Knowledge of Mothers Regarding Measles Control in Primary Health Care Centers in Al- Samawa City

Salwan Abdullah Naji , Khadija S. AL-Mizury, Shatha K. Atrah

Community Health Department /College of Health and Medical Technology Baghdad /Middle Technical University/ Iraq

Abstract

Background: Measles is a very communicable viral illness that can be prevented by immunization. knowledge is key tools to control of disease.

Objectives: The aims of study were identify mothers knowledge regarding measles control and immunization.

Methods: A cross sectional study (descriptive study) was conducted in Al-Samawa city/Iraq during the period between 2/3/ 2019 to 1/7/ 2019. Data collected from (450) mothers who have at least one child less than (5) years of age, though using a special questionnaire format.

Results: The study finding out about (72.9%) of mothers participant were acceptable knowledge of measles control and (24.4%) were poor knowledge while the (2.4%) have a good knowledge.

Conclusion: The study concluded most of mothers had been acceptable levels for knowledge. However, educational program is still needed to increase the parents' knowledge especially among illiterate and less educated parents.

Keywords: Knowledge, Immunization, Vaccination.

Introduction

Measles is a very communicable viral illness that can be prevented by immunization⁽¹⁾. Most cases of measles occur during the dry season and in areas with temperate climates, the peak occurs during late winter and early spring⁽²⁾. Measles is decreased because of immunization but many areas of the world continue to experience outbreaks⁽¹⁾. It is spread by coughing and sneezing, close personal contact⁽³⁾. Measles is characterized by fever, cough, coryza, and conjunctivitis, followed by a maculopapular rash, during the prodromal period, a Koplik spots may be present⁽¹⁾. Vaccination is one of the most cost-effective interventions to prevent major illnesses that contribute to child mortality⁽¹⁾. Measles vaccines are safe, effective and providing a crucial tool for global measles elimination⁽²⁾. To prevent recurrent outbreaks of measles, 95 percent of the population must be immune⁽³⁾. Several attenuated measles vaccines are available worldwide, either as single-virus vaccines or in combination with other vaccine viruses

(commonly rubella and mumps)⁽²⁾. Elimination of an infectious disease is mean the total absence of cases in a population. This situation can occur only if the entire population is immune as a result of either natural disease or vaccination⁽³⁾. Determine knowledge of mothers regarding measles which helpful to control, The aims of study were to determine mothers knowledge regarding measles control and identify mothers information source regarding measles control.

Material & Subject

Study design

A cross sectional study was carried out in Al-Samawa city for the period between 2/3/2019 to 1/7/2019. The study included (450) mothers at reproductive age, whose had at last one child or more under five years of ages, attended to primary health care center. This study included an interview with the mothers and using a special questionnaire format. The questionnaire contained 3

different parts. The first part included questions about the demographic characteristic and other 2 parts included questions about the knowledge and information source of mother toward measles control and vaccination .

Statistical Analysis

Analysis of data was carried out using the Statistical Packages for Social Sciences(SPSS-25) Data were presented in simple measures of frequency, percentage,

mean, standard deviation, and range (minimum-maximum values).

The significance of difference for different percentages(qualitative data)were tested using Pearson Chi-square test(χ^2 -test)with application of Yate's correction or Fisher Exact test whenever applicable. Statistical significance was considered whenever the P value was equal or less than 0.05.

Results

Table1:Distribution mothers participant according to the Socio-demographic characteristic.

I=Sociodemographic characteristic		No	%
Residence	Rural	209	46.4
	Urban	241	53.6
Age of mother(years)	<20y	13	2.9
	20---24	69	15.3
	25---29	99	22.0
	30---34	99	22.0
	35---39	121	26.9
	=>40y	49	10.9
	Mean±SD (Range)	31.4±6.5 (17-44)	
Marital status	Married	395	87.8
	Separated	33	7.3
	Widow	22	4.9
Mother's educational	Illiterate	34	7.6
	Read & Write	86	19.1
	Primary	106	23.6
	Intermediate	39	8.7
	Secondary	67	14.9
	Institute	70	15.6
	College & higher	48	10.7

Cont... Table1: Distribution mothers participant according to the Socio-demographic characteristic.

