



ORIGINAL RESEARCH PAPER

Political Science

MATERNAL AWARENESS REGARDING VACCINE PREVENTABLE DISEASE AND IMMUNIZATION

KEY WORDS: Maternal awareness¹, immunization² and vaccine preventable disease³

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ABSTRACT

Background: Maternal education and in particular maternal awareness regarding immunization and its importance in preventing vaccine preventable disease in children has an important role in immunization status of their children.

Objectives: (1) To assess the awareness of mothers of 11 to 23 months aged children in Malappuram district, Kerala and (2) To find out the association of maternal awareness with selected socio personal variables.

Materials and methods: This cross sectional study was conducted among 680 mothers selected by 30 cluster sampling method. Data was collected by interviewer administered questionnaire. The data has been analyzed using Statistical Package for the Social Sciences (SPSS) version 20.

Results: Among 680 mothers 58 per cent of mothers had moderate level of knowledge on VPDs and immunization and 26.3 per cent of mothers had inadequate knowledge only and 15.6 per cent mothers had adequate knowledge regarding VPDs and immunization. It was found that maternal awareness is having significant association with their age, education, source of information, place of residence and family income.

1. INTRODUCTION

A mother is considered to be the most responsible person in a child's life. Knowledge and known importance about childhood immunization in mothers not only increases the chance of the child to get immunized, but also increases the chance of child to be prevented from developing lethal diseases.

Various survey results bear the testimony that maternal education in general and in particular maternal awareness related to importance of immunization in preventing vaccine preventable disease has a strong influence on their health seeking behavior related to health of children.

Health seeking behaviours of the mother are influenced by her individual characteristics, the demographic characteristics of the household and support that she receives from her family and the community, as well as the larger policy environment that determine the availability of and her access to health services. Among the individual characteristics, maternal awareness related to health and more specifically Vaccine Preventable Diseases and immunization programme is considered most significant.

2. MATERIALS AND METHODS

Primary data from mothers of children aged 11-23 months were collected through informal interviews at respondents' residence. Socio demographic data of household was collected using interview schedule which included background characteristics of family, individual characteristics of mother and perception of mothers regarding immunization services.

Maternal awareness regarding vaccine preventable diseases, impact of immunization in preventing VPDs and immunization programme was collected using a knowledge test which consisted of 20 questions with a maximum score of 31. Scores of knowledge test were classified arbitrarily into three categories namely, 0 to 10 score as inadequate knowledge, 11 to 21 score as moderate and 22 to 31 score as adequate knowledge.

Data collected was entered in Excel sheet and analyzed using SPSS. For Descriptive statistics, frequency and percentage was calculated and chi square and F test were used for finding out associations.

3. RESULTS AND DISCUSSION

3.1 Socio Personal Variables of Mothers

Table 1: Distribution of Households According to the Type of Family

n=680

Sl. No.	Type of Family	Frequency	Percent
1	Nuclear	352	51.8
2	Joint	306	45.0
3	Extended	22	3.2
	Total	680	100

Source: Computed

Table 1 reveals that 51.8% of households had nuclear families, 45.0% had joint families and 3.2% had extended families. Analysis of the data identifies that nuclear family overweighs joint family by 5%.

Table 2: Distribution of Households according to Place of Residence

n=680

Sl. No.	Place of Residence	Frequency	Percent
1	Rural	574	84.4
2	Urban	106	15.6
	Total	680	100

Source: Computed.

Table 2 identifies that 84.4% of households were in rural areas and only 15.6% were in urban areas.

Table 3: Distribution of Mothers of the Index Child according to their Age

n=680

Sl. No.	Age group of mothers of the index children (in years)	Frequency	Percent
1	20 and below	75	11.0
2	21-25	374	55.0
3	26-30	191	28.1
4	>30	40	5.9
	Total	680	100

Source: Computed.

Table 3 shows that 55% of mothers of children of aged 11-23 months belonged to the age group 21 to 25 years, 28.1% were in the age group 26 to 30yrs age, 11% were 20 years or below and 5.9% were above 30 years.

