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Original Research Article

Measles vaccination coverage among children aged (12-23) months in Marawi locality - Northern state, Sudan - 2016

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ABSTRACT

Background: Worldwide measles remains the fifth cause of mortality among children under 5 years. Immunization coverage is the proportion of individuals in the target population who are vaccinated. It is a key measure of immunization system performance. Coverage for measles in Eastern Mediterranean region in 2015 for MCV1 was 85%, and MCV2 was 61%.
Methods: A total sample size of 462 mothers was determined according to WHO guidelines regarding coverage survey in (February - July 2016). Data were collected using a prepared and pretested questionnaire, reviewing cards of children, and interview with EPI personnel. Data were analyzed using SPSS version 20, $p \leq 0.05$ was considered significant.
Results: The majority of the children (96.1%) were vaccinated against MCV1, and (77.4%) were vaccinated against MCV2. Small group of mothers (5.7%) had a negative attitude towards immunization. Most mothers (94.3%) were satisfied with measles immunization services. More than half of mothers (55.7%) wait for <15 minutes to immunize their children. Most of the mothers (62.3%) went to the immunization centers by public transports. The main factors affecting vaccination coverage were: weakness of incentives, lack of means of transport for staff, poor working environment like: shortage of water, furniture and technological materials.
Conclusions: The coverage with MCV1 was reaching the WHO elimination standards while the coverage of MCV2 was not; due to many factors that affected the vaccination coverage. The study recommends health education covering all aspects of immunization, improvement of the working environment, and availing outreach centers.

Keywords: Measles, Vaccination, Marawi, Sudan

INTRODUCTION

Morbilli, rubeola, or red measles are all names of measles it is a highly infectious and serious disease caused by virus from the *Paramyxo* virus family and it is normally passed through direct contact and through air.

Vaccination is injection of a killed microbe to stimulate the immune system against the microbe. The proportion of individuals in the target population who are vaccinated is the immunization coverage.[1]

The disease is a serious problem with a high mortality (10%), in temperature zone most cases of measles occur during winter and early spring, during dry seasons in tropical zones the incidence of measles increased.[2]

In 2011, there were 158,000 measles deaths globally – nearly 430 deaths every day or 18 deaths every hour, almost all (more than 95%) of measles deaths occur in countries with low per capita incomes and weak health infrastructures.[3]

Sudan has experienced a large measles outbreak during 2011, 2012, and 2013, the reported cases were 5616, 8523, and 2813 confirmed measles cases respectively, leading to an incidence rate of 155/1000,000, 226/1000,000, 72/1000,000 population in 2011, 2012 respectively which is much higher than the target for measles elimination (<5 cases/1000,000 population).[4]

In Marawi locality there are 49 confirmed measles cases up to June - 2015 which are represent 89% of total cases in the northern state, 90% of these cases were not vaccinated according to EPI data, measles routine vaccination coverage for the previous year 2014 was 89% for MCV 1, and 64% for MCV 2 which is far away from elimination target (95% for MCV1, MCV2).[5]

METHODS

According to WHO protocol the sample size was 462 mothers, using simple random sampling so villages were selected randomly using lottery method these villages are: (Gozhindi, Alkorishamal, Osliwast, Korti, Albasa, Algaria3, Om jawasiralmashroa, Om jagra, Abodom, Alsagai, Samaareetbahri, Albajoor, Haloof, Alball, Gaziratturj, Albarsa, Alarakbahri, Alsab W Alhaw, Alzomawast, Aldati, Magashi, Hai wastshamal, Hai alshatishamal, Morbaa 2, Noorizainalabdeen, Dar Alsalam, Alogda, Alhijeer, Albarkel Ganoub, Shiba), 14 mother from eligible house selected according to WHO cluster survey protocol. Which the first house to be visited in each cluster should be selected at random, the method for selecting the first house will vary according to the population density (rural versus urban areas) and whether household lists are available, data was collected using the following tools:

Questionnaires: A prepared and pretested questionnaire was directed to mothers to obtain data about measles vaccination coverage among children as age, mother's occupation, mother's education level child vaccination status, and the possible factors that affect coverage…etc.

Reviewing cards: Child immunization card was reviewed to check child measles immunization status.

Interview: with EPI personnel (locality health officers and technician) to collect data and possible factors affecting measles vaccination coverage.

Data was analyzed by using (SPSS) version 20.

RESULTS

The main results of study are: all mothers knew measles, 83.8% of mothers mentioned the appropriate age of measles vaccination is (7-9) months, and 9.5% said less than 6 months, 95.2% of the mothers took their children for measles vaccination, 36.6% of the mothers not take their children to measles vaccination because immunization center is far, 9% of the mother due to AEFI, 95.2% of the children had measles immunization card, 71.6% of children with cards took one measles dose, 70.8% of mother's reason for positive attitude towards measles immunization is preventing measles, 42.5% of mother's house is far (2-5) kilometer from measles immunization center, 94.3% of mothers were satisfied of measles immunization services, 44.4% of mothers not being satisfied from measles immunization services because of technicians dealing, 94.3% of mothers were satisfied of measles immunization services.

