

**PARENT'S FACTORS INFLUENCE ON IMMUNIZATION
STATUS OF THEIR PRESCHOOL-AGED CHILDREN AT
HOSPITAL UNIVERSITI SAINS MALAYSIA
(HOSPITAL USM)**

by

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**Dissertation submitted in partial fulfilment of the
requirements for the degree of
Bachelor of Health Science (Nursing)**

June 2013

DECLARATION

I certify that this thesis does not incorporate without acknowledgement any material previously submitted for a degree or diploma in any university; and that to the best of my knowledge and belief it does not contain any material previously published or written by another person except where due reference is made in the text.



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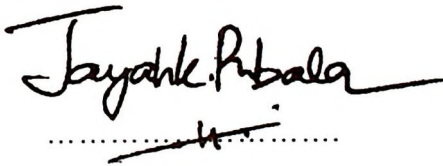
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CERTIFICATE

This is to certify that the dissertation entitled 'Parent's Factors Influence on Immunization Status of Their Preschool-aged Children at Hospital Universiti Sains Malaysia (Hospital USM)' is the bonafide record of research work done by Norhafiza binti Ariffin, matric number: 105138 during the period of September 2012 to June 2013 under my supervision. This dissertation submitted in partial fulfillment for the Degree of Bachelor of Health Science (Nursing). Every research work and collection of data belongs to Universiti Sains Malaysia.

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LIST OF ABBREVIATIONS

WHO	World Health Organization
UNICEF	United Nations Children's Fund
EPI	Expanded Programme on Immunization
Hospital USM	Hospital Universiti Sains Malaysia
SPSS	Statistical Package for Social Sciences

**PARENT'S FACTORS INFLUENCE ON IMMUNIZATION STATUS OF THEIR
PRESCHOOL-AGED CHILDREN AT HOSPITAL UNIVERSITI SAINS
MALAYSIA (HOSPITAL USM)**

ABSTRACT

Immunization is important for the children in order to prevent them from getting dangerous diseases. Parents are important people who are responsible in determining the completeness of immunization having by the children. This research was done to determine association between parent's factors and children immunization status. Parent's factors included are parent's socio-demographic data, knowledge, attitude and information obtained regarding immunization. This research was a cross-sectional study research and used self-administrated questionnaire as research instrument. Respondents included were parents who care for their hospitalized child in pediatric ward Hospital USM. Total of 65 parents were involved in this study. The data obtained then were analyzed using Statistical Package for Social Sciences (SPSS) version 20.0. The data analyses used were descriptive statistic and Fisher's Exact test. Result showed that 83.1% of the respondent had good knowledge about immunization. Besides, 58.5% respondent showed positive attitude toward immunization having by their children. Result also showed that there was no significant association between parent's socio-demographic data and preschool-aged children immunization status. Finding also showed that there was no significant association between parent's attitude and information obtained about immunization and their preschool-aged children immunization status. The *p*-values were 0.565 and 1.000 respectively. However, the significant association was found between parent's knowledge about immunization and children immunization status with *p*-value

was 0.004. This research found that parent socio-demographic data, their attitude and information obtained regarding immunization is not the factors that contribute to completeness and non-completeness of immunization. However, parental knowledge level about immunization was the factor that will contribute to the status of children immunization.

Key words: Parent, knowledge, attitude, information, children, immunization

**FAKTOR-FAKTOR IBU BAPA YANG MEMPENGARUHI STATUS
IMMUNISASI DALAM KALANGAN KANAK-KANAK PRA-SEKOLAH DI
HOSPITAL UNIVERSITI SAINS MALAYSIA (HOSPITAL USM)**

