Research Article

IDENTIFY THE CORRELATION BETWEEN KNOWLEDGE AND ATTITUDE ON COLD CHAIN AMONG HEALTH CARE PERSONNEL

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ABSTRACT

Immunization is one of the most powerful and cost-effective of all health interventions. It prevents debilitating illness and disability, and saves millions of lives every year. It is also key to achieving the Millennium Development Goals (MDGs) – commitments made by world leaders in 2000 to reduce poverty and improve human development. The contribution of immunization is especially critical to achieving the goal to reduce deaths among children under five years old (MDG 4).1 The cold chain system introduced by World Health Organization (WHO) is a system to transport and store vaccine in the potent condition starting from the time it is manufactured to the time it is administered to patients in specified temperature range of (2-8℃). In many countries, studies found that improper vaccine storage and handling were cited as possible causes of many measles outbreaks in early 1990's)1. In Malaysia, measles cases increased drastically with incidence rates of 11.48 and 26.59 per 100,000 populations despite wide coverage of immunization in 1999 (86.6%) and 2000 (88%)). In these two years, measles outbreak took place all around the country including urban and rural areas. The Ministry of Health has suggested that the outbreak were due to primary vaccine failure and failure to vaccinate, causing accumulation of susceptible individuals.2

INTRODUCTION

Children are one third of our population and all of our future. Children are very precious beings. They are innocent, transparent and open to life fully. All the honest truth telling there is in the world is done by children.[4]"Health for All" can be achieved by implementing primary preventive measures like the immunization which is carried out by the health workers, who form the huge work force in the country. So, it becomes important to understand the knowledge level and practices of this huge workforce regarding the important preventive measure, i.e., Immunization. Immunization is a cornerstone of public health and one of the most costeffective interventions available. It has contributed significantly to the decline in child morbidity and mortality in recent decades.5 Biology products will experience potential loss by natural with times change. This process is irreversible and will be storage practice recommendation is not followed. Lack of vaccine potency will reduce the response immunity and create inadequate protection against disease .[6] Vaccines are recognized as a powerful public health tool that is able to save around 3 million lives every year and immunization activity has been identified among the most cost effective health interventions. A proper maintenance of vaccine cold chain is important to achieve full benefit of childhood immunization, apart from high remarkable childhood immunization coverage and timely administration of vaccines. Ensuring an adequate knowledge among healthcare workers in maintaining vaccine cold chain system is crucial to ensure the efficacy of vaccines being administered and the effectiveness of the national immunization programmed.[7] Immunization is one of the most cost effective health investments and proven tool for controlling and eliminating life-threatening infectious diseases (known as vaccine preventable diseases). Globally it is estimated to avert over between 2-3 million deaths each year. India's immunization program is one of the largest in the world in terms of quantity of vaccines used, beneficiaries, number of vaccine sessions organized, the geographical spread and diversity of area. Regrettably, however, full immunization coverage in the country continues to be sub-optimal, standing at a mere 60% at the national level. Child immunization is among the most cost-effective ways of preventing premature child deaths, and the potency of vaccines, crucial for vaccine efficacy, is dependent on effective management of the cold chain at all levels of vaccine handling. There is a real danger of vaccines losing their potency at the distal level that is at the sub centre level even if they were potent on arrival. Relevant training for those handling the cold chain, improving the

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maintenance condition of refrigerator and introduction of cold chain monitoring devices are recommended.[8]

Research Elaborations

Research Approach

A research approach indicates the researcher what data to collect, how to collect and how to analyze it. It also suggests possible conclusions to be drawn from the data.In the present study, focusing the nature of the research problem and to fulfill the objectives, a survey research approach was considered to carry out the study.

Research Design

The research study is an overall plan for addressing a research questions. The research design of a study spells the basic strategies that researcher adopts to develop evidence that is accurate and interpretable. As this study involves evaluating the knowledge and attitude of health care personnel's on cold chain, a descriptive, correlation research design was used for the present study.

Variables

Variables are quantities, properties or characteristics of person, things situations that changes or varies. Two types of variablesare identified in this study. They are Research variable and Socio-demographic variables.

Research Variable

Research variable is descriptive, exploratory comparative and qualitative research studies, variables are observed or measured in natural setting as they exist, without manipulating the effect of intervention or treatment. In the present study, knowledge and attitude of health care personnel's on cold chain.

Socio-Demographic Variable

Socio-demographic variables are the preexisting characteristics of study participants, which the researcher simply observes or measures. In this study, the selected socio-demographic variables are age in years, gender, education of health workers, total clinical experience, total experience in immunization clinic, in-service education on cold chain.

RESULTS

In the present study, Majority of the subjects, 29 (29.00%) belonged to the age group of 26-30 years and only 20 (20.00%) belonged to the age group of 36-40 and 76 (76.00%) were females and only 24 subjects (24.00%) were males. Majority of subjects had ANM qualification 42 (42.00%) and only 12 (12.00%) had P.B.B.Sc (N) qualification. 50 (50.00%) of the subjects had 1-5 years clinical experience and only 08 (08.00%) had 16-20 years clinical experience. Majority of subjects had 69 (69.00%) had 0-5 years' experience in immunization clinic and only 10 subjects (10.00%) had 11-15 years' experience in immunization clinic. 53 subjects had (53.00%) undergone in service education on cold chain and 47 (47.00%) did not undergo in service education. Majority of subjects 89 (89.00%) were working in private hospital and only 11 (11.00%) at government hospital.