Table 1 showed that 68% of mothers not immunized their children by measles vaccination because vaccination didn't prevent disease. Table 2 showed that 92.5% of mother's husband encouraged child immunization against measles. Table 3 showed that 75.7% of mothers said that measles immunization had adverse event following immunization. Table 4 showed that 68.8% of mothers said mild fever is a common measles adverse event following immunization. Table 5 showed that 45.9% of mother's arrival the immunization center is (16-30) minutes to measles immunization. Table 6 displays a significant relationship between child age and taking children to vaccination p=0.000.

Table 1: Reasons among mothers for negative attitude regarding measles vaccination-Marawi locality- 2016.

Reasons	No	%
Not prevent disease	17	68
Have an AEFI	8	32
Total	25	100

Table 2: Husband encourages child measles immunization -Marawi locality- 2016.

Encourage	No	%
Yes	407	92.5
No	33	7.5
Total	440	100

Table 3: Existing of measles adverse event following immunization -Marawi locality- 2016.

Exist	No	%
Yes	333	75.7
No	107	24.3
Total	440	100

Table 4: Types of measles adverse event following immunization -Marawi locality- 2016.

Types	No	%
Mild fever	229	68.8
Pain in site of injection	83	24.9
Fever and rash	9	2.7
All above	12	3.6
Total	333	100

Table 5: Mothers arrival spent time to immunization center for measles immunization -Marawi locality-2016.

Arrival time/min	No	%
<15	161	36.6
16-30	202	45.9
>30	77	17.5
Total	440	100

Table 6: The relation between child age and taking children to vaccination -Marawi locality-2016.

Child age	Taking children to vaccination				Total	
	Yes	%	No	%	No	%
12-15	228	51.8	16	72.7	244	52.8
16-19	168	38.2	3	13.6	171	37
20-23	44	10	3	13.6	47	10.2
Total	440	100	22	100	462	100

X^2=46.002, df =1 p=0.000; highly significant.

Interview results

From an interview with: a number of immunization technician and health officers and local officers were asked about the reasons for the factors affecting measles immunization coverage from their point of view who mentioned that the main reasons affecting immunization coverage were: the weakness of financial incentive, the lack of means of movement, poor working environment (lack of water, lack of furniture).

DISCUSSION

The majority of the children (96.1%) aged (12-23) months were vaccinated by MCV1, this is complied with coverage in EMRO countries of MCV1 in 2015 was found to be (85%) among children aged (12-23) months, and also comply with the WHO recommended coverage for elimination phase which is (95%), measles vaccination coverage among children aged (12-23)was found (77.4%) this is similar and greater than coverage for EMRO countries in 2015 which was 61% for MCV2, and not comply with the recommended coverage for elimination phase which is (95%) as reported by (WHO).[6]

The study revealed that a large group of the husbands (40.7%) had private work and this similar to study carried by Abdalmajeed et al who was stated that (40.3%) of the husbands were free workers.[7]

The study revealed that more than half of the mothers (52.4%) lived in rural areas and this result is similar to study carried by Adebiyi et al who was stated that (73%) of the mothers lived in rural areas.[8]

The study revealed that the majority of the mothers (83.8%) said the appropriate age of children vaccination with measles was (7-9) months and this is differ from the findings of the study conducted by Bernhardt et al, who was stated that (76.6%) of children aged more than 9 months.[9] The study revealed that (94.3%) of mothers had positive attitude towards immunization this is similar and greater than the findings of the study carried by Bofarraj et al who was stated that (80.5%) had positive attitude towards measles immunization.[10]

CONCLUSION

The main factors affecting the vaccination coverage were: less than half of mothers not taking their children to measles vaccination because vaccination center is so far from their house, the majority of mothers had a positive attitude towards measles immunization, the majority of mothers reasons for positive attitude towards measles immunization is preventing from measles, most of mothers who did not vaccinate their children by measles vaccination because vaccination did not prevent disease, the majority of mother's husband encourage child immunization, the majority of mothers said the appropriate age of children vaccination with measles was (7-9) months, the majority of mothers took their children to measles immunization..

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REFERENCES

1. Jipan X, Dow WH. Longitudinal study of child immunization determinants in China. J Social Sci Med. 2005;61:601-11.
2. WHO. International Travel and Health. Geneva: World Health Organization Publication. 2013: 188-189.
3. World Health Organization (WHO), United Nations Children's Fund (UNICEF) Global Immunization and strategy, (2006-2015). Geneva, Switzerland and New York, USA. 2011.
4. Federal Ministry of Health-EPI. Ministry Records on Immunization. Federal Ministry of Health-EPI. 2015.
5. EPI, Sudan. Annual Report of immunization. EPI-Khartoum Sudan. 2015.

6. WHO. Immunization-Vaccines and Biological-Family and Community Health. 7th ed. Geneva, WHO. 2016.
7. Abdulmajeed, Yousif. Reasons of low coverage in Dalgo Locality, Northern Sudan. 2014.
8. Adediyi D, Olanrewaju O, Adeyinka E, Aimahku C. Uptake of Childhood Immunization among Mothers of Under-Five in South Western Nigeria. Int J Epidemiol. 2013;7(2):1-9.
9. Bernhardt IB, Christopher B, Babatunde I. Vaccination coverage and it is determinants in children aged11-23 months in an urban district of Nigeria. World J Vaccines. 2014;4:175-83.
10. Bofarraj T, Yigzaw A, Sahilemariam Y, Bulto T, Mengistu H, Belay T. National Expanded programme on immunization coverage survey report. Ethiopian J Health Development. 2008;22(2):148-57.

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