ABSTRAK

Immunisasi adalah penting bagi kanak-kanak untuk mencegah mereka daripada mendapat penyakit-penyakit yang berbahaya. Ibu bapa ialah orang penting yang bertanggungjawab dalam menentukan lengkapnya immunisasi yang diperolehi oleh anak-anak mereka. Kajian ini telah dilakukan untuk mengenalpasti perkaitan antara faktor-faktor ibu bapa dan status immunisasi anak-anak mereka. Faktor-faktor ibu bapa yang diambil kira ialah faktor sosio-demografi, pengetahuan, pendirian atau sikap dan maklumat yang diperolehi tentang immunisasi. Kajian ini adalah kajian keratan rentas dan menggunakan borang soal selidik sebagai alat untuk mendapatkan maklumat. Responden adalah ibu bapa yang menjaga anak mereka yang dimasukkan ke wad kanak-kanak Hospital USM. Seramai 65 orang ibu bapa mengambil bahagian dalam kajian ini. Maklumat yang diperolehi dalam kajian ini dianalisis menggunakan *Statistical Package for Social Sciences (SPSS)* versi 20.0. Data analisis yang digunakan ialah deskriptif analisis dan ujian *Fisher's Exact*. Keputusan menunjukkan bahawa 83.1% daripada responden mempunyai pengetahuan yang baik tentang immunisasi. Selain itu, 58.5% responden menunjukkan pendirian yang positif terhadap immunisasi yang diterima oleh anak mereka. Keputusan juga menunjukkan bahawa tiada hubungan yang signifikan di antara faktor sosio-demografi ibu bapa dan status immunisasi kanak-kanak pra-sekolah. Penemuan juga menunjukkan bahawa tiada hubungan yang signifikan antara pendirian ibu bapa dan maklumat yang diperolehi tentang immunisasi dan status immunisasi kanak-

kanak pra-sekolah. Nilai p masing-masing ialah 0.565 dan 1.000. Walaubagaimanapun, terdapat hubungan yang signifikan antara pengetahuan ibu bapa terhadap immunisasi dan status immunisasi kanak-kanak dengan nilai p ialah 0.004. Keputusan kajian ini menunjukkan bahawa sosio-demografi ibu bapa, pendirian ibu bapa dan maklumat yang diperolehi ibu bapa tentang immunisasi bukanlah faktor yang menyumbang kepada lengkap atau tidak lengkap immunisasi kanak-kanak. Tetapi, tahap pengetahuan ibu bapa tentang immunisasi yang menjadi faktor penyumbang kepada status immunisasi kanak-kanak.

Kata kunci: Ibu bapa, pengetahuan, pendirian, maklumat, kanak-kanak, immunisasi

CHAPTER 1

INTRODUCTION

1.1 Background of the Study

Immunization or also known as vaccination is given to children at a recommended age in order to prevent infection and dangerous illness such as tuberculosis, hepatitis B and poliomyelitis. It is the important intervention for children nowadays. It helps to reduce child mortality rate. According to World Health Organization (WHO) and The United Nations Children's Fund (UNICEF), (2005), children vaccinations prevent two millions deaths per year worldwide. However, 2.5 millions deaths a years continue to be caused by vaccine-preventable disease. According to Shamsul, Rohaizat, Azimatun, Rozita, Nazarudin & Nirmal, (2012) one-quarter of 2002 mortality rate for children under five years old was due to vaccine-preventable diseases. Therefore, the cost-effective intervention such a immunization becomes the main concern in order to promote the children health. In Malaysia, the free immunization is given to all children to improve children health. The immunization services are provided in hospitals and clinics in both urban and rural area too. The statistic obtain from Department of Public Health, Ministry of Health Malaysia in 2011 stated that the childhood immunization coverage is exceeding 90% in all the places in Malaysia (Health Fact, 2012). The coverage of immunization in Malaysia is similar to Italy (Impicciatore, Bosetti, Schiavio, Pandolfini, & Bonati, 2000).

In Malaysia, all children are given the free vaccination at the specific ages. The immunization is given following the immunization schedule provided by Ministry of Health Malaysia (refer Table 1.1). The vaccination for children in Malaysia is divided into two categories which are mandatory vaccination and recommended vaccination (refer Table 2.1). Therefore, it is compulsory for parent to bring their children to obtain

immunization following the schedule provided in order to prevent their children from getting infectious diseases. It also helps to improve the child's health status and quality of life.

Table 1.1: Childhood Immunization Schedule

Jadual Immunisasi Yang Disarankan Oleh Kementerian Kesihatan Malaysia

Immunisasi	Umur (Bulan)									Umur (Tahun)		
	0	1	2	3	4	5	6	12	18	7 (Ting 1)	12 (Ting 2)	15 (Ting 3)
BCG	■									No Scar		
Hep B	■		■	■		■						
DTP			■	■		■						
Hib			■	■		■						
OPV			■	■		■						
Measles							■					
MMR								■				
DT												
T												

■ Immunisasi primer □ Disambatkan ■ Imbuhan sahaja



KEMENTERIAN KESIHATAN MALAYSIA



(Adopted from: Pediatric Infectious Disease Webpage, 2010)

1.2 Problem Statements

Even though the full coverage of immunization was provided in all the places in Malaysia, there is still an increasing in prevalence of vaccine preventable disease. For example, the incidence rate for measles in year 2006 was 2.27 meanwhile the mortality rate for measles was 0.00 (Health Facts, 2006). However, it is shown as an increasing of case of measles in year 2011 where the incident rate was 5.42 and mortality rate was 0.01(Health Facts, 2012). Instead of measles, there was also an increase in incidence of whooping cough diseases. The incidence of whooping cough in year 2006 was 0.02 and it has been increase in year 2011 where the incidence rate was 0.86.

