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Original Research Article

A study on immunization practices of mothers with children under five years of age in government district hospital Kalaburagi

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ABSTRACT

Background: Vaccines are the most powerful, safe and cost-effective interventions to prevent major illnesses that contribute to child mortality in the country. Negative parental perceptions of vaccination are also an important barrier to childhood vaccination.so this study was taken up to determine the knowledge, attitudes and practices (KAP) of mothers with children under five years of age, which will help the policy makers in implementing the immunization programme in a better way, to achieve >85% coverage.
Methods: A semi structured pre-validated questionnaire designed to assess the KAP about vaccination was administered to 360 mothers fulfilling the inclusion criteria. The KAP data between fully immunized and partially immunized/unimmunized children was compared.
Results: In our study, out of 360 children, 183 (50.8%) children were fully immunized, 155 (43.1%) children were partially immunized and 22 (6.1%) children were seen unimmunized. Mothers were the main decision makers regarding vaccination of their children. Majority, 183 (50.3%) mothers identified vaccine preventable disease as polio. On comparing the KAP data between mothers of fully immunized children and mothers of partially immunized/unimmunized children, mothers of fully immunized children found to have favourable knowledge, attitudes, perceptions and practices towards vaccination.
Conclusions: We found significant lacunae in the KAP of mothers towards childhood vaccination, especially among mothers of partially immunized and unimmunized children.so, health education is also an essential component that can go a long way in improving the prevailing scenario of immunization in our country.

Keywords: Immunization, Practices, Mothers

INTRODUCTION

One of the most significant contributions of the medical fraternity to mankind is the advent of vaccines. They are the most powerful, safe and cost-effective interventions to prevent major illnesses that contribute to child mortality in the country, particularly in environments where malnourished children, overcrowding, poverty and illiteracy is prevailing. In a country like India, a large chunk of the population lives in rural areas, where mothers are illiterate and have numerous myths about vaccination, thus resulting in children being unimmunized and susceptible and hence causes a serious policy concern.[1]

Knowledge (K), positive attitudes (A) and appropriate practices (P) about vaccination hence becomes one of the main tools to reduce the incidence of vaccine preventable diseases (VPDs) thus reducing childhood mortality and morbidity.[1]

In May 1974, the WHO launched the expanded immunization programme (EPI) globally, with focus on prevention of 6 vaccine-preventable diseases by the year 2000. In 1978, EPI was launched in India and it was re-designated as the universal immunization programme (UIP) in 1985, with a goal to cover at least 85% of infants.[2]

In 2010, It was noted that 19.3 million children had been incompletely vaccinated, leaving them susceptible to vaccine preventable disease mortality and morbidity. Approximately 50% of all under vaccinated children live in three countries, India being one of them. In 2010 it was estimated that 1.7 million children died from VPD.[3]

The present situation of under immunization is not only seen in the rural areas of the country, but also in the urban areas as the migration of workers to the urban areas are occurring at a rapid rate, and these are the areas with illiteracy, poverty, overcrowding and disease.[4]

National family health survey-5, India reports that only 72.0% of children aged 12-23 months received all age-appropriate vaccinations in Karnataka and only 61.6% of children aged 12-23 months received all age- appropriate vaccinations in Gulbarga.[5]

Main reasons identified for poor vaccination coverage in India includes inadequacy of community participation in routine immunization and information education and communication activities.[3] Negative parental perceptions of vaccination are also an important barrier to childhood vaccination.[6]

Therefore, it is important to know about the variables that influence parental decisions to vaccinate their children and plan measures to overcome these barriers. To know about the variables, beliefs and behaviour of parents it is necessary to conduct a KAP study. So, this study was planned to assess the KAP of mothers with children under five years of age about vaccination and to compare the KAP data between completely immunized and partially immunized/ unimmunized children.

In the current scenario in India, it becomes very important to find the factors which influence routine immunization, which will help the planners to implement the immunization programme in a better way, in order to achieve >85% coverage.