Table 4: Distribution of Mothers based on their Educational Level

n=680

Sl. No.	Education of Mother of the Index Child	Frequency	Percent
1	10th and below	384	56.5
2	11-12th	226	33.2
3	Degree	46	6.8
4	PG/Professional	24	3.5
	Total	680	100

Source: Computed.

Table 4 shows that 56.5% of mothers had 10th or below education, 33.2% had 11-12th grade education, 6.8% studied upto degree and 3.5% of mothers had post graduate or professional level of education.

Table 5: Distribution of Mothers based on their Occupation
n=680

Sl. No.	Occupation of Mother of the Index Child	Frequency	Percent
1	House-wife	649	95.4
2	Coolie	19	2.8
3	Office	1	0.1
4	Technical	2	0.3
5	Professional	9	1.3
	Total	680	100

Source: Computed.

Table 5 depicts that 95.4% of mothers were house wives, 2.8% were coolie workers, 0.1% had office job, 0.3% had technical job and 1.3% had professional employment.

Table 6: Distribution of Mothers based on their Religion
n=680

Sl. No.	Religion of Mother of the Index Child	Frequency	Percent
1	Hindu	129	19.0
2	Muslim	524	77.0
3	Christian	27	4.0
	Total	680	100

Source: Computed.

Table 6 indicates that 77% of mothers belonged to Muslim religion and 19% were Hindus and 4% were Christians.

Table 7: Distribution of Households according to Family Monthly Income
n=680

Sl. No.	Family Monthly Income (in rupees)	Frequency	Percent
1	2000 and below	202	29.7
2	2001 -5000	223	32.8
3	5001 – 10000	180	26.5
4	10001 – 20000	71	10.4
5	>20000	4	0.6
	Total	680	100

Source: Computed.

Table 7 shows that 32.8% of respondents had a family monthly income of Rs.2000-5000. 29.7% had income Rs. 2000 and below, 26.5% had income of Rs. 5001 to 10000, 10.4% households had income between Rs. 10001 and Rs. 20000 and 0.6% had monthly income more than Rs.20000.

Table 8: Distribution of Households based on Availability of Information Media
n=680

Sl. No.	Availability of Information Media	Frequency	Percent
1	No	22	3.2
2	Yes	658	96.8
	Total	680	100

Source: Computed.

Table 8 reports that 96.8% of households had information media available and 3.2% did not have any information media.

Table 9: Distribution of Households based on Source of Information regarding Immunization
n=680

Sl. No.	Source of Information regarding Immunization	Frequency	Percent
1	Media	5	0.7
2	Health personnel	125	18.4
3	Family and friends	63	9.3
4	Multiple source	487	71.6
	Total	680	100

Source: Computed.

Table 9 Regarding source of information related to immunization, 71.6% opined that they received information from multiple sources, 18.4% said they got it from health personnel, 9.3% received it from family and friends and 0.7% informed that they received the information from media.

Table 10: Distribution of Mothers according to their Attitude towards Immunization
n=680

Sl. No.	Mother's Attitude towards Immunization	Frequency	Percent
1	Positive attitude	674	99.1
2	Negative attitude	6	0.9
	Total	680	100

Source: Computed.

Table 10 reveals that 99.1% of mothers had positive attitude towards immunization and 0.9% had negative attitude towards immunization of their children.

3.2 Awareness of Mothers of Children Aged 11-23 Months in Malappuram District Regarding Vaccine Preventable Diseases (VPDs) and Immunization Programme.

Out of the various causes of morbidities and mortalities prevalent among children and reflected in the poor child health indicators, more than half are preventable. Health seeking behaviours of the primary caregiver, in this case considered to be the mother, play a significant role in alleviating these conditions leading to disease and death in children.