Although government has provided the facilities for immunization, there are still other factors that influence the immunization status among the children. The factors contribute to children immunization status are immunization policies itself, lack of public awareness about immunization and attitude of both parent and health care workers toward immunization. Previously, the research has been examined the relationship between parent's factor and immunization status of child (Impicciatore *et al.*, 2000). As we all know, parent also are important person who took care for their children and provide them with all the basic needs. They are also important people who help to maintain and monitor their children health status. So, parent's factors need to be considered when dealing with children health. That is the reason for this research to be conducted in order to obtain information regarding parent's factors that will influence their children immunization status.

The parent's factors that will be considered are parent socio-demographic data, knowledge and attitude regarding immunization and parent's level of information obtain regarding immunization. In Malaysia specifically Hospital Universiti Sains Malaysia (Hospital USM), the research on parent knowledge, attitude and barrier only are the factors considered in determining children immunization status (Nurul Hanani, 2010). Therefore, this research is to be done to determine the other parent's factors that influence immunization status of the children. In this research, the Anderson and Newman Framework was used as the theoretical framework.

1.3 Research Objectives

1.3.1 General Objective

To identify parent's factors influence on immunization status of their preschool-aged children in Hospital Universiti Sains Malaysia (Hospital USM)

1.3.2 Specific Objectives

1. To identify parent's knowledge level regarding immunization.
2. To identify parent's attitude level regarding immunization.
3. To identify level information obtained by parent's towards children immunization.
4. To determine the significant association between parent's socio-demographic data (age, educational level, family income, residency area and distance house from immunization site) and their preschool-aged children immunization status.

5. To determine the significant association between parent's knowledge regarding immunization and their preschool-aged children immunization status.
6. To determine an association between parent's attitude and their children immunization status.
7. To determine the significant association between information obtained by parent regarding immunization and preschool-aged children immunization status.

1.4 Research Questions

1. Is there any significant association between parent's socio-demographic data and preschool-aged children immunization status?
2. What are the association between parent's knowledge and immunization status of their preschool-aged children?
3. What are the association between parental attitude and preschool-aged children immunization status?
4. Is the parent's information obtained regarding immunization influences the immunization status of their children?
5. What are the factors associated with children immunization status?

1.5 Hypothesis

The hypothesis is the parent's factors will influence the immunization status of their preschool-aged children.

Null and alternative hypothesis

H₀ 1 = There is no significant association between parent's socio-demographic data and children immunization status.

H_A 1 = There is a significant association between socio-demographic data and children immunization status.

H₀ 2 = There is no significant association between parental knowledge and children immunization status.

H_A 2 = There is a significant association between parental knowledge and children immunization status.

H₀ 3 = There is no significant association between parent's attitude about immunization and children immunization status.

H_A 3 = There is a significant association between parent's attitude and children immunization status.

H₀ 4 = There is no significant association between parent's information obtain regarding immunization and children immunization status.

H_A 4 = There is a significant association between parent's information obtain regarding immunization and children immunization status.

1.6 Definition of Terms

1.6.1 Parenting

Parenting is define as process of rearing of a children especially care, love and guidance given by parent (The American Heritage Dictionary (2009) cited in TheFreeDictionary webpage, 2012). Therefore, parents are important person who will ensure their children to receive the best care from them especially in the context of their health. The way parent care and guide their children about health will influence the health status of the children. So, in relation with this study, parent care and concern about the immunization will reflect their children's immunization status.

1.6.2 Immunization

Immunization is a procedure or process that protects body against an infectious disease (Encyclopedia of Medicine (2008) cited in TheFreeDictionary webpage, 2012). It is a technique used to induce immune response to specific disease in human by exposing the individual to an antigen in order to raise antibodies to that antigen (Mosby's Medical Dictionary (2009) cited in TheFreeDictionary webpage, 2012). Vaccination is one of the methods to induce immunization. Type of vaccination that recommended to be taken by infants and young children are polio, tetanus, measles, diphtheria, mumps and rubella. Overall, immunization can be conclude as the injection given to children at recommended age in order to induce antibody toward certain disease that help children to fight certain diseases.

