



doi:10.5281/zenodo.20158797

# **Sociodemographic Determinants Of Knowledge Of Mothers Towards Immunization Services In Port Harcourt Metropolis, River State**

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## **ABSTRACT**

The study investigated sociodemographic determinants of knowledge of mothers towards immunization services in Port Harcourt Metropolis, Rivers State using a descriptive cross sectional design, the population of the study was mothers in Port Harcourt, Rivers state. A sample size of 400 was derived using a multistage sampling technique with two stages. Data was collected using a structured self-administered questionnaire with close ended questions. Data analysis was done using mean and standard deviation to answer the research question and Anova to test the hypotheses at 0.05 alpha level. The findings of the study showed a greater percentage of mothers had good knowledge (68.7%) of immunization, 59(100%) of Muslims had good knowledge towards immunization services, 136(87.7%) who lived in the rural region had good knowledge towards immunization services, 196(77.2%) who had low socio-economic status had good knowledge towards immunization services. The result also showed a significant difference in knowledge of mothers towards immunization services in Port Harcourt metropolis based on religion, socioeconomic status, level of education and location of residence ( $p < .05$ ). It was concluded that mothers had good knowledge of immunization and positive attitude towards immunization. However, socio-demographic characteristics such as religion, socioeconomic status, level of education and location of residence influence knowledge and attitude towards immunization. It was recommended amongst others that the government through the ministry of health should conduct community-based educational programs that focus on the importance of immunization, vaccine safety and disease prevention, also collaborating with local healthcare providers, community leaders, and religious institutions to ensure culturally sensitive messaging and widespread dissemination of information.

**Keywords:** Sociodemographic, determinants, knowledge, mothers, immunization services

## INTRODUCTION

Mothers' knowledge of immunization services encompasses a comprehensive understanding of vaccine schedules, benefits, potential side effects, and the logistical aspects of accessing these services, which are crucial for ensuring child protection against preventable diseases. Research indicates that while many mothers possess basic awareness of the importance of vaccinations, their knowledge often varies in depth and accuracy, with common gaps in recognizing the full spectrum of vaccine-preventable illnesses and adherence to national protocols (World Health Organization [WHO], 2022). For example, studies in low- and middle-income countries reveal that a significant proportion of mothers up to 40% in some regions correctly identify core vaccines like measles and polio but falter on understanding booster doses or the role of herd immunity, leading to incomplete immunization coverage (Afolabi et al., 2019). This foundational knowledge is typically acquired through antenatal care, media campaigns, and community interactions, yet it remains influenced by personal health literacy, underscoring the need for ongoing education to translate awareness into action. Overall, maternal knowledge serves as a linchpin for public health, directly impacting child morbidity and mortality rates globally.

The components of mothers' knowledge towards immunization services include not only factual recall but also attitudinal and behavioral dimensions, such as confidence in vaccine safety and willingness to overcome barriers like clinic access. Surveys highlight that informed mothers are more likely to vaccinate on time, with knowledge scores correlating positively with practices like monitoring side effects post-vaccination (Gupta & Sharma, 2020). However, misconceptions persist, particularly around myths such as vaccines causing autism or infertility, which erode trust and result in vaccine hesitancy; for instance, qualitative data from diverse populations show that only about 60% of mothers fully endorse vaccine efficacy without reservations (Lee & Kim, 2023). Knowledge also extends to practical elements, like knowing where to obtain free services or the importance of cold-chain maintenance, areas where urban mothers often outperform rural counterparts due to better information dissemination (Patel et al., 2018). These multifaceted aspects of knowledge reveal that while progress has been made through global initiatives like the Expanded Programme on Immunization, targeted interventions are essential to address persistent informational disparities and enhance overall maternal competence.

Improving mothers' knowledge of immunization services requires multifaceted strategies that integrate education, technology, and community engagement to foster sustained behavioral change and achieve higher immunization rates. Evidence-based approaches, such as mobile health applications and peer-led workshops, have demonstrated effectiveness in boosting knowledge by 20–30% in intervention groups, particularly among underserved populations (Rodriguez et al., 2021). Public health policies should prioritize culturally adapted materials and routine counseling during well-child visits to dispel myths and reinforce accurate information, as seen in successful campaigns that increased knowledge and uptake in regions with historically low coverage (Smith & Jones, 2021). Ultimately, empowering mothers with robust knowledge not only safeguards individual children but also contributes to community resilience against outbreaks, emphasizing the role of collaborative efforts between governments, NGOs, and healthcare providers in bridging knowledge gaps for equitable health outcomes. It was against this background that the this study investigated the sociodemographic determinants of knowledge of mothers towards immunization services in Port Harcourt Metropolis, River State