Maternal schooling or education is having a strong positive correlation with her health seeking behaviour and health practices for her child like immunization. The differential impact of maternal education and maternal knowledge on her health and behaviours for child health has been studied for important policy implications to indicate that even in communities where formal education is limited, it may be possible to impact child health and malnutrition through specific health education programs. Certain studies have found maternal knowledge is more effective in changing health related behaviours than maternal education (showing a significant difference of almost 20 percent). [1, 2]

Knowledge regarding Vaccine Preventable Diseases and immunization programme was assessed using knowledge test which included 20 items with a maximum score of 31. Knowledge scores obtained were arbitrarily classified into 3 subgroups namely 0-10 score as inadequate, 11-21 score as moderate and 22-31 score as adequate.

Table 11: Distribution of Mothers based on their Level of Knowledge regarding VPDs and Immunization
n=680

Knowledge level	Frequency	Percent
Inadequate	179	26.3
Moderate	395	58.1
Adequate	106	15.6

Total	680	100.0
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Source: Computed.

Table 11 shows that among 680 mothers 58% of mothers had moderate level of knowledge on VPDs and immunization and 26.3% of mothers had only inadequate knowledge and 15.6% mothers had adequate knowledge regarding VPDs and immunization. Findings of the study done by Sumathi Pati [3] observed that nearly 24% of mothers had inadequate or marginal health literacy and 76 % had adequate health literacy.

3.3 Association between Maternal Awareness regarding VPD and Immunization and their Socio- Economic

Table 12: Association between Maternal Awareness regarding VPD and Immunization and Maternal Characteristics viz: their Age, Education and Source of Information.

Variables		Maternal Awareness			X ² value	DF	P value
		Inadequate	Moderate	Adequate			
Age of mother	20 and below	17 (22.7)	39 (52.0)	19 (25.3)	14.247	6	0.027
	21-25	92 (24.6)	225 (60.2)	57 (15.2)			
	26-30	58 (30.4)	113 (59.2)	20 (10.5)			
	>30	12 (30)	18 (45)	10 (25)			
Education of mother	10th and below	109 (28.4)	239 (62.2)	36 (9.4)	38.929	6	0.000
	11th -12th	44 (19.5)	131 (58)	51 (22.6)			
	Degree	15 (32.6)	18 (39.1)	13 (28.3)			
	PG/Professional	11 (45.8)	7 (29.2)	6 (25)			
Source of information	Media	0 (0)	2 (40)	3 (60)	F 0.007		<0.05
	Health worker	23 (18.4)	80 (64)	22 (17.6)			
	Family/ friends	16 (25.4)	43 (68.3)	4 (6.3)			
	Multiple sources	140 (28.7)	270 (55.4)	77 (15.8)			
	No role	38 (58.5)	25 (38.5)	2 (3.1)			

Source: Computed. Figures in parenthesis are percentages.

In computing association between maternal awareness regarding VPD and immunization and their socioeconomic background with respect to maternal characteristics, chi square test is used. Since the frequencies are small in source of information, Fishers exact test was used to compute its association.

Table 12 shows the association between maternal awareness and age, education and source of information. The statistical analysis for age of mother using x² test shows that the x² value 14.247 with degree of freedom 6 is greater than table value and hence there is association. Mothers of younger age is noted to have better awareness.

Education of mother is also having association as the x² value 38.929 is also greater than table value. Health literacy increased with education and income levels, indicating that an improvement in health literacy of population in the following years can be achieved in Turkey with increased schooling rate and economic development. Adequate level of health literacy (according to HLQ) was found to be related to education and income level

Levinthal et al. (2008) [7] in their study, also found a positive correlation between health literacy and education, and stated that this positive affect was due to the connection between education and cognitive skills. Also supported by findings of Kawasaki R. (2015) [8] However, there are also studies showing that this relation is not always valid (Weiss, 2003) [9].

