational level	Primary school	9	3.0
	Middle school	16	5.2
	High school	31	10.2
	University degree	241	79.0
	No formal degree	8	2.6
Family income	Low	12	3.9
	Moderate	224	73.4
	High	69	22.6
Number of children	1	121	39.7
	2	57	18.7
	3	40	13.1
	4	33	10.8
	5	27	8.9
	>5	27	8.9
Age of children, years*	<1	95	31.1
	1–5	107	35.1
	6–10	75	24.6
	11–15	66	21.6
	16–18	55	18.0
	>18	89	29.2

This table 1 shows sociodemographic data. Demographic information for the sample is presented as three hundred four from residents of Nineveh, participants were mostly female in about 90% and most of them between age 20-24 years (37%) The age of most children who contracted chickenpox was 1-5 years in (35%) and the second most common age was children under 1 year in 31%.

Table 2. Knowledge and perceptions of chickenpox among participants (N = 305)

Question	Response	n	%
Have you heard of chickenpox?	Yes	265	86.9
	No	40	13.1
Do you consider chickenpox a serious disease?	Yes	159	52.1
	No	146	47.9
Do you consider chickenpox a contagious disease?	Yes	296	97.0
	No	9	3.0
Do you think bathing increases the risk or severity of chickenpox?	Yes	135	44.3
	No	170	55.7
Have you heard of a vaccine against chickenpox?	Yes	182	59.7
	No	123	40.3
If the vaccine were available, would you vaccinate your child?	No, I would not use the vaccine	49	16.1
	Yes, because the vaccine is effective	136	44.6
	Yes, to avoid medication and quarantine	46	15.1
	Yes, to reduce symptoms	74	24.3

This table 2 shows the assessment participants level of awareness and perception of chickenpox, study results revealed that 86.9% know what is chickenpox, 52.1% think that chickenpox is dangerous, 97% consider that chickenpox is contagious disease, 55.7% of them don't think that bathing increases the risk of chickenpox and 59.7% have heard about vaccine against chickenpox, 44.6% of them said they will vaccinate their children if the vaccine was available because the vaccine is effective and 16.1% don't want to use the vaccine, about the symptoms of chickenpox most of them answer for redness and rash in about 89.2% and skin itching in about 84.6% also most of them answered the infection occur by touching (84%) and orally 40%.

Table 3. Association between parental age and perceived seriousness of chickenpox

Age, years	No, n (%)	Yes, n (%)	Total, n (%)	*p* value
16–20	11 (3.6)	14 (4.6)	25 (8.2)	
20–24	45 (14.7)	68 (22.3)	113 (37.0)	
24–28	24 (7.9)	24 (7.9)	48 (15.7)	
28–32	19 (6.2)	12 (3.9)	31 (10.2)	
>32	47 (15.4)	41 (13.4)	88 (28.9)	
Total	146 (47.9)	159 (52.1)	305 (100)	0.165

This table 3 recorded an association between the parents' age and their belief in the seriousness of chickenpox. We found that parents between 20 and 24 years are the ones who believe in the seriousness of the disease at a rate of 37%. The p-value was 0.165, and it is not significant.

Table 4. Association between parental age and awareness that chickenpox is contagious

Age, years	No, n (%)	Yes, n (%)	Total, n (%)	*p* value
16–20	1 (0.3)	24 (7.9)	25 (8.2)	
20–24	5 (1.6)	108 (35.4)	113 (37.0)	
24–28	1 (0.3)	47 (15.4)	48 (15.7)	
28–32	1 (0.3)	30 (9.8)	31 (10.2)	
>32	1 (0.3)	87 (28.5)	88 (28.9)	
Total	9 (3.0)	296 (97.0)	305 (100)	0.717

This table 4 shows the association between parents' awareness and perception of chickenpox and their age;

parents aged 20-24 have the highest awareness and perception, at 37%. The chi-square test was 0.717, and it is not significant.