1.6.3 Preschool-aged children

Preschool children is classified as children with aged less than five years old (Kirwan, Asaolu, Molloy, Abiona, Jackson & Holland, 2009). According to Washington State Legislature (2003), the preschool children are children below the age and grade level at which state or government provide free public education. Preschool children also defined as people who can benefit from an organized educational program which is provided in a school or instructional setting. Since children below than 5 years old is considered as preschool-age children, so, in this research, the target population will be parent with children 5 years old and below.

1.7 Significance of the Study

The importance of this study is actually to discover the association between parent's factor influences on children's immunization status. The parent's factors that will be studied in this research are socio-demographic data, parent knowledge and attitude include the information obtain regarding immunization for their children. From the factors that have been identified, we can actually know the reasons some parents are concern about their children immunization status and some are not. From there, we can identify the problem faced by parent that will affect also their children health. Therefore, some measure and intervention can be taken in order to solve the problem in the society of studies. The nurses especially who are involved in pediatric setting can implement an activity which help to promote children health through immunization program. In addition, the significance of this study is to improve parent's knowledge and awareness about the importance of immunization to their children. Therefore, they will be more

concern in ensuring their children are being injected with vaccine on time. When it happens, the prevalence of children being infected will be decrease. Hence, the mortality rate among children will be decreased too.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

Many children are at high risk to get disease that can be prevented through vaccination. It is due to low compliance toward childhood immunization programme. That is why the low childhood immunization rates become the national health concern (Fields, Sumpter, Seagraves, Laney, Lott & McBride, 2007).

Due to low childhood immunization rate and coverage, the Expanded Programme on Immunization (EPI) was created in year 1974 with the purpose to increase the services of immunization (Mapatona, Kayemba, Piripiri & Nyandwe, 2008). The immunization services are provided in order to prevent six vaccine-preventable diseases that include diphtheria, measles, pertussis, poliomyelitis, tetanus and tuberculosis. Mapatona *et al.* (2008) also stated that the other purpose of EPI was to provide immunization service for all children with the target coverage for all antigens exceed 90% by the year 2000. In Bangladesh, the EPI was launched in year 1979 and had become remarkable success (Rahman and Obaida-Nasrin, 2010). It was increased the immunization coverage from 2 % in 1980s to 95% currently. However, the EPI was far from reaching its target in Democratic Republic of Congo (Mapatona *et al.*, 2008). According to Mapatona *et al.* (2008), the national household survey in the year 1995 done in Democratic Republic of Congo showed that the routine coverage for immunization was still low. There were only 47% coverage for BCG vaccine, 27 % for DPT3 vaccine and 39% for measles vaccine.

From the finding, it showed that the EPI is not only factor that contribute to the successful of immunization in worldwide. There are still other factors that will influence

the successfulness of compliance towards children's immunization. One of the factors is the parent of the children itself. According to Symonds (1978), the success of the immunization programs is depend on the parent because parent are important person that responsible to ensure their children's immunization status in completed. Therefore, in this research, the relationship between parent's factors and children's immunization status is going to be studied by the investigator.

2.2 List of mandatory and recommended vaccination for children in Malaysia

Table 2.1 showed the mandatory and recommended vaccine provided for children in Malaysia. The mandatory vaccinations were compulsory vaccine need to be taken by children as schedule to prevent them from getting dangerous illness. Every parent need to ensure their children get the immunization on time. Besides, recommended vaccine is only an optional vaccination provided in Malaysia to prevent certain disease like Hepatitis A and pneumococcal infection.

**Table 2.1: List of mandatory and recommended vaccinations for children in
Malaysia**

MANDATORY VACCINATIONS		
Name of vaccination	When	For
BCG	At birth.	Prevention of tuberculosis.
Hepatitis B	At birth, 1 month and 5 months.	Prevention of Hepatitis B.
The triple (Diphtheria, tetanus and Pertussis) and polio	3-dose schedule (2-3 months, 3-4 months and 4-5 months) with booster shots given at 18 months-2 years and 5-7 years. In total, five shots.	To prevent against diphtheria, tetanus, pertussis and polio.
Haemophilus influenzae B	Given with the triple in three doses and the booster is given at 1½ years.	To prevent against Haemophilus influenzae B.
Measles, mumps and rubella	After one year old. This is given in two doses (at one year old and at school entry).	To prevent against measles, mumps and rubella.
RECOMMENDED VACCINATION		
Name of vaccination	When	For
Influenza	Given annually.	To protect against influenza.
Chickenpox	One jab for life.	To protect against chickenpox.
Pneumococcal	Given as three doses in the first six months and the booster after a year. Can be given with the triple shot.	Prevent against pneumonia, meningitis and infections.
Rotavirus	Given in three doses, a month apart. Given with the triple shot.	To prevent against rotavirus infection.
Hepatitis A	Above the age of two, given in two doses, six months to a year apart.	Protects for life against Hepatitis A.