Fishers Exact test done for association between maternal awareness and source of information regarding immunization also

Table 14: Association between Maternal Awareness and Place of Residence and Family Income

Variables		Maternal Awareness			X ² value	DF	P value
		Inadequate	Moderate	Adequate			
Place of Residence	Rural	126 (22.0)	354 (61.7)	94 (16.4)	36.353	2	0.000
	Urban	53 (50.0)	41 (38.7)	12 (11.3)			
Family Monthly Income	2000 and below	57 (28.2)	122 (60.4)	23 (11.4)	F 0.0001		<0.05
	2001-5000	47 (21.1)	148 (66.4)	28 (12.6)			

Background

Education in general and health related knowledge in particular are determined by interplay of multiple factors – personal, family and community factors. Education is not only one of the most important socioeconomic factors that is known to significantly influence individual behavior and attitudes, but educational attainment is a fundamental indicator of a country's level of human capital development. Health literacy has been shown to be related with demographic and socio-economic factors in various studies (Ozdemir et al, 2010; Neilson Bohlman, Panzer, Kindig, 2004) [4,5,]. Education is influenced greatly by economic status & religion of an individual along with the overall economic situation of the community to which he/she belongs. (Anjaly) [6]

reveals that F value 0.009 is <0.05 and hence there is association.

Table 13: Association between Maternal Awareness and Occupation and Attitude towards Immunization

Variables		Maternal awareness			x ² value	DF	P value
		Inadequate	Moderate	Adequate			
Occupation	Housewife	173 (26.7)	378 (58.2)	98 (15.1)	2.834	2	0.242
	Working	6 (19.4)	17 (54.8)	8 (25.8)			
	Member	1 (7.7)	9 (69.2)	3 (23.1)			
Mothers' Attitude towards immunization	Positive	176 (26.1)	393 (58.3)	105 (15.6)	F 0.304	>0.05	No assoc.
	Negative	3 (50)	2 (33.3)	1 (16.7)			

Source: Computed. Figures in parenthesis are percentages.

It can be inferred from the above table that there is no association between maternal awareness and socio personal variables - maternal occupation and mothers' attitude towards immunization. Studies by Zahrani and Adebijyi [10] on knowledge, attitude and practice of mothers regarding immunization has identified association between knowledge and attitude of mothers regarding immunization.

3.4 Association between maternal awareness and their family characteristics

	5001-10000	50 (27.8)	98 (54.4)	32 (17.8)			
	10001-20000	23 (32.4)	25 (35.2)	23 (32.4)			
	>20000	2 (50)	2 (50)	0 (0)			

Source: Computed. Figures in parenthesis are percentages.
 Table 17 shows that the calculated value of χ^2 for association between maternal awareness and place of residence is 36.353 which is than greater table value and hence the null hypothesis is rejected and there is a significant association between maternal awareness and place of residence.

[12]. Sun, X., Shi, Y., Zeng, Q., Wang, Y., Du, W., Wei, N. Chang, C. (n.d.). Determinants of health literacy and health behavior regarding infectious respiratory diseases_ a pathway model_ BMC Public Health.

F test done to identify the association between maternal awareness and family monthly income shows that the F value is 0.000 which is less than 0.05 and hence there is significant association between maternal awareness and monthly income.

Study done by Kalkan [11] also found that maternal health awareness is related to income level. This is further established in study by Xinying Sun et al [12] who identified that even though income is related to maternal awareness, there existed only a weak relation.

Table 15: Association between Maternal Awareness and Household Characteristics

Variable	χ^2 value	df	P value
Type of family	1.509	4	0.825
Religion of mother	0.339	4	0.987

Source: Computed.
 In computing association between maternal awareness regarding VPD and immunization and their socioeconomic background with respect to their family characteristics, chi square test is used.

Table 18 reveals that, in statistical analysis chi square values of association between maternal awareness and their family characteristics in terms of type of family and religion of mother are less than the table value and hence the null hypothesis is accepted. That is there is no significant association between maternal awareness and selected socio economic background.

4. CONCLUSIONS

Based on the results of the present study, Low awareness level of mothers is a matter of worry since maternal awareness has a significant impact on immunization status of their children. Some of them don't know about the diseases for which their child is being immunized. Also many mothers don't know the timings of vaccination. It was further noted that maternal awareness has significant association with their age, education, family income and type of family. Parents do not perceive vaccine-preventable diseases as severe enough to warrant preventive action, or they do not perceive any particular benefit to their child's health from vaccination, and hence are likely to fail in completing immunization for their children. Lack of faith in vaccination leads to non-immunization of children.

5. REFERENCES

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