Mother's occupation	Governmental employee	110	24.4
	Self-employee	3	.7
	Retired	-	-
	Student	8	1.8
	Housewife	329	73.1
Number of child	1	21	4.7
	2	55	12.2
	3	142	31.6
	4	136	30.2
	=>5	96	21.4
Number of rooms	1	7	1.6
	2	355	78.9
	3	82	18.2
	=>4	6	1.4
Family members	1	2	.4
	3	10	2.2
	4	42	9.3
	5	124	27.6
	6	107	23.8
	7	53	11.8
	8	48	10.7
	9	24	5.3
	=>10	40	8.7
Crowding Index	=<1.0CI	37	8.2
	2.0---	177	39.3
	3.0---	145	32.2
	4.0---	66	14.7
	=>5.0CI	25	5.6
Type of house	Owned	216	48.0
	Rented	130	28.9
	Shared	104	23.1

Table(1) shows that (53.6%) from mothers participant were living in urban area with mother's age group the highest percentage were from (35-39) years were accounted (26.9%) and (87.8%) were married. Regarding to the education level of mothers participant were primary school graduate accounted (23.6%). About the mother's occupation majority of mothers participant

were housewife (73.1%), while the number of child, major part of mother's participant have three children were accounted (31.6%).

Lastly, crowding index refer to 2nd class (2 up to 4) personal sharing in the room, they accounted (86.2%).

Table(2): Distribution the mothers participant according the knowledge item.

II=Mother's Knowledge		Yes		No		DNK	
		No	%	No	%	No	%
Know about measles		443	98.4	-	-	7	1.6
Measles causes by;	Virus	188	41.8				
	Bacteria	154	34.2				
	Parasite	85	18.9				
	DNK	23	5.1				
Mode of transmission of measles by;							
-Droplet and airborne		215	47.8	192	42.7	43	9.6
-Feco-oral		292	64.9	123	27.3	35	7.8
-Direct contact		176	39.1	247	54.9	27	6.0
-Clothes and fomites		114	25.3	310	68.9	26	5.8
Sign and symptom of measles;							
-High fever		326	72.4	87	19.3	37	8.2
-Cough		87	19.3	303	67.3	60	13.3
-Runny nose (coryza)		13	2.9	394	87.6	43	9.6
-Conjunctivitis		5	1.1	395	87.8	50	11.1
-Rash		356	79.1	65	14.4	29	6.4
There is a vaccine available to prevent measles		438	97.3	2	.4	10	2.2
The name of vaccine is;							
-Tetanus Toxoid Vaccine		41	9.1	388	86.2	21	4.7
-Measles Vaccine		421	93.6	15	3.3	14	3.1
-DPT Vaccine		194	43.1	224	49.8	32	7.1
-MMR Vaccine		307	68.2	104	23.1	39	8.7
-OPV Vaccine		3	7	426	94.7	21	4.7
-BCG Vaccine		20	4.4	410	91.1	20	4.4
-Tetra Vaccine		135	30.0	297	66.0	18	4.0
-Penta Vaccine		100	22.2	324	72.0	26	5.8

Cont... Table(2):Distribution the mothers participant according the knowledge item.

The age measles vaccine should be given to baby;-At birth	15	3.3	410	91.1	25	5.6
-2months	19	4.2	414	92.0	17	3.8
-4months	56	12.4	365	81.1	29	6.4
-6months	158	35.1	235	52.2	57	12.7
-9months	277	61.6	154	34.2	19	4.2
-15months	110	24.4	313	69.6	27	6.0
-18months	51	11.3	362	80.4	37	8.2
-Preschool(4-6 years)	118	26.2	320	71.1	12	2.7
The age MMRvaccine should be given to baby;-At birth	51	11.3	362	80.4	37	8.2
-2months	48	10.7	363	80.7	39	8.7
-4months	36	8.0	386	85.8	28	6.2
-6months	62	13.8	359	79.8	29	6.4
-9months	94	20.8	315	70.0	41	9.1
-15months	274	60.9	162	36.0	14	3.1
-18months	96	21.3	318	70.7	36	8.0
-Preschool(4-6 years)	197	43.8	227	50.4	26	5.8
Frequent campaigns are useful for child	419	93.1	31	6.9	-	-
Frequent campaigns replace the routine vaccination in PHCC	200	44.4	217	48.2	33	7.3
Know measles control and elimination is important	431	95.8	-	-	19	4.2
Have the desire to know about measles and MMR vaccination	308	68.4	113	25.1	29	6.4
Heard about any side effect measles and MMR vaccination	394	87.6	56	12.4	-	-
Immunize the child;The side effect observed was;- Fever	236	52.4	214	47.6	-	-
-Pain and swelling in site of injection	230	51.1	220	48.9	-	-
-Rash	79	17.6	371	82.4	-	-
-Headache	44	9.8	406	90.2	-	-

Table (2) shows the (42%) of mothers participant answered correctly for measles causes by virus, while (47.8%),(39.1%),(25.3%) know correctly the measles transmission by droplet and airborne, direct contact and clothes and fomites respectively, high percentage (72.4% ,79.1%)from mothers participant know the measles accompanied by fever and rash. The majority (97.3%)from their know correctly the vaccine

available. About(93.6%),(68.2%) of mothers answered correctly about vaccine name to prevent measles while that (61.6%),(60.9%),(43.8%) respectively from mothers know correctly the child age should be given the vaccine. High percentage(52.4% ,51.1%) of mothers observed side effect as fever, pain and swelling in site of injection when immunize their child.

