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Assess the Utilization of Immunization Services among Under-five Children

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ABSTRACT

An explanatory study was done to assess the used of immunization among 110 under-five children in Aikkaranad Grama Panchayath. The objectives of the study were to assess the utilization of immunization among under-five children and find the association between utilization with demographic variables. Convenient sampling method was utilized to select 110 under-five children. Data collection was done using a structured tool. Collected data were examined using descriptive statistics, and shown in tables and graphs. The study findings revealed that out of 110 samples, all under-five children included in this study were fully immunized (100%) up to the age irrespective of any socio-demographic variable. This study determined that 110 under-five samples were fully immunized up to the age because of adequate mother's awareness about immunization, appropriate utilization of cost-effective community health services nearby and effective health services provided by community health workers.

Keywords: *immunization services, under-five children, utilization*

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INTRODUCTION

Immunization is one of the most cost-effective public health interventions [1]. A vaccine is an immunobiological substance designed to generate specific protection against a given disease. Over the last century, vaccination has been the most effective medical strategy to control the infectious diseases [2]. The historical success of eradicating the dreaded disease, smallpox, prompted World Health Organization (WHO) to ask its member countries to launch immunization against six vaccine-preventable diseases (VPDs) in its national immunization schedule. In May 1974, the WHO launched the Expanded Immunization Programme (EPI) globally, with focus on prevention of six VPDs, namely diphtheria, whooping cough, tetanus, polio, tuberculosis and measles by the year 2000. In India, EPI was released in 1978 and it was re-designated as the Universal Immunization Programme (UIP) in 1985, with a goal to cover at least 85% of infants [3].

Worldwide, each year 130 million children are born, of which 91 million are in the developing countries. There are more than 19 million unvaccinated or under-

vaccinated children in the world placing them at serious risk of possibly fatal diseases. About 10 million children under the age of five years die every year and over 27 million infants in the world do not get full routine immunization [1]. Around 3 million children die in each year of VPDs with a disproportionate number of children residing in developing countries [4].

Growing access to immunization is critical to accomplishing the sustainable development goals. Routine immunization is a developing block of strong primary health care and universal health coverage; it provides a point of contact for health care at the beginning of the life and offers every child the chance at a healthy life from the start [5]. One of the key and most cost-effective health interventions is achieving 100% immunization status. It was prepared to attain the goal of Health For All. Immunization contributes substantially to the achievement of millennium development goal number 4 and is one of the eight elements of primary health care. Effective consumption of immunization services is associated with improved child health outcomes. WHO targets immunization coverage of 90% for urban areas and 80% for rural areas [6, 7].

Morbidity and mortality caused by diseases that are preventable by vaccine are still very high in many developing countries across the world. Fifteen percent of deaths in children under five years of age are attributed to these diseases [8]. Immunization averts 2–3 million deaths annually. An extra 1.5 million deaths could be avoided if global vaccination coverage improves. Complete vaccination of each and every child is the current need to reduce mortality and morbidity of under-five in India [9]. So a descriptive study was conducted to assess the utilization of immunization among 110 under-five children in Aikkaranad Grama Panchayath. The objectives of the study were to assess the utilization of immunization among under-five children and find the association between utilization with demographic variables [10].

METHODS

The research design used for the study was descriptive survey study. The study was conducted in selected areas of Aikkaranad Grama Panchayath**.** By using convenient sampling technique, 110 under-five children were selected. Data were collected using three tools: Tool 1: demographic performa, and Tool 2: checklist to assess utilization of immunization. Validity of the tool was assessed by giving tools to five experts in the field of nursing and medicine. Modifications were done as per the suggestions given by the experts. Test–retest method r = (0.84) was used to assess the reliability of the tools**.** Obtained permission from President of Aikkaranad Grama Panchayath, and informed consent was taken from the subjects. A pilot **s**tudy was conducted among 20 mothers to check the feasibility and practicability of the study. The study was sound to be feasible.

RESULTS

Section A: Distribution of Socio-demographic Variables of Child

The data given in Table 1 showed that majority of the 110 subjects (25.5%) were in the age group of 4 years and majority of the subjects (55.5%) were females. With respect to birth order, majority of subjects (48.2%) were second child of the family. With regard to the education status, 64.5% of the mothers were graduates and most of the subjects (90%) belong to nuclear family. Majority of the subjects' family (41.66%) earns monthly income between Rs.18,498/- and 13,996/-.

Section B: Assess the Utilization of Immunization Services Among Under-Five Children

As shown in Table 2, all the subjects (110) were fully immunized (100%) up to their age. The vaccines, such as BCG, OPV, Hep B, DPT, IPV, MMR vaccine and Vit A, have full immunization coverage for their age with respect to immunization card. All the subjects included in the study had taken and aware of all the nine doses of Vit A vaccine with a gap of 6 months up to their age.