(Adopted from: ParenThots website, 2009)

2.3 Parent's factors influence children immunization status

There are many factors that will influence parent compliance towards immunization hence will influence their children's immunization status. Therefore, in this study, specific factors that influence children's immunization status will be identified. The specific parent's factors that are included in this research study are parent's socio-demographic data, parent knowledge about immunization, parent attitude toward immunization and lastly the influence on information obtain regarding immunization towards children immunization status (Impicciatore *et al.*, 2000).

2.3.1 Socio-demographic data and immunization status

Many research finding has shown that parent's socio-demographic data give a great impact on children immunization status (Mapatona *et al.*, 2008; Impicciatore *et al.*, 2000). According to Som, Pal, Chakrabarty & Bharati (2010), although the immunization coverage had increased, there are still large gap remain among various socioeconomic classes. Som *et al.* (2010) also stated that in India, there was no uniform immunization program among different state or among district in the state. It showed that inequality of childhood immunization had happened.

The common socio-demographic data that has been studied were parent age, parent's educational level, parent residency area, the distance of house from vaccination site, economic status, and children sex and age include the number of children in the family (Sanou, Simboro, Kouyate, Dugas, Graham, & Ribeau, 2009; Impicciatore *et al.*, 2000; Som *et al.*, 2010).

Finding from Rahman and Obaida-Nasrin (2010), stated that parent's age was significant factor that will influence the immunization status of children. The research proved that parent in the middle age (20-34 years old) was likely to fully immunized their children compare to parent with youngest (less than 20 years old) and elder age (more than 35 years old). Parent educational level was also significant factor that influence the immunization status of the children. Ibnouf, Van den Borne & Maarse (2007) stated that parent with higher education had higher rate of correct immunization compare to less educated parent. However, Mapatona *et al.* (2008) showed a different finding whereby parent with high level of education has negative association with children immunization status. In that research, although the father has university level of education, the children immunization status was still low. Therefore, it can be concluded that the level of education itself was not enough in determining immunization status of the children, but parent positive behavior were also needed to be considered as well.

Instead of parent age and education, the parent residency area and distance of house from vaccination site was also influencing children immunization status. In Bangladesh, children in urban area have a higher percentage of fully immunization rate compared to children in rural area. The percentage of full vaccination rate in urban area was 68% compared to rural area which was 63 % (Rahman and Obaida-Nasrin, 2010). However, research done by Sanou *et al.* (2009) in Nouna District, Burkina Faso, Canada showed the differences about the children immunization status whereby children in rural area has more complete immunization coverage compared to those children who were living in urban area. They also stated that children who were born at the health facilities

in rural area had complete immunization coverage compared to those who were born in health facilities in Nouna town.

The distance from the house and vaccination site also was a significant factor that influence the immunization coverage. The findings showed that children who lived nearer to the vaccination site were tend to have better immunization status than children who lived far away from the site of vaccination (Sanou *et al.*, 2009; Rahman and Obaida-Nasrin, 2010; Ibnouf *et al.*, 2007).

Economical status also will influence the children immunization status but it was a complex factors. By right, the immunization coverage should not be influenced by economical status since the immunization services is free of charge. However, although it is free, there is still a gap present in immunization coverage due to economic reason. Inamdar, Piparsania, Inamdar & Singh (2011) stated that children belonging to parent with high economical status had better immunization coverage compared to children who lived in the lower and middle economical status. The percentage of immunization coverage among children with high socioeconomic classes, middle socioeconomic status and lower socioeconomic status were 70.6 %, 47.4 % and 48.0 % respectively. The finding was similar to Topuzoglu, Ozaydin, Cali, Cebeci , Kalaca & Harmanci (2005) in Istanbul, Turkey. Therefore, it showed that parent's economical status will influence the children immunization status.