Overall score for knowledge in figure (1) in which majority (72.9%) of mothers participant were acceptable knowledge of measles control and (24.4%) were poor knowledge while the (2.4%) have good knowledge.

Figure(1) score for knowledge

Table(3): Distribution the mothers participant according to information source.

information source	No	%
-Health workers	416	92.4
-TV&radio	213	47.3
-Social media(internet/Facebook)	182	40.4
-Neighbors	83	18.4
-Relatives & friends	51	11.3

Table(3) shows that health workers registered high percentage among studied mothers, were accounted (92.4%).

Table(4): Association between socio-demographic characteristic of mothers participant and Knowledge score.

I=Sociodemographic characteristic		Knowledge Score(Q24)				
		Poor(<48)		Acceptable/Good(>=48)		P value
		No	%	No	%	
Residence	Rural	57	51.8	152	44.7	0.194
	Urban	53	48.2	188	55.3	
Age of mother (years)	<20y	4	3.6	9	2.6	0.753
	20---24	15	13.6	54	15.9	
	25---29	20	18.2	79	23.2	
	30---34	25	22.7	74	21.8	
	35---39	31	28.2	90	26.5	
	=>40y	15	13.6	34	10.0	
Marital status	Married	98	89.1	297	87.4	0.882
	Separated	7	6.4	26	7.6	
	Widow	5	4.5	17	5.0	
Mother's educational	Illiterate	11	10.0	21	6.2	0.0001*
	Read & Write	43	39.1	43	12.6	
	Primary	37	33.6	69	20.3	
	Intermediate	16	14.5	25	7.1	
	Secondary	3	2.7	64	18.8	
	Institute	-	-	70	20.6	
	College & higher	-	-	48	14.1	
Mother's occupation	Governmental employee	-	-	110	32.4	0.0001*
	Self-employee	-	-	3	0.9	
	Student	-	-	8	2.4	
	Housewife	110	100.0	219	64.4	

Cont... Table(4):Association between socio-demographic characteristic of mothers participant and Knowledge score.

Number of child	1	4	3.6	17	5.0	0.478
	2	9	8.2	46	13.5	
	3	36	32.7	106	31.2	
	4	33	30.0	103	30.3	
	=>5	28	25.5	68	20.0	
Crowding Index	=<1.0CI	1	0.9	36	10.6	0.0001*
	2.0---	36	32.7	141	41.5	
	3.0---	36	32.7	109	32.1	
	4.0---	23	20.9	43	12.6	
	=>5.0CI [†]	14	12.7	11	3.2	
Type of house	Owned	46	41.8	170	50.0	0.024*
	Rented	43	39.1	87	25.6	
	Shared	21	19.1	83	24.4	
*Significant difference between proportions using Pearson Chi-square test at 0.05 level						

Table(4)show significant association at $P<0.05$ among total Knowledge and difference levels of demographic variable (level of educational, mother's occupation, crowding Index and type of house).

Table(5):Association between information source and knowledge score.

Source of information		Knowledge Score (Q24)				
		Poor (<48)		Acceptable/Good (>=48)		P value
		No	%	No	%	
-TV&radio	Yes	35	31.8	178	52.4	0.001*
	No	75	68.2	162	47.6	
-Social media (internet/Facebook)	Yes	12	10.9	170	50.0	0.001*
	No	98	89.1	170	50.0	
-Relatives & friends	Yes	4	3.6	47	13.8	0.775
	No	106	96.4	293	86.2	
-Neighbors	Yes	8	7.3	75	22.1	0.001*
	No	102	92.7	265	77.9	
-Health workers	Yes	101	91.8	315	92.6	0.0001*
	No	9	8.2	25	7.4	

*Significant difference between proportions using Pearson Chi-square test at 0.05 level

Table(5) shows predominant information source of knowledge was health worker about (92.6%) and statistically high significant association at $P < (0.01)$.

Discussion

The results of the study offer insight to the knowledge of mothers regarding measles control in Al-Samawa city, and can be utilized to conduct of population.