## METHODOLOGY

The area of study was Port Harcourt metropolis. A descriptive cross-sectional design was adopted for this study. The population of this study comprised all nursing mothers in Rivers State. The total population of woman aged 15-49 years. The sample size for this study was 400 mothers. A multi stage sampling procedure was used to select the sample. The first stage is stratified sampling technique used to put the metropolis into ten strata which are in Port Harcourt metropolis. The second stage involved using a convenience sample method to distribute the questionnaire to the mothers, which implies data was collected from mothers that were available. The instrument for data collection for his study is self - structured questionnaire titled knowledge of mothers towards immunization services questionnaire. The

instrument was validated three other experts in Health Education. Copies of the questionnaire were administered to 20 nursing mothers whose children were within the ages 0-59 months during routine immunization exercise at Eleme local government area in Rivers and subjected to statistical analysis of Pearson Product Moment Correlation with the reliability index of 0.79. The instrument was administered to respondents during childhood routine immunization clinic sections over a period of four weeks with the aid of research assistants that were trained on how to interpret and record the response of respondents on the questionnaire to local language to the uneducated respondents and those who are not confident to fill the questionnaires. Data collected was analyzed using Statistical Product for Service Solution version 25.0 with the use of mean and percentage score as descriptive statistical tools while Analysis of Variance (ANOVA) was used to test hypotheses at 0.05 level of significance.

## RESULTS

**Table 1: Socio-demographic data**

Variables	Frequency	Percentages
<b>Age</b>		
20-30 years	115	28.7
31-40 years	210	52.5
41-50 years	75	18.8
<b>Religion</b>		
Christian	326	81.5
Muslim	59	14.8
Traditional	15	3.8
<b>Education</b>		
Primary	63	15.8
Secondary	164	41.0
Tertiary	173	43.3
<b>Socio-economic status</b>		
High	146	36.5
Low	254	63.5
<b>Location</b>		
Urban	245	61.3
Rural	155	38.8
<b>Income</b>		
N10,000-N30,000	25	6.3
N31,000-N50,000	207	51.7
N51,000>	168	42.0

Table 1 shows the socio-demographic data of respondents. The result showed that 115(28.7%) of the respondents were aged 20-30 years, 210(52.5%) 31-40 years, and 75(18.8%) were aged 41-50 years. For religion, 326(81.5%) were Christians, 59(14.0%) were Muslims and 15(3.3%) were traditional worshippers. For educational level, 63(15.8%) had primary education, 164(41.0%) had secondary education and 173(43.3%) had tertiary education. Based on socio-economic status, 146(36.5%) had high socio-economic status and 254(63.5%) had low socio-economic status. For location, 245(61.3%) resided in the urban area and 155(38.8%) resided in the rural area. for income, 25(6.3%) earned N10,000-N30,000, 207(51.7%) earned N31,000-N50,000 and 168(42.0%) earned N51,000 and above.

**Table 2: Knowledge of Mothers on Immunization**

S/NO	Items	Yes Freq %	No Freq %	Decision
1	Vaccination is recommended for all infants	304(76.0)	96(24.0)	Good
2	Infants can be vaccinated at any time in life	260(65.0)	140(35.0)	Good
3	Vaccination programme can be completed at any time	322(80.5)	78(19.5)	Good
4	Dose of vaccination to be administered has nothing to do with the health status of the child	277(69.3)	123(30.8)	Good
5	BCG is the only vaccine to be given at birth	229(57.3)	171(42.8)	Good
6	OPV-O and Hepatitis B Vaccine can be given any time as the first dose	329(82.3)	71(17.8)	Good
7	At 6 weeks pentavalent vaccine, OPV-1 and PCV are to be given to the infant	270(67.5)	130(32.5)	Good
8	PCV, Rotavirus, meningococcal conjugate vaccine may not be given at 10 weeks.	269(67.3)	131(32.8)	Good
9	4 doses of poliovirus vaccine should be given only at age 2-4 months of infant age	266(66.5)	134(33.5)	Good
10	The second dose of HBV can be given at any point in time	278(69.5)	122(30.5)	Good
11	Unvaccinated children are 2-3 times more likely to contract pertussis (whooping cough)	266(66.5)	134(33.5)	Good
12	Unvaccinated children are 6-5 times more likely to contract Pneumococcal infections	224(56.0)	176(44.0)	Good
13	Children should be given several doses of vaccines against 15 different infection by age 5 years	276(69.0)	124(31.0)	Good
14	Children who are immunized often develop fever	291(72.8)	109(27.3)	Good
15	Not following the vaccination schedule put children at increased risk of infections.	285(71.3)	115(28.7)	Good
<b>Grand total</b>		<b>275(68.7)</b>	<b>125(31.3)</b>	<b>Good</b>