Instead of parent socio-demographic characteristic, the children demographic characteristic also will influence the immunization status. The children demographic data includes children's sex, age and number of children in the family. Singh (2012) stated

that boy gender had better immunization coverage compared to girl in three countries included India, Pakistan and Bangladesh. In addition, correspond to the children age, study by Topuzoglu *et al.* (2005), stated that the preschool-aged children had better immunization status compare to other children. According to Rahman and Obaida-Nasrin (2010), in Bangladesh, 62 % of preschool-aged children were being fully immunized. Meanwhile, children who have other sibling were tend to be less immunized compared to children with no sibling (Schaffer and Szilagyi, 1995). Furthermore, finding from Torun and Bakirci (2006) stated that, children who have non-vaccinated sibling also will become non-vaccinated.

As the findings from many studies showed that socio-demographic data gave great influence on children immunization status, therefore, the researcher is interested to study the relationship between socio-demographic data and children's immunization status in Hospital Universiti Sains Malaysia (Hospital USM).

2.3.2 Parents' knowledge and immunization status

According to Sanou *et al.* (2009), knowledge about child preventable diseases reflects the understanding towards immunization goal. The statement from UNICEF as cited in Sanou *et al.* (2009) stated that all parent need to have knowledge regarding immunization include why it was given, when it was given and how frequent their children need to received immunization. Besides, parent also should know the safe condition to give immunization to the children. From the statement, it shows that knowledge needs to be given to parent about immunization in order to increase child immunization status.

Siddiqi, Siddiqi, Nisar & Khan (2010) found that there were positive association between parents' knowledge and children vaccination status. The finding of the research stated that parent who has higher knowledge about immunization tend to complete their children immunization status. In addition, study done by Borrás, Dominguez, Fuentes, Batalla, Cardenosa & Plasencia (2009) also has the same finding. The study that has been done in Barcelona, Spain found that parent's knowledge about immunization give higher immunization coverage among children.

Parent knowledge was associated with other factors too for examples educational level and age of the parent (Bernsen, Al-Zahmi, Al-Ali, Hamoudi, Ali, Schneider, Al-Mutawa & Grivna, 2011). Research done by Bernsen *et al.* (2011) in United Arab Emirates found that parent with high education has better knowledge regarding immunization. In contrast, Carrasco-García, Gil de Miguel, Hernandez, Vazquez-Fernandez, Jimenez-Trujillo & Jimenez-Garcia (2004) as cited in Borrás *et al.*, (2009) stated that parents with higher education levels had less knowledge of vaccination compared to parents with less education. As for the age, parent with older age has better knowledge regarding immunization compared to younger age (Bernsen *et al.*, 2011; Borrás *et al.*, 2009).

From the findings of the studies, it showed that parent knowledge was important in determining children immunization status. Thus, the health-care worker especially nurses need to ensure that parent has knowledge regarding immunization. By having this, parent compliance toward their children immunization will be increased.

2.3.3 Parents' attitude and immunization status

Attitude is the way of thinking or feeling, typically reflected in a person's behavior (Lindberg, 2007 cited in Shurtleff, 2009). Qidwai, Ali, Semi Ayub & Salma Ayub (2007) stated that over 90% of the respondent (n= 97) have positive attitude towards immunization and they believed that immunization can prevent diseases. In addition, Prislín, Blakely & Johnson (1998) found that there was a significant relationship found between parent's attitude and children immunization status (Strobino, Hughart & Guyet, 1999). Impicciatore *et al.* (2000) also stated that positive attitude of mothers towards immunization will significantly affect the uptake of vaccination and other disease prevention method. In this research, 92% mother feel that immunization was an important health-care practice for children health, 12% of the mothers think that they will give opportunity for their children to get vaccinated with new hypothetical vaccination. The finding showed that mothers have positive attitude toward immunization and the positive attitude has increased the immunization rate of pertussis and MMR.

Bernsen *et al.* (2011) found that parents' attitude was correlate with knowledge. This study suggested that parent's attitude towards immunization was increased when they have knowledge regarding immunization. The study also stated that the main reason of refusal for immunization by saying "It is not necessary" is due to lack of knowledge and failure to understand the function of immunization which was to prevent serious diseases. From the review of literature, it is important for the researcher to really determine parenting factors such as parent's attitude influence on children immunization status.

2.3.4 Level of information obtain regarding immunization and immunization status

Parent's level of information obtain regarding immunization is also factor that associated with children immunization status. From the review of literature, the parent was found getting information regarding immunization from varies sources include health care worker such as pediatrician and nurses, from media, magazine, website and others (Impicciatore *et al.*, 2000; Coniglio, Platania, Privitera, Giammanco & Pignato, 2011; Qidwai *et al.*, 2007).