METHODS

This cross-sectional descriptive study was conducted over a period of 3months (from July 2023 to September 2023) on 360 mothers attending department of paediatrics, Gulbarga institute of medical sciences, Kalaburagi having children under five years of age. The study was conducted after obtaining the ethics committee approval from institutional ethics committee. Informed consent was obtained from all eligible participants after explaining the objectives and nature of this study in their own language. A semi structured pre-validated questionnaire designed to assess the KAP about vaccination was administered to all the mothers of children under five years of age. Mothers with neurologically abnormal child and mothers with children on chemotherapy /immunosuppressant therapy and mothers of children under five years of age who did not give consent for the study were excluded from the study. The data collected through this questionnaire includes: socio demographic details of parents and children, place of vaccination, immunization status of their child/children, reason for not taking vaccine, decision makers for taking vaccination, knowledge of vaccines and the diseases they prevent, age of vaccine administration, adverse effects related to vaccination, the source of the information regarding vaccination and data related to the mother's attitude and practices towards vaccination.

Statistical data was analyzed by using statistical package for social sciences (SPSS, version 20.0). If $p<0.05$, it is considered as statistically significant.

RESULTS

In the study, the mean age of children was 2.12 years, the mean age of mothers (participants) was 26.81 years. Out of 360 children in the study, males were 191 (53.1%) and females were 169 (46.9%). Table 1 shows demographical profiles wise distribution of mothers. Majority of mother's 266 (73.9%) residential area was rural and 94 (26.1%) mother's residential area was urban. Majority of the study participants 165 (45.8%) were belonging to middle class.

Out of 360 participants, 162 (45.0%) of participants (mothers) were illiterate, Majority of mother's occupation 225 (62.5%) was found to be house wife.

In the study, it was observed that, out of 360 children, 183 (50.8%) children were fully immunized, 155 (43.1%) children were partially immunized and 22 (6.1%) children were seen unimmunized.

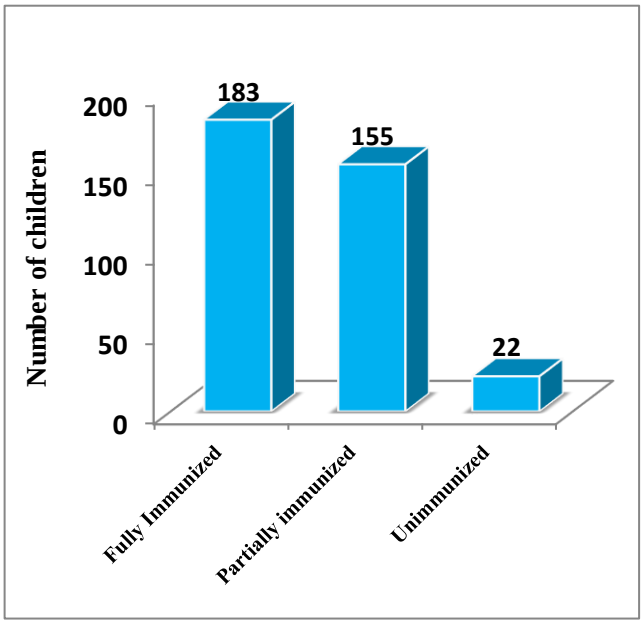

Figure 1: Immunization status wise distribution of children.

Table 2 shows Reason for not taking vaccine. Out of 177 (49.2%) partially and unimmunized children's mothers, 53 (29.9%) had given the reason for not taking vaccination as lack of awareness regarding vaccination schedule, followed by 37 (20.9%) said unawareness regarding Place/time of immunization and 30 (17.0%) said child was ill so not brought for immunization.

In study, for majority 248 (68.9%) children, mothers were the decision makers for vaccination, for 62 (17.2%) children both mother and father were the decision makers for vaccination, and for 50 (13.9%) children's fathers were the decision makers. All 360 mothers said place of vaccination preferred by them was government institute.

Figure 2 shows source of information regarding vaccination, out of 360 mothers, majority 212 (58.9%) of mothers had got the source of information regarding vaccination from health care workers (ANM/AWW) and 98 (27.2%) participants got the source of information regarding vaccination from doctors and 29(8.1%) participants got information from family/ neighbours/ relatives.