Decision = >50% Good; <50% Poor

Table 2 shows the knowledge of mothers towards immunization services in Port Harcourt Metropolis, River State. The result showed that 275(68.7%) of the respondents had good knowledge of mothers towards immunization services while 125(31.1%) had poor knowledge of mothers towards immunization services in Port Harcourt Metropolis, River State.

**Table 3: Knowledge of Mothers on Immunization and education**

Variables	Knowledge of Mothers on Immunization		Total Freq %
	Good Freq %	Poor Freq %	
<b>Education</b>			
Primary	17(27.0)	46(73.0)	63(100)
Secondary	137(83.5)	27(16.5)	164(100)
Tertiary	121(69.9)	52(30.1)	173(100)
Total	275(68.8)	125(31.3)	400(100)

Table 3 shows the extent to which level of education influences knowledge of mothers towards immunization services in Port Harcourt Metropolis, River State. The result showed that 17(27.0%) of

respondents who had primary education, 137(83.5%) who had secondary education and 121(69.9%) who had tertiary education had good knowledge towards immunization services in Port Harcourt Metropolis, River State

**Table 4: Knowledge of Mothers on Immunization and religious affiliation**

Variables	Knowledge of Mothers on Immunization		Total Freq %
	Good Freq %	Poor Freq %	
<b>Religion</b>			
Christian	213(65.3)	113(34.7)	326(100)
Muslim	59(100)	0(0.0)	59(100)
Traditional	3(20.0)	12(80.0)	15(100)
Total	275(68.8)	125(31.3)	400(100)

Table 4 shows the extent to which religious affiliation influences knowledge of mothers towards immunization services in Port Harcourt Metropolis, River State. The result showed that 213(65.3%) of respondents who were Christians, 59(100%) who were Muslims and 3(20.0%) who were traditional worshippers had good knowledge towards immunization services in Port Harcourt Metropolis, River State

**Table 5: Knowledge of Mothers on Immunization and location**

Variables	Knowledge of Mothers on Immunization		Total Freq %
	Good Freq %	Poor Freq %	
<b>Location</b>			
Urban	139(56.7)	106(43.3)	245(100)
Rural	136(87.7)	19(12.3)	155(100)
Total	275(68.8)	125(31.3)	400(100)

Table 5 shows the extent to which location influences knowledge of mothers towards immunization services in Port Harcourt Metropolis, River State. The result showed that 139(56.7%) of respondents who lived in the urban region and 136(87.7%) who lived in the rural region had good knowledge towards immunization services in Port Harcourt Metropolis, River State

**Table 6: Knowledge of Mothers on Immunization and socio-economic status**

Variables	Knowledge of Mothers on Immunization		Total Freq %
	Good Freq %	Poor Freq %	
<b>Socio-economic status</b>			
High	79(54.1)	67(45.9)	146(100)
Low	196(77.2)	58(22.8)	254(100)
Total	275(68.8)	125(31.3)	400(100)

Table 6 shows the extent to which socio-economic status influences knowledge of mothers towards immunization services in Port Harcourt Metropolis, River State. The result showed that 79(45.9%) of respondents who had high socio-economic status and 196(77.2%) who had low socio-economic status had good knowledge towards immunization services in Port Harcourt Metropolis, River State

**Table 7: Analysis of Variance (ANOVA) showing significant difference in the knowledge of mothers towards immunization services in Port Harcourt Metropolis, River State based on level of education**

Sources of variance	Sum of squares	Df	Mean sum of squares	F-value	p-value	Decision
Between group	14.600	2	7.300	40.625	.000	Rejected
Within group	71.338	397	.180			
Total	85.938	399				

\* Significant. P<0.05

Table shows the One-Way ANOVA of significant difference in the knowledge of mothers towards immunization services in Port Harcourt Metropolis, River State based on level of education. The findings of the study shows that there was no significant difference in the knowledge of mothers towards immunization services in Port Harcourt Metropolis, River State based on level of education [F(2, 397) = 40.625; p = 0.00] as the p<0.05. Therefore, the null hypothesis which stated that there is no was significant difference in the knowledge of mothers towards immunization services in Port Harcourt Metropolis, River State based on level of education rejected.