Qidwai *et al.* (2007) found that 94% respondent in the study about 'Knowledge, attitude and practice regarding immunization among family practice patients' said that they obtained information regarding immunization from doctor and family member plus 62% of them reported media contribute information about immunization for them. Apart from that, Impicciatore *et al.* (2000), stated that 63% of the respondent (n= 1035) reported that pediatrician was the resource of information. Other than that, they also found that media and relatives contribute a little knowledge about immunization for parent which the percentage of 7.5 and 6 respectively. However, Bernsen *et al.* (2011) found that health-care worker was not performing their role very well in providing information about immunization to parent. The evidence was only 16% of the respondent stated that they obtained knowledge about vaccination from health-care worker. Other participant in this study suggested that they obtain information about immunization from media and internet. Although nowadays there are many sources that can be used to find information regarding immunization, the health-care worker should ensure that they

perform their role in giving education and knowledge to parent regarding immunization in order to avoid bias and misunderstanding about it.

Review of literature also found that information obtain regarding immunization will influence children immunization status. When parent obtained information regarding immunization through health-care professional, media or family, their knowledge about it will be increased. In addition, they also will demonstrate positive attitude toward immunization. They will become more compliance about their children's immunization status too. Therefore, their children tend to be completely immunized.

2.4 Conceptual / Theoretical Framework

In this study, the relationship between parent's factors and preschool-aged children immunization status was determined. The conceptual or theoretical framework used in this study is the Andersen and Newman Framework. The modified version of Anderson and Newman Framework was adopted from Fields *et al.* (2007).

The purpose of this framework was to develop behavioral model that provide measures of access to medical care. Therefore, in this research, this framework was used in order to assess children immunization status which considered as access to the medical care. This framework suggested that individual's access to and use of the health care services were based on the three characteristic. That includes:

Predisposing factors: it was the socio-cultural characteristic of individual include,

- Social structure : Education, occupation, ethnicity, social network, social interaction and culture

- Health beliefs: Attitude, value, and knowledge about health care system
- Demographic : Age and gender

Enabling factors: aspect of obtaining care consist of:

- Personal/family: the means and know how to access health care service, income, health insurance, regular source of care, travel, extent and quality of social relationships
- Community: available health personnel and facilities and waiting time
- Genetic factor and psychological characteristic

Need factors: it was the most immediate cause of health service use. The health problem will generate need for health care services

(Source: *Andersen and Newman Framework of Health Services Utilization*, n.d.)

All of the factors mentioned in this framework were present in this study. For example, the predisposing characteristics include parent's age, gender, marital status, education, parent's attitude and knowledge about the health care system which were immunization and child demographic data. Meanwhile, parent's factors included in enabling characteristic are parent's economic status, employment, distance of house from immunization site and how they travel to come for immunization. In addition, parent's factors include in need characteristic were accessibility to health care services (information obtained about immunization). So, this conceptual framework that has been chosen was suitable to be used in this study in order to access parent's individual perception influence on children immunization status.

In the modified version of Anderson and Newman adopted from Fields *et al* (2007), the predicator which was “likelihood of action” categories was included in order to determine the children immunization status based on the factors present. Figure 1 below shows the Anderson and Newman framework used in this studied.