In study, majority, 183 (50.3%) mothers identified vaccine preventable disease as polio followed by 50 (13.9%) mothers identified measles, 40 (11.1%) of them identified tuberculosis and 20 (5.6%) of them identified diphtheria, Figure 3 shows VPDs identified by mothers.

Table 3 shows comparison of socio-demographic profile with immunization status, study revealed that, there was statistically highly significant association between gender of children (p=0.003), educational status of mother (p=0.000) and socio-economic status (p=0.000) with immunization status. That is significant number of male children, children having mothers with good education and children having mothers with good socio- economic status were fully immunized when compared to the female children, children having mothers with poor education status and children having mothers with lower socio-economic status.

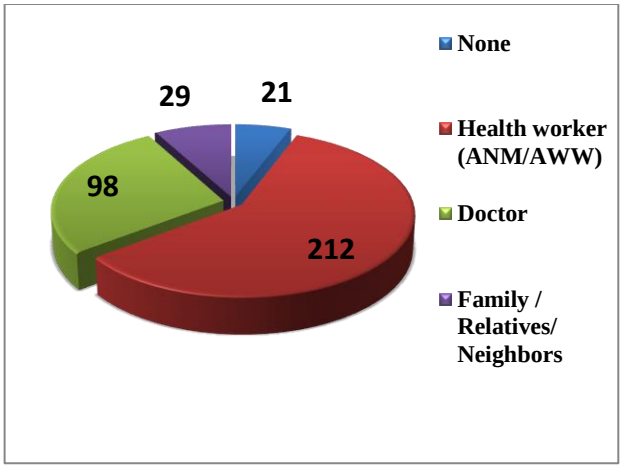

Figure 2: Source of information regarding vaccination.

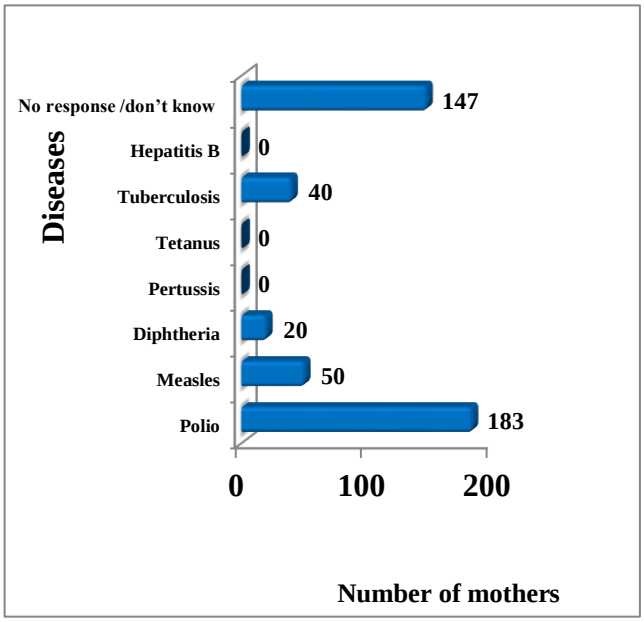

Figure 3: Vaccine preventable diseases identified by mothers.

Table 1: Demographical profiles wise distribution of study participants.

Variables		No. of mothers	Percentage (%)
Age of children (in years)	≤2	162	45.0
	2-4	158	43.9
	4-5	40	11.1
	Mean±SD	2.12±1.63	-
Gender of children	Male	191	53.1
	Female	169	46.9
Area of residence	Urban area	266	73.9
	Rural area	94	26.1
Socio-economic status (B. G. Prasad classification)[7]	Upper class	0	0.0
	Upper middle class	12	3.4
	Middle class	165	45.8
	Lower middle class	124	34.4
	Lower class	59	16.4

Continued.

Variables		No. of mothers	Percentage (%)
Age of mother (in years)	≤25	133	36.9
	26-30	198	55.0
	>30	29	8.1
	Mean±SD	26.81±6.78	-
Mother education	Illiterate	162	45.0
	Primary	110	30.6
	Secondary and degree	88	24.4
Mother occupation	House wife	225	62.5
	Labour	54	15.0
	Employee	81	22.5

Table 2: Reason for not taking vaccine.

