HEALTH BELIEF MODEL AS FRAMEWORK FOR EXPLORING THE NON-USE OF IMMUNIZATION INFORMATION BY PARENTS OF UNDER FIVE CHILDREN

1ABDALLAH SALAMATU MAGAJI, 2 UMAR BABANGIDA DANIGANI, 3MUSATAPHA HARUNA, 4 SALAMI OVOSI, MD (RUSSIA), 5 SULEIMAN BELLO ABDULLAHI

1,5Ahmadu Bello University, 3,4Federal University Dutsin-ma NIGERIA

Email: 2nadangani064dls@yahoo.com

ABSTRACT

In this paper the Health Belief Model is discussed as a framework for understanding the reasons behind rejection of immunization information by parents of under five children. It discussed how the first four constructs of the model perceive seriousness, susceptibility, benefits and barriers are applied in understanding health related problems. It also discusses how these constructs will help in understanding the reasons for parents’ rejection of immunization information by parents of under-five children. The paper further reviewed previous studies that adopted the Model. Finally, the paper identified the likely questions that the constructs of the model could be used to answer.

1. Introduction

Children in sub-Saharan Africa are more than 15 times more likely to die before the age of five than children in developed regions. About half of under-five deaths occur in only five countries: China, Democratic Republic of the Congo, India, Nigeria and Pakistan. India (21%) and Nigeria (13%) together account for more than one third of all under-five deaths in the world. Ranking Nigeria 2nd country with high under five (5) child deaths (WHO factsheet, 2015). In Nigeria, over 6 million children die annually, more than half of these early child deaths are due to vaccines preventable conditions that could be prevented or treated with access to simple and affordable interventions such as Immunization Information WHO factsheet, (2014) Similarly, UNICEF, (2014)) confirmed that between 21,000 - 29,000 children die every day in Nigeria, it is one of the highest in the world and more than 70 percent of these deaths are caused by vaccines preventable diseases such as malaria, diarrhea, pneumonia, measles, diphtheria, cerebrospinal meningitis, polio, whooping cough and many others.

With the Billions of dollars spent every year by Nigerian Government, international and Local Non-Governmental Organizations (NGOs) to provide vaccines and create awareness for Immunization open to them even to remote areas , but never mind to use them, allowing the menace to persist. The increased risk of disease in children population, in part because of increasing rates of vaccine refusal, which can mean that immune efficient children are at bigger risk of being exposed to vaccine-preventable disease. In most situations, they are not worried about vaccine shedding (complications) from vaccinated kids. In fact, to avoid vaccine-preventable diseases, they talk about creating "a 'protective cocoon' of immunized persons surrounding patients with primary immunodeficiency diseases."

Many studies has investigated under five routine immunization in overcoming child mortality rate from different perspectives: Decision Making, Unique Behavior of Parents, Coverage, Medical and Low Awareness (Sportenand Franscisa, 2000; Shurtleff, 2009; Gidado et. al, 2014; Andre et.al, 2014and Wihbey, 2015), but little studies has look at it from the perspectives of non-use of
under-five (5) Immunization Information to the best of my knowledge. The result of this study will help scholars and potentials that are interested in understanding why the Non-Use to under-five (5) Immunization information, In order to reduce child Mortality rate there is the need to understand parents health related behaviors and cultural practices.

2. Statement of Problem
Without any doubt immunization is among the most efficient tool for promoting individual and public health. It eradicates diseases completely, eliminates diseases, control mortality, morbidity and complications. Immunization programs are estimated to prevent almost 6million death annually worldwide, and greatly reduce the burden of infectious diseases Andre7. Children die every day, many suffered physical disabilities such as: blindness, deaf and dump, lost of limps legs or hand, and with increase in morbidity (rapid spread of disease) more than 70 percent of these cases are due to preventable diseases such as malaria, pneumonia, whooping cough, measles, diarrhea, diphtheria, cerebrospinal meningitis. And can be reduced with simple and affordable interventions such as immunization information UNICEF, (2014). Billions of dollars are spent every year by Nigerian Government, local and international Non 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 Sustainable Development Goals (SDGs) – commitments by the International Federation of Library Association 2016 (IFLA) strategy to reduce poverty and improve human development. To ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance. IFLA (2016) Vaccines have the power not only to save, but also to transform, lives – giving children a chance to grow up healthy, go to school, and improve their life prospects. When vaccines are combined with other health interventions – such as vitamin A supplementation, provision of deworming medicine and bednets to prevent malaria – immunization becomes a major force for child survival. Governmental Organizations (NGOs) in the provision of adequate vaccines and creation of awarness for immunization Mamalette (2013) open to them even to remote areas but many parents never stop to use them allowing the menace to persist, could this rejection be as a result of individual belief and cultural practices?

3. Immunization Information
Immunization is the process whereby a person is made immune or resistant to an infectious disease, typically by the administration of a vaccine. Vaccines stimulate the body’s own immune system to protect the person against subsequent infection or disease. Immunization is a proven tool for controlling and eliminating life-threatening infectious diseases and is estimated to avert between 2 and 3 million deaths each year. It is one of the most cost-effective health investments, with proven strategies that make it accessible to even the most hard-to-reach and vulnerable populations. It has clearly defined target groups; it can be delivered effectively through outreach activities; and immunization does not require any major lifestyle change WHO (2014) immunization has greatly reduced the burden of infectious diseases. Only clean water, also considered to be a basic human right, performs better. Understandably, vaccine safety gets more public attention than immunization effectiveness, but independent experts and WHO have shown that vaccines are far safer than therapeutic medicines. Today, vaccines have an excellent safety record and most “vaccine scares” have been shown to be false alarms.
Information on immunization enables individuals to seek medical care, reaching the health facility, and receiving appropriate case management by health workers such as provision of accurate, comprehensive, and up-to-date information about childhood vaccines, and the diseases they prevent, when to have the vaccines to parents and healthcare professionals and Uptake of reproductive health services. Immunization information aim is to advocate vaccine risk awareness and the right to exercise voluntary, informed consent to immunization. Like prescription of drugs, vaccines are pharmaceutical products that carry two risks: a risk the product will not work and a risk the product will cause harm. It also provides ways to prevent vaccine injuries and deaths through public education advocates for informed consent in medical research and medical policies and public health laws, including flexible exemptions in vaccine policies and laws for health reasons and for religious and conscientiously held beliefs. It also supports adoption of the precautionary principle based on the