Table(1) shows the majority percentage (53.6%) were from urban area, this result was similar to study result done in Iraq⁽⁴⁾. Regarding to age group of mother participant the study result revealed that most of mother's age group were (35-39) years, with Mean $\pm$ SD of their age (31.4 $\pm$ 6.5), our result found (87.8%) were married, this result was agree with study result done in Iraq⁽⁵⁾ and in Jordan⁽⁶⁾. Present study showed a high percentage was primary school level (23.6%) this result was accordance with study result done in India⁽⁷⁾ and discordance with other study result done in Jordan⁽⁶⁾ who found (44.5%) were university and higher level. This difference attributed to variation in socio-economical status between the communities.

Regarding to occupation aspect, in our study the majority of mothers were house wife, they were accounted (73.1%), this may be due to the most mothers were unable to work because low education level, family responsibility, aging and lost opportunity to find work. This result was similar to the study result done in Iraq⁽⁴⁾ and in (KSA)⁽⁸⁾.

About the crowding index refer to 2nd class (2 up to 4) personal sharing in the room, they accounted (86.2%). A strong relationship between crowding index of family and measles vaccination coverage rate, this may be attributed to higher education level of families with high economic status, lead to good awareness about of important the measles vaccination.

Table(2) reveal that (98.4%) of their know about measles, this result was similar to the result study done in China⁽⁹⁾. Regarding to item of is measles / viral, our study show accounted (41.8%) of mothers participant know measles is viral disease, this finding disagree with study conducted in Switzerland⁽¹⁰⁾, who reported that mothers participant were (85.8%) know measles is viral disease this difference may due to differ in level of health

education and culture status between the communities. According to item "mode of transmission" by; droplet and airborne, direct contact and clothes and fomites the correctly answered were (47.8%), (39.1%), (25.3%) respectively, our result agree with result study conducted in India⁽¹¹⁾. About the "sign and symptom" high percentage (79.1%, 72.4%) from mothers participant know the measles accompanied by rash and fever, this finding were accordance to report of study in India⁽¹¹⁾. According to item "there is a vaccine available to prevent measles" the majority of mothers participant were accounted (97.3%) know correctly, this result similar to other study done in KAS⁽⁸⁾. About (93.6%) of mothers participant answered correctly for vaccine name, this a high knowledge percentages for vaccine name may be due to the fact that the vaccines are named by the diseases they prevent. This result agree with study results done in Nigeria⁽¹²⁾

The study finding regarding to child age should be given the vaccine (measles, MMR) around (61.6%), (60.9%), (43.8%) respectively from mothers participant answered correctly, this finding accordance with study done in China⁽⁹⁾. About subject "frequent campaigns are useful for child" (93.1%) of mothers sample answer "Yes", our result similarity to study reported in Iraq⁽¹³⁾. The current study showed large number (95.8%) of mothers participant know measles control and elimination is important, this result similar to study result done in Iraq⁽⁴⁾. Our study found the percentage (52.4%, 51.1%) of mothers participant observed side effect as fever, pain and swelling in site of injection respectively when immunize their child, this finding accordance with study result done in Iraq⁽⁴⁾.

Table(3) shows, each mothers participant might have one or more from different information source about measles and vaccination. Our study reported (92.4%) of their consider the health workers as information source. Our finding accordance with study result done in Iraq⁽⁵⁾. Our study found that (47.3%) of their who reported TV as information source, this result compatible with study result done in Egypt⁽¹⁶⁾.

As for items "social media (internet/ facebook), relatives & friends and neighbors" were accounted (40.4%), (11.3%), (18.4%) respectively, our finding similar with finding in Iraq⁽⁴⁾ (13)

Table(4)demonstration there was no significant association between knowledge and (residence, age of mother and marital status) of mothers participant, while relationship between knowledge and mother's educational level and mother's occupation was statistically significant at($P < 0.01$), this results matched with study result done in Egypt⁽¹⁴⁾

Another finding in study was asignificant relationship at($P < 0.01$) between knowledge and crowding index and type of house, this result agree with other study result done in Iraq⁽¹⁵⁾

Table(5)shows the association between health worker as (information source) of mothers participant and knowledge was ahiger significant at $p < (0.001)$. Similarly to studies reported in Iraq⁽⁶⁾.While about the items"TV&radio, social media(internet/facebook) and neighbors" as information source was significant association with knowledge of mothers participant at $P < (0.05)$. Our finding agree with study done in (KSA)⁽⁹⁾.

Conclusion

Most of mothers had been acceptable level for knowledge and receive information from health worker.

Conflict of Interest : none

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Ethical Clearance : From patients and my college .

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