Reason for not taking vaccine	N	Percentage (%)
Lack of awareness regarding vaccination schedule	53	29.9
Unawareness regarding place/time of immunization	37	20.9
Fear of vaccination	19	10.7
Unaware of importance of immunization	16	9.1
Place of immunization too far	8	4.5
Time of immunization inconvenient	8	4.5
Vaccinator absent	4	2.3
Child ill not brought	30	17.0
Child ill brought but vaccine not given	2	1.1
Total	177	100

Table 3: Comparison of socio-demographic profile with immunization status.

Socio-demographical profile	Categories	Total	Fully immunized, (n=183) (%)	Partially immunized/ unimmunized, (n=177) (%)	Fisher exact test chi-square test, p value
Gender of children	Male	191	111 (58.1)	80 (41.9)	X^2=8.632, p=0.003, HS
	Female	169	72 (42.6)	97 (57.4)	
Educational status of mother	Illiterate	162	37 (22.8)	125 (77.2)	X^2=113.91, p=0.000, HS
	Primary	110	64 (58.2)	46 (41.8)	
	Secondary and degree	88	82 (93.2)	6 (6.8)	
Socio-economic status (B. G. Prasad classification)[7]	Upper class	0	0 (0.0)	0 (0.0)	P=0.000, HS
	Upper middle class	12	12 (100)	0 (0.0)	
	Middle class	165	138 (83.6)	27 (16.4)	
	Lower middle class	124	29 (23.4)	95 (76.6)	
	Lower class	59	4 (6.8)	55 (93.2)	

HS-highly significant

Table 4: Comparison of KAP with immunization status of children.

Variables	Questions	Fully immunized, (n=183)		Partially immunized/ unimmunized, (n=177)		Fisher exact test p value
		Yes	No/don't know	Yes	No/don't know	
Knowledge	Does the mother know the reason to vaccinate a child?	173 (94.5)	10 (5.5)	31 (17.5)	146 (82.5)	0.0001 HS
	Does the mother know correct age to start immunization?	171 (93.4)	12 (6.6)	35 (19.8)	142 (80.2)	0.0001 HS
	Are vaccines harmful?	0 (0.0)	183 (100)	0 (0.0)	177 (100)	
	Does the child with fever be vaccinated?	4 (2.2)	179 (97.8)	0 (0.0)	177 (100)	
	Does the child with cold be vaccinated?	4 (2.2)	179 (97.8)	4 (2.3)	173 (97.7)	

Continued.

Variables	Questions	Fully immunized, (n=183)		Partially immunized/ unimmunized, (n=177)		Fisher exact test p value
		Yes	No/don't know	Yes	No/don't know	
Attitude	Do u think vaccination is important?	172 (94.0)	11 (6.0)	36 (20.3)	141 (79.7)	0.000 HS
	Is it important to follow vaccination schedule?	179 (97.8)	4 (2.2)	28 (15.8)	149 (84.2)	0.000 HS
	Do you prefer to receive vaccination in a government institute?	183 (100)	0 (0.0)	177 (100)	0 (0.0)	
	Are u satisfied with the way in which the vaccination is provided?	183 (100)	0 (0.0)	173 (97.7)	4 (2.3)	0.989 NS
Practice	Did side effects appear after receiving vaccination?	172 (94.0)	11 (6.0)	152 (85.9)	25 (14.1)	
	Did you inform the doctor/ health care worker about the side effect seen in your child?	162 (88.5)	21 (11.5)	120 (67.8)	57 (32.2)	0.001 HS

*NS=not significant, S=significant, HS=highly significant.

Table 4 shows comparison of KAP of mothers regarding vaccination with immunization status of children, on analysing the knowledge of the mothers towards vaccination, about 94.5% mothers of fully immunized children and 17.5% mothers of partially immunized/unimmunized children knew the reason to vaccinate their children. Among 93.4% mothers of fully immunized children and 19.8% mothers of partially immunized/unimmunized children knew the correct age to start immunization. All participants had knowledge that none of the vaccines are harmful. About 97.8% mothers of fully immunized children and 100% mothers of partially immunized/unimmunized children denied vaccinating their children when the child was found to have fever.