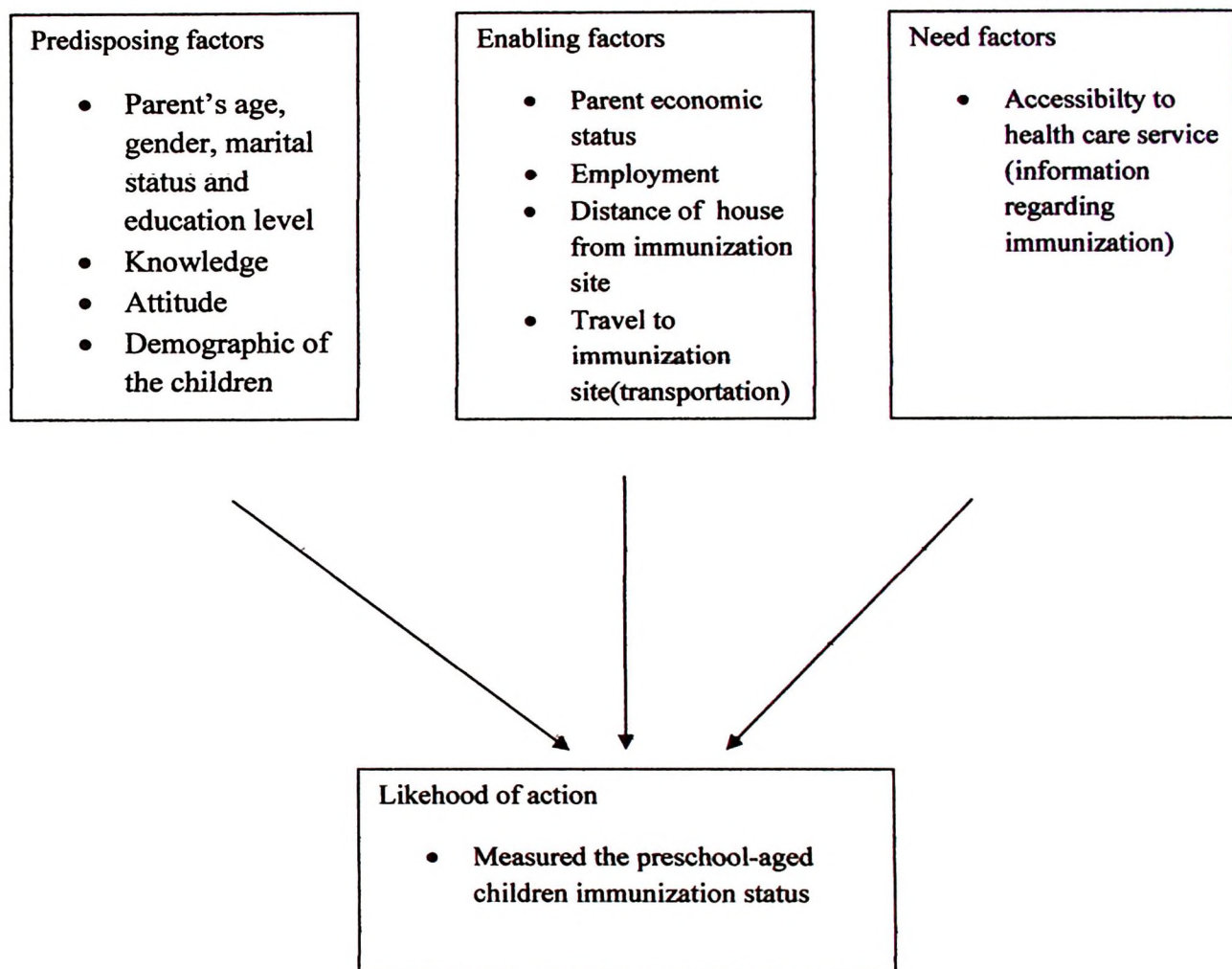


Figure 2.1: Conceptual Framework to study the immunization status of preschool-aged children using Anderson and Newman Framework (Adopted from Fields et al, 2007)

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Research Design

This research used cross-sectional study design as its research design. In this research, the researcher was determined the association between parent's factors and immunization status of their preschool-aged children. The parenting factors include parent's socio-demographic data, knowledge, attitude and level of information regarding immunization. Thus, parent with children age below 5 years old who have been admitted to pediatric ward Hospital Universiti Sains Malaysia (Hospital USM) had become respondent in this study. The self-administrated questionnaire was used in order to collect the data.

3.2 Population and Setting

The population of the study was the parent of their children who have been admitted to pediatric ward Hospital USM. This study focused on parent with preschool-aged children below 5 years old and also parent who meet the inclusion criteria. This study was conducted in pediatric ward Hospital USM which were 6 Selatan and 2 Selatan.

3.3 Sampling plan

3.3.1 Sample

The data had been collected from pediatric ward Hospital USM (6 Selatan and 2 Selatan). The target population was parent who has preschool-aged children age below 5

years old. The population selected need to fulfill the inclusion and exclusion criteria required prior to involvement.

Inclusion and exclusion criteria

In this study, the inclusion and exclusion criteria need to be fulfilled by the parent before the researcher considered them as the respondent for this research study.

Inclusion criteria

- Parents who have preschool-aged children below 5 years old.
- Parents who accompanied their children who have been admitted to pediatric ward HUSM (6 Selatan and 2 Selatan)
- Parents who are able to understand and communicate in Malay language
- Parents who are willing to participate in this study

Exclusion criteria

- Parents who have psychiatric problem
- Parents who are unable to understand Malay language
- Parents who refused to participate in this study

3.3.2 Sampling method

The purposive sampling design was used in this study. The respondents that meet the inclusion criteria set by the researcher will be included in this research. Meanwhile, respondent who are in group of exclusion criteria will be excluded. The sample that had