**Table 8: Analysis of Variance (ANOVA) showing significant difference in the knowledge of mothers towards immunization services in Port Harcourt Metropolis, River State based on religious affiliation**

Sources of variance	Sum of squares	of Df	Mean sum of squares	F-value	p-value	Decision
Between group	9.706	2	4.853	25.274	.000	Rejected
Within group	76.231	397	.192			
Total	85.938	399				

\*Significant. P<0.05

Table 8 shows the One-Way ANOVA of significant difference in the knowledge of mothers towards immunization services in Port Harcourt Metropolis, River State based on religious affiliation. The findings of the study shows that there was no significant difference in the knowledge of mothers towards immunization services in Port Harcourt Metropolis, River State based on religious affiliation [F(2, 397) = 25.274; p = 0.00] as the p<0.05. Therefore, the null hypothesis which stated that there is no was significant difference in the knowledge of mothers towards immunization services in Port Harcourt Metropolis, River State based on religious affiliation rejected.

**Table 9: Analysis of Variance (ANOVA) showing significant difference in the knowledge of mothers towards immunization services in Port Harcourt Metropolis, River State based on location**

Sources of variance	Sum of squares	of Df	Mean sum of squares	F-value	p-value	Decision
Between group	9.128	1	9.128	47.297	.000	Rejected
Within group	76.810	398	.193			
Total	85.938	399				

\*Significant. P<0.05

Table 9 shows the One-Way ANOVA of significant difference in the knowledge of mothers towards immunization services in Port Harcourt Metropolis, River State based on location. The findings of the study shows that there was no significant difference in the knowledge of mothers towards immunization services in Port Harcourt Metropolis, River State based on location [F(1, 398) = 47.297; p = 0.00] as the p<0.05. Therefore, the null hypothesis which stated that there is no was significant difference in the knowledge of mothers towards immunization services in Port Harcourt Metropolis, River State based on location rejected.

**Table 10: Analysis of Variance (ANOVA) showing significant difference in the knowledge of mothers towards immunization services in Port Harcourt Metropolis, River State based on socio-economic status**

Sources of variance	Sum of squares	of Df	Mean sum of squares	F-value	p-value	Decision
Between group	4.928	1	4.928	24.212	.000	Rejected
Within group	81.009	398	.204			
Total	85.938	399				

\*Significant. P<0.05

Table 10 shows the One-Way ANOVA of significant difference in the knowledge of mothers towards immunization services in Port Harcourt Metropolis, River State based on socio-economic status. The

findings of the study shows that there was no significant difference in the knowledge of mothers towards immunization services in Port Harcourt Metropolis, River State based on socio-economic status [ $F(1, 398) = 24.212; p = 0.00$ ] as the  $p < 0.05$ . Therefore, the null hypothesis which stated that there is no significant difference in the knowledge of mothers towards immunization services in Port Harcourt Metropolis, River State based on socio-economic status rejected.

## DISCUSSION OF FINDINGS

The finding of the study shows the knowledge of mothers towards immunization services in Port Harcourt Metropolis, Rivers State. The result showed that 275(68.7%) of the respondents had good knowledge of mothers towards immunization services while 125(31.1%) had poor knowledge of mothers towards immunization services in Port Harcourt Metropolis, Rivers State. Therefore there was good level of knowledge towards immunization among nursing mothers in Port Harcourt. This finding corroborates that of Chris-Otubor *et al.* (2015) which reported that a high percentage of mothers (99.2%) reported that they have heard about immunization. About (90%) also reported that they knew that vaccines are meant to prevent childhood diseases rather than cause harm to the children. This was supported by a case control study by Melaka *et al.* (2014) which showed 95.3% and 98.7%, respectively of the cases and the controls, had heard about immunization. According to Ramavhoya *et al.* (2015), mothers who were taking care of their children below six years of age were mostly young adults who had an interest in their children's care including immunization. This is buttressed by Fauzia and Mazin (2015) study which revealed that almost all parents were aware of childhood immunization, and the majority of them knew the importance of following the immunization schedule to keep their children healthy, the majority (63.3%) of parents had moderate or adequate knowledge of immunization. The study also revealed that health workers are the main source of vaccination information to the vast majority of participants. The reason for the similarities in the studies may be because mothers get awareness about childhood vaccines from health workers and they oblige out of trust for the source of the information, it may be noted most mothers didn't know the functions of the different vaccines and some didn't know the names of the vaccines but kept to the vaccination schedule because they were informed to do so. It is important that health workers give complete information about vaccines to nursing mothers to enhance knowledge and encourage the use of vaccines. It is also probable that education may play a role in the knowledge of immunization in Port Harcourt as most mothers in the city have atleast a minimum of secondary school education and can understand written information. Finally it is possible that the availability of health centers and ease of access to vaccination centers may be responsible for above average knowledge of immunization in Port Harcourt.