On analysing the attitude of the mothers towards vaccination, 94% mothers of fully immunized children and 20.3% mothers of partially immunized/ unimmunized children thought that vaccination is important. The 97.8% mothers of fully immunized children and 15.8% mothers of partially immunized/unimmunized children opined that it is important to follow vaccination schedule. This also showed a high statistical significance and further highlights the cause of under immunization and poor vaccination coverage in our country.

On analysing the practices of the mothers towards vaccination, about 94.0% mothers of fully immunized children and 85.9% mothers of partially immunized/unimmunized children reported to have side effects following vaccination. And only 88.5% mothers of fully immunized children and 67.8% mothers of partially immunized/unimmunized children reported these side effects to doctor/health care workers.

On net analysis mothers of fully immunized children had favourable KAP when compared to mothers of partially immunized/unimmunized children. There was a statistically significant difference ($p<0.01$) between mothers of fully immunized children and mothers of partially immunized/ unimmunized children when the KAP data regarding vaccination was assessed and this is the reason for increase in incidence of VPDs and difficulty in eradication of VPDs.

DISCUSSION

The immunization coverage status of the study was far lower than the target which had to be achieved (85% coverage). The immunization coverage found by this study was 50.8%. Assessment of knowledge of mothers about immunization showed wide gap in the knowledge between the mothers of fully immunized children and mothers of partially immunized/unimmunized children. When the socio demography was assessed, a low literacy level and lower socio-economic status was found in mothers of partially immunized/unimmunized children when compared with mothers of fully immunized children. This was similar to the findings of study done by Bholanath et al which found that maternal education and socioeconomic status were significant independent predictors of immunization status.[8] This was significant and needs to be addressed in order to improve knowledge about vaccination strategies and its advantages, as most mothers are the primary caretakers and decision makers regarding vaccination in their families. Singh et al had reported in their study that mothers had fair Knowledge regarding the need for immunization but had poor knowledge regarding VPDs.[9] In a study by Kapoor et al it was found that awareness and knowledge about VPDs increases with education status of mothers.[10] In a cross sectional study conducted by Siddiqui et al in Karachi significantly better vaccination status was found among children with both parents being literate as compared to children with both parents illiterate.[11] Our study revealed

that anganwadi workers (AWW) and auxiliary nurse midwives (ANM) were the main source of information regarding vaccination and it is this population that needs to be adequately trained so that they can spread the awareness to the doorstep of the population. This was in concordance with the study by Bholanath et al. [4]

In our study, all mothers preferred vaccination services in government health facilities. Hamid et al in their study have reported that rural mothers preferred and trusted government health facilities.[12] Majority of the mothers in the study identified polio as the VPD, which is similar to the results observed in the study conducted by Mahalingam et al.[3] Mothers inability to name or identify diseases other than poliomyelitis indicates that health education should be emphasized to enhance knowledge about the complete immunization programme. Majority of the mothers of partially immunized and unimmunized children had given the reason for not taking vaccination as lack of awareness regarding vaccination schedule, which is consistent with the findings of the study done by Angadi et al.[13]

Knowledge about vaccination was assessed and it was found that a significant difference was seen between mothers of fully immunized children and mothers of partially immunized/unimmunized children regarding the importance of vaccination as well as the age of initiation and completion of vaccination as per schedule. Further into the knowledge about vaccination, most of the mothers of fully immunized children and mothers of partially immunized/unimmunized children believed vaccines were safe, but a large proportion of mothers of fully immunized children and mothers of partially immunized/unimmunized children would delay vaccinating their child in the circumstances of simple childhood illnesses like fever and cold. In order to attain 100% vaccination coverage in the country, these myths must be abolished and mothers must be assured regarding the safety of vaccines and mothers should be educated about the benefits of vaccinating their children.