Table 5. Association between parental age and willingness to vaccinate their children against chickenpox

Age, years	Would not vaccinate	Vaccine is effective	Avoid medication and quarantine	Reduce symptoms	Total	*p* value
16–20	1.3%	3.93%	0.98%	1.96%	8.2%	
20–24	5.9%	17.04%	6.5%	7.5%	37.0%	
24–28	2.3%	9.18%	1.96%	2.3%	15.7%	
28–32	1.96%	2.9%	2.3%	2.9%	10.2%	
>32	4.6%	11.47%	3.27%	9.5%	28.9%	
Total	**16.1%**	**44.6%**	**15.1%**	**24.3%**	**100%**	

This table 5 shows the association between parents' age and their opinion about the vaccine: 5.9% of parents aged 20-24 don't want to vaccinate their children, while 17% do. The p-value was 0.368, and it's not significant.

Table 6. Association between number of children and parents' opinions regarding vaccination (N = 305)

Number of children	Do not want vaccination, %	Yes, because the vaccine is effective, %	Yes, to avoid medications and quarantine, %	Yes, to reduce symptoms, %	Total, %	P value
1	4.60	11.47	3.27	9.50	28.80	
2	1.30	3.93	0.98	1.96	8.20	
3	5.90	17.04	6.50	7.50	37.04	
4	2.30	9.18	1.96	2.30	15.70	
≥5	1.96	2.90	2.30	2.90	10.16	
Total	**16.06**	**44.59**	**15.08**	**24.26**	**100.00**	**0.499**

Note: Percentages are based on the total study sample (N = 305). Minor discrepancies in row totals may occur because of rounding. A P value <0.05 was considered statistically significant.

This table 6 shows the association between the number of children and their parents' opinions on the vaccine. It shows that 5.9% of parents with 3 children don't want to vaccinate their kids, while 17% do; the p–value was 0.499, and it is not significant.

DISCUSSION

The study found that most participants were women of different ages and that 86.9% knew about chickenpox, which is slightly lower than a study in Kuwait by Alnema et al., where 91.25% of participants reported knowledge of chickenpox.[13] The study found that most participants knew chickenpox is a contagious disease, which may be due to a higher level of education among participants. The study found that 59.7% of participants were aware of the presence of the vaccine, which was higher than studies in Libya done by (Ehmeid et al.), which found it to be 51%. [14] But this was lower than studies in Egypt done by (Seham et al.), where their knowledge of a vaccine against smallpox was 90%. [15] From the description of this study, there is a positive attitude towards vaccination by up to 83.9% for different reasons: conviction of the efficiency of the vaccine 44.6%, avoiding medicines 15.1%, and reducing symptoms 24.3%, compared to 76% in a study conducted in Australia by (Marshall H et al.). [16] But 16.1% of the participants remain reluctant to accept the vaccine, which may be due to a lack of information about the vaccine, as in a study done in Hungary by (Maria Ganczak et al.), 15.6%. [17] Through our research, we found that the percentage of symptoms is:

Skin itching is (84.6%) compared to (92.6%); fever is (67.9%) but (61.4%) according to a study in Nigeria. Likewise, redness and rash were (89.2%) in our research, but in Nigeria (Edje E et al.) they reached (93.6%). The comparison shows that itching and rash are the most common chickenpox symptoms.[18]

This research also indicates that symptoms of loss of appetite are (92.5%), symptoms of feeling tired are (48.2%), and headache is (22.3%). This study indicates that the most common method of transmission of infection is through touch (84.3%), which is close to the results of research in Libya by Ehmeid et al., which found it to be (84.8%), and (40.3%) of it is transmitted through contaminated water and food, which is less than the results in Libya (84.3%). It was found that (32.8%) is transmitted through respiratory droplets, compared to (46.6%) found in Libya. Finally, it was found that (7.9%) is transmitted through other sources, while the Libyan study found that this source constitutes (71.1%) of transmission methods. [14]

CONCLUSION

This study concluded that children under five years old are most affected by chickenpox, and most residents of Nineveh had a good perception and awareness of the disease. Most people said they would vaccinate their children if the vaccine were available.

Conflicts of Interest

The authors declare that there are no conflicts of interest.

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