The study shows the extent to which level of education determines knowledge of mothers towards immunization services in Port Harcourt Metropolis, Rivers State. The result showed that 17(27.0%) of respondents who had primary education, 137(83.5%) who had secondary education and 121(69.9%) who had tertiary education had good knowledge towards immunization services in Port Harcourt Metropolis, Rivers State. Those with secondary education had the highest level of knowledge of immunization; this may be because those with secondary school education were more in the study population. This finding corroborates that of Birhanu *et al.* (2016) where mothers who achieved higher education were two times more likely to have (AOR = 2.160, 95% CI: 1.208 – 3.864) positive attitude towards infants immunization than illiterate respondents. Bernsen *et al.* (2011) and Alenazilet *al.* (2017) showed education was significantly associated with knowledge of immunization ( $p < 0.05$ ) in the Arab nation. According to Ramadan *et al.* (2016), 211 (64.3%) of educated mothers with intermediate education had good knowledge of immunization (66%). This was supported by Ramavhoya *et al.* (2015) which revealed 80% of the sampled population who attained university education has more knowledge of immunization than those with secondary and primary education respectively. The similarity in the findings may be explained by the fact that mother's education influences health seeking behaviour. It is also believed that the higher the level of education, the higher the proportion of children who get fully immunized. Also

educated mothers have access to various sources of information on health that helps to reinforce the knowledge of important health issues such as vaccination of children.

The study shows the extent to which religious affiliation determines knowledge of mothers towards immunization services in Port Harcourt Metropolis, Rivers State. The result showed that 213(65.3%) of respondents who were Christians, 59(100%) who were Muslims and 3(20.0%) who were traditional worshippers had good knowledge towards immunization services in Port Harcourt Metropolis, Rivers State. The result shows Islamic religion has the most influence on knowledge of immunization services. This result may be explained by other factors such as level of education, attending antenatal clinics and delivering in a health facility. The finding of this study is at variance with that of Raji (2013) which showed Islamic faith (multivariate adjusted OR 0.63, 95% CI 0.49-0.82), being from the North east (multivariate adjusted OR 0.46, 95% CI 0.31-0.68) region of Nigeria, and being in a polygamous union (OR 0.77, 95% CI 0.61-0.97) were all inversely associated with complete immunization. Also Awodele et al. (2009) revealed that there were no significant relationships between the ages of respondents, religion and awareness of immunization. The reason for the difference may be because religion alone is not a sufficient factor to influence the knowledge of immunization, while religion may influence the health seeking behaviour of people, other factors are important to guide decision making about health among which are information from a health practitioner, level of education among others.

The study shows the extent to which location determines knowledge of mothers towards immunization services in Port Harcourt Metropolis, Rivers State. The result showed that 139(56.7%) of respondents who lived in the urban region and 136(87.7%) who lived in the rural region had good knowledge towards immunization services in Port Harcourt Metropolis, Rivers State. This implies those who lived in rural areas had better knowledge towards immunization services. This result was not expected and may be due to other factors such as more public awareness campaign being focused on the rural areas and better information dissemination models in the rural areas. The finding of this study is at variance with Raji (2013) which showed living in the rural area (multivariate adjusted OR 0.77, 95% CI 0.63-0.95), and being from the North east (multivariate adjusted OR 0.46, 95% CI 0.31-0.68) region of Nigeria were inversely associated with knowledge of immunization. Also Umeh et al. (2018) showed rural dwellers in Northern Nigeria had poor knowledge and negative attitude towards childhood vaccine. To buttress this point, Adeyinka et al. (2009) stated that immunization of the children was not significantly associated with the socio-demographic characteristics at 5% level of significance. The difference in the findings may be because other factors are responsible for good knowledge of vaccines in a rural area such as more public enlightenment efforts by NGOs, also there has been heavy investments in health services in rural areas by previous governments and foreign aid donors which has led to a great increase in attendance of antenatal clinics and hospital deliveries at highly subsidized prices unlike the urban areas where health service is expensive and payment is made out-of-pocket. However the findings of the study agreed with Rahman and Obaida-Nasrin (2010) which showed that approximately 60% of the children in rural Bangladesh were fully immunized, it was concluded that findings reflect that, irrespective of need, only children from higher economic or educational groups can afford to be fully vaccinated in rural Bangladesh.