Table 1 Frequency and percentage distribution of subjects according to their selected socio-demographic variables.n=100

Sr. No	Selected Socio - demographic Variables	Frequency f	Percentage %
	Age in years		
1.	a) 20 - 25	28	28.00
	b) 26 - 30	29	29.00
	c) 31 - 35	23	23.00
	d) 36 - 40	20	20.00
	Gender		
2.	a) Male	24	24.00
	b) Female	76	76.00
	Educational qualification		
	a) ANM	42	42.00
3.	b) GNM	30	30.00
	c) B.Sc.(N)	16	16.00
	d) P.B. BSc (N)	12	12.00
	Total clinical experience in years		
4.	a) 01 - 05	50	50.00
	b) 06 - 10	24	24.00
	c) 11 - 15	18	18.00
	d) 16 – 20	08	08.00
	Total experience in immunization clinic in years		
5.	a) 00 - 05	69	69.00
	b) 06 - 10	21	21.00
	c) 11 - 15	10	10.00
	In service education on cold chain		
6.	a) Yes	53	53.00
	b) No	47	47.00
	Area of work		
7.	a) Government Hospital	11	11.00
	b) Private Hospital	89	89.00

Table 2: Indicates that,

In knowledge score majority of the subjects 83 (83.00%) had good knowledge and 17 subjects (17.00%) had average knowledge and none of them (00) had poor knowledge

Table 2 Frequency and percentage distribution of knowledge scores of subjects on cold chain.n=100

Knowledge Score	Frequency f	Percentage %
Good	83	83.00
Average	17	17.00
Poor	00	00.00

Table 3: Indicates that,

Majority of the subjects 64 (64.00%) had unfavorable attitude and 36 subjects (36.00%) had moderately favorable attitude and none of the subjects had favorable attitude.

Table 3 Frequency and percentage distribution of Attitude scores of subjects on cold chain

n=100

Attitude Score	Frequency f	Percentage %
Favorable	00	00.00
Moderately favorable	36	36.00
Unfavorable	64	64.0

Table 4: Indicates that,

The subjects knowledge score Mean is 20.47, Median 20, Mode 20, Standard Deviation 1.93 and Range 07.

The subjects attitude score Mean is 24.8, Median 25, Mode 24.4, Standard Deviation 1.96 and Range 08.

Table 4 Findings related to Mean, Median, Mode, Standard Deviation, Range of knowledge scores and attitude score of subjects on cold chain

n = 100

Area of Analysis	Mean	Median	Mode	SD	Range
Knowledge score	20.47	20	20	1.93	07

n = 100

Area of Analysis	Mean	Median	Mode	SD	Range
Attitude score	24.8	25	24.4	1.96	08

Table 5: Indicates that,

The calculated correlation value (tcal = 4.97) is greater than tabulated value (ttab =1.98). Hence H1 is accepted. This indicates that there is correlation between knowledge and attitude statistically significant at p<0.05 level. Therefore the findings revealed that there is a moderately positive correlation between knowledge & attitude on cold chain among subjects. This shows that knowledge and attitude is correlated to each other.

Table 5 Findings related to correlation between knowledge and attitude scores of subjects on cold chain.n=100

Karl Pearson's Correlation Value		df
Calculated	Tabulated	
4.97*	1.98	98

Table 6: Indicates that,

There is a significant association between knowledge scores and selected socio-demographic variables like Age in years [χ2cal=161.75,χ2tab=12.59], Gender [χ2cal=66, χ2tab=4.99], Educational qualification [χ2cal=119.82,χ2tab=12.59], Total clinical experience [χ2cal=178.5,χ2tab=12.59], Experience in immunization clinic [χ2cal=124.94,χ2tab=9.49], In service education [χ2cal=156.64,χ2tab=4.99], Area of work [χ2cal=100,χ2tab= 4.99]. The calculated Chi-square values are greater than tabulated value at 0.05 level of significance.

Hence H$_2$ is accepted. This indicates that there is significant association between knowledge scores and selected socio-demographic variables at 0.05 level of significance.

Table 6 Findings related to association between knowledge scores of subjects with their selected socio-demographic variables. n=100

Sr. No.	Selected socio-demographic variable		Scores		Chi-Square Value		df
			Good	Average	Calculated	Tabulated	
1	Age in years						
	a)	20 – 25	15	13	161.75*	12.59	06
	b)	26 – 30	27	02			
	c)	31 – 35	22	01			
	d)	36 – 40	19	01			
2.	Gender						
	a)	Male	24	00	66*	4.99	02
	b)	Female	59	17			
3.	Educational qualification						
	a)	ANM	27	15	119.82*	12.59	06
	b)	GNM	28	02			
	c)	B.Sc (N)	16	00			
	d)	P.B.BSc (N)	12	00			
4.	Total clinical experience in years						
	a)	1 - 5	34	16	178.5*	12.59	06
	b)	6 – 10	23	01			
	c)	11 - 15	18	00			
	d)	16 - 20	08	00			
5.	Experience in immunization clinic in years						
	a)	0 – 5	52	17	124.94*	9.49	04
	b)	6 – 10	21	00			
	c)	11 - 15	10	00			
6.	In service education on cold chain						
	a)	Yes	52	01	156.64*	4.99	02
	b)	No	31	16			
7.	Area of work						
	a)	Government Hospital	11	00	100*	4.99	02
		Private Hospital	72	17			

Conclusions

This study finding indicated that most of the health care personnel's were possessing good and average knowledge on cold chain but their attitude scores were unfavorable and moderately favorable towards cold chain. Hence, there was only moderately positive correlation between knowledge and attitude scores of subjects on cold chain. This study suggests that, there was high need to focus the affective domain of learning which is attitude, because attitude largely affects the practice.

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