Table 1. *Frequency and percentage of demographic variables of under-five children and their mothers (n = 110).*

Sl. no	Demographic variables	Frequency(*f*)	Percentage(%)
1.	**Age of the child (in years)**		
	• Up to 1 year	08	07.6
	• 1 year	15	13.3
	• 2 years	18	16.4
	• 3 years	17	15.4
	• 4 years	28	25.5
	• 5 years	24	21.8
2.	**Sex of the child**		
	• Male	49	44.5
	• Female	61	55.5
3.	**Birth order of the child**		
	• First child	52	47.3
	• Second child	53	48.2
	• Third child	05	04.5
4	**Age of the mothers (in years)**		
	• 18–22 year	02	01.8
	• 23–27 years	13	11.8
	• 28–32 years	50	45.5
	• 33–37 years	37	33.6
	• 38–42 years	08	07.3
5	**Religion**		
	• Hindu	66	60.0
	• Christians	44	40.0
6	**Education status of the mother**		
	• Professional	03	02.7
	• Graduate/PG	71	64.5
	• Intermediate/ diploma	21	19.2
	• High school certificate	15	13.6
7	**Type of family**		
	• Nuclear	99	90.0
	• Joint	11	10.0
8	**Occupation of the mother**		
	• Professionals	34	30.9
	• Semi-professionals	06	05.5
	• Clerical/shop owner	04	03.6
	• Skilled worker	02	01.8
	• Semi-skilled	02	01.8
	• Unemployed	62	56.4
9	**Monthly family income** (Based on Kuppuswamy's Scale)		
	• Above 36,997	10	20.8
	• 18,498–13,996	20	41.6
	• 13,874–18,497	05	10.4
	• 9249–13,873	04	08.3
	• 5557–9248	05	10.4
	• 1866–5546	04	08.5

Table 2. *Utilization of immunization services in under-five children (n = 110).*

SI. no	Age	Name of the vaccine	Total no. of children (*n*)	Frequency(f)	Percentage(%)
1	At Birth	BCG	110	110	100
		OPV(0 DOSE)	110	110	100
		HEP. B(BIRTH DOSE)	110	110	100
2	6 Week	OPV(1st DOSE)	110	110	100
		IPV(1st DOSE)	110	110	100
		PENTA(1st DOSE)	110	110	100
3	10 Week	PENTA(2ndDOSE)	110	110	100
		OPV(2nd DOSE)	110	110	100
4	14 Week	PENTA(3rd DOSE)	105	105	100
		IPV(2nd DOSE)	105	105	100
		OPV(3rd DOSE)	105	105	100
5	9 Month	MR /MMR VACCINE	102	102	100
		VITAMIN A(1st DOSE)	102	102	100
6	18 Month	DPT(1stBOOSTER)	87	87	100
		OPV	87	87	100
		VITAMIN A(2ndDOSE)	87	87	100
7	24 Month	VITAMIN A(3rdDOSE)	72	72	100
8	30 Month	VITAMIN A(4thDOSE)	53	53	100
9	36 Month	VITAMIN A(5thDOSE)	49	49	100
10	42 months	Vitamin A (6th dose)	42	42	100
11	48 months	Vitamin A (7th dose)	40	40	100
12	54 months	Vitamin A (8th dose)	38	38	100
13	5 years	Vitamin A (9th dose)	30	30	100
		DPT	30	30	100

Section C: Find the Association Between Utilization of Immunization Services with Demographic Variables

There is no significant association between any socio-demographic variable such as age, gender, birth order of child, religion, education, occupation, type of family, number of children and socio-economic status.

DISCUSSION

A cross-sectional study was done among 456 pre-school anganwaadi children to assess the immunization coverage among pre-school children attending anganwaadi in Kannur district in the year 2017 [11]. The data were collected by interviewing the mothers using standardized questionnaire. The study showed that, out of 429 children, 94.1% were fully immunized, 25 (5.5%) were partially immunized and 2 (0.4%) were un-immunized [12, 13]. In this study, out of 110 samples, all under-five children contained in this study were fully immunized (100%) up to the age.

A descriptive hospital-based study was conducted in 1000 under-five children. Subjects were selected by random sampling methods. Immunization status of these children, their socio-demographic factors and immunization status were analyzed, and cause for partial and non-immunization were also studied [14]. The result showed that all parameters studied had significant correlation between low maternal education, parental education, low maternal age (15–20 years), agriculture, higher birth order, joint family, low socio-economic status, rural population , age group 1–5 years, total number of children >2 with partial immunization [15, 16]. In this study,

it is found that there is no significant association between any socio-demographic variable such as age, gender, and birth order of child and age, religion, education, occupation, type of family, number of children, and socio-economic status of mother.

CONCLUSION

To reduce morbidity, mortality and disability due to VPDs, the WHO recommends eight different vaccine antigens in four vaccine formulation free of charge to the vaccine through the Division of Vaccine and Immunization (DVI). The targeted VPDs and the WHO adapted immunization schedules are as follows: tuberculosis vaccine (administered at birth), poliomyelitis (at birth, 6, 10, and 14 weeks), diphtheria, pertussis, tetanus, hepatitis B and hemophilus type B (at 6, 10 and 14 weeks), and measles at 9 months. A child who has taken all the age-appropriate vaccines according to the National Immunization Schedule was considered as fully immunized. A child who has taken some of the recommended vaccines, but not all, was considered partially immunized, and a child who has not taken any vaccines was considered non-immunized.

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