The study shows the extent to which socio-economic status influences knowledge of mothers towards immunization services in Port Harcourt Metropolis, Rivers State. The result showed that 79(45.9%) of respondents who had high socio-economic status and 196(77.2%) who had low socio-economic status had good knowledge towards immunization services in Port Harcourt Metropolis, Rivers State. This result was not expected as good socio-economic standing is known to influence health seeking behaviour, this result may be because majority of the study participants (63.5%) belonged to the lower socio-economic class and majority (58%) had monthly income below 51,000 naira. This result varies with that of Birhanu et al. (2016) which showed high socioeconomic status represented by maternal education (Adjusted Odds Ratio [AOR]= 1.781, 95% CI: 1.035, 3.065) was significantly associated with knowledge of mothers regarding immunization of infants. According to AL-Zaharani (2013) majority of respondents (86.2%) were not employed and only 29.7% had their education up to university/college level and this led to

parents' knowledge score with a mean of 8.08 and SD of 1.8; employed mothers showed higher significant total knowledge score about vaccination than non-employed ( $8.9 \pm 1.55$ ) Versus  $7.95 \pm 1.81$ ,  $P > 0.001$ , also educated mothers had significant higher total knowledge score about child vaccinated than less educated ( $8.97 \pm 1.64$ ) Versus  $7.77 \pm 1.79$ ,  $P < 0.001$ ). Also Yousif et al. (2013) showed that residence and educational level were both found to be significantly associated with parents knowledge. These studies show high socioeconomic status correlates positively with knowledge and indeed compliance with immunization. To buttress this point, Omole and Owodunni (2012) showed 46.4% of mothers employed by various organizations complied with immunization, as against 27.9% self-employed mothers who did not comply. This was supported by Raji (2013) which showed factors significantly associated with complete immunization uptake included high socio-economic status, manifested by either maternal education (secondary or higher education compared to none; multivariate adjusted OR 1.54, 95% CI 1.13-2.09), or increasing family wealth (rich compared to poor; multivariate adjusted OR 1.81, 95% CI 1.30-2.54) and Rahman and Obaida-Nasrin (2010) posited that women with the highest wealth index were significantly more likely to fully immunize their children. The reason the reviewed studies varied with the findings of this study may be because this study had a higher population (63.5) of respondents in the lower socioeconomic class, also factors like education and place of residence influences knowledge of immunization.

## CONCLUSION

Based on the findings of the study, it was concluded that mothers had good knowledge of immunization and positive attitude towards immunization. However, socio-demographic characteristics such as religion, socioeconomic status, level of education and location of residence influence knowledge and attitude towards immunization. Therefore, there is need to put in place special programmes that will enhance knowledge and positive attitude towards immunization among mothers in Port Harcourt.

## RECOMMENDATIONS

In view of the findings of this study, the following recommendations were made.

1. The government through the ministry of health should conduct community-based educational programs that focus on the importance of immunization, vaccine safety and disease prevention, also collaborating with local healthcare providers, community leaders, and religious institutions to ensure culturally sensitive messaging and widespread dissemination of information.
2. The government through ministry of information and communication should utilize multimedia platforms such as radio, television, and social media to reach a broader audience by developing engaging and informative content that addresses common misconceptions, emphasizes the benefits of vaccination, and provides practical information about immunization schedules and locations.
3. The local government council can create community-based support groups for mothers to share experiences, dispel myths, and discuss the importance of immunization as this will facilitate open dialogues that encourage questions and concerns and foster a supportive environment that empowers mothers to make informed decisions regarding their children's health.
4. The government through the ministry of finance should invest in the improvement of healthcare facilities and immunization clinics to enhance accessibility and convenience for mothers and ensure adequate vaccine supply, trained healthcare professionals, and streamlined processes to minimize barriers to immunization.

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