Our study has found a significant difference in mothers of fully immunized children and mothers of partially immunized/unimmunized children in terms of their KAP regarding vaccination. The mothers of fully immunized children were more aware and showed favourable attitude and practices regarding vaccination than mothers of partially immunized/unimmunized children. This could be attributed to the better literacy status of mothers of fully immunized children. It must also be kept in mind that since the majority of the mothers are the main caregivers, decision makers and informants regarding immunization, so ensuring good education to the girl child and knowledge about vaccination integrated into the antenatal care of mothers, the immunization coverage can be improved and the goals of eradication of vaccine preventable diseases like polio may be accomplished.

This study has some limitations, this study was a cross-sectional study conducted in the hospital, so the study conducted in the community would be able to give better information regarding immunization practices of mothers than the study conducted in the hospital.

CONCLUSION

We found significant lacunae in the KAP of mothers towards childhood vaccination especially among mothers of partially immunized and unimmunized children. A significant number of mothers of partially immunized and unimmunized children were unaware about the vaccination and its implications. Although a vast majority of the population know the importance of immunization, lack of knowledge regarding vaccination schedule and failure of the authorities in educating the target population for completing the schedule, has led to a large proportion of the children being partially immunized. These are the problems which need to be addressed in order to achieve vaccination coverage of 100%. Health care workers at the grass root level must be trained and through them the importance of childhood vaccination should be disseminated. All policy makers and health care providers, should see to that, mere providing the resources for immunization alone is not serving the purpose so, health education is also an essential component that can go a long way in improving the prevailing scenario of immunization in our country.

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REFERENCES

1. Pandey RP, Yazbeck AS. What's in a country average? Wealth, gender and regional inequalities in immunization in India. Soc Sci Med. 2003;57(11):2075-88.
2. Park K. Park's textbook of Preventive and Social Medicine. 22nd Edition. Jabalpur (India): Banarsidas Bhanot Publishers. 2009.
3. Mahalingam S, Soori A, Ram P, Achappa B, Chowta M, Madi D. Knowledge, attitude and perceptions of mothers with children under five years of age about vaccination in Mangalore, India. Asian J Med Sci. 2014;5(4):52-7.
4. Nath B, Singh JV, Awasthi S, Bhushan V, Kumar V, Singh SK. KAP Study on Immunization of Children in a City of North India-A 30 Cluster Survey. Online J Health Allied Sci. 2008;7(1):2.
5. National Family Health Survey (NFHS-5). Available at: http://rchiips.org/nfhs/NFHS-5Report_KA.shtml. Accessed on 5 July 2024.
6. Heininger U. An internet based survey on parental attitudes towards immunization. Vaccine. 2006;24(37-39):6351-5.

7. Mangal A, Kumar V, Panesar S, Talwar R, Raut D, Singh S. Updated BG Prasad socioeconomic classification, 2014: A commentary. Indian J Public Health. 2015;59:42-4.
8. Nath B, Singh JV, Awasthi S, Bhushan V, Kumar V, Singh SK. A study on determinants of immunization coverage among 12-23 months old children in urban slums of Lucknow district, India. Indian J Med Sci. 2007;61:598-606.
9. Singh ML, Badole CM, Singh MP. Immunization coverage and knowledge and practice of mother regarding immunization in rural areas. Indian J Public Health. 1994;38(3):103-7.
10. Kapoor R and Vyas S. Awareness and Knowledge of mothers of under five children regarding immunization in Ahmedabad. Healthline. 2010;1(1):12-5.
11. Siddiqui N, Siddiqi AE, Nisar N, Khan A. Mothers knowledge about EPI and its relation with age-appropriate vaccination of infants in peri-urban Karachi. J Pak Med Assoc. 2010;60(11):940-4.
12. Hamid S, Andrabi SAH, Fazli A, Jabeen R. Immunization of children in a rural area of North Kashmir India: a KAP study. Online J Health Allied Scs. 2012;11(1):10.
13. Angadi MM, Jose AP, Udgiri R, Masali KA, Sorganvi V. A study of knowledge, attitude and practices on immunization of children in urban slums of Bijapur city, Karnataka, India. J Clin Diagn Res. 2013;7(12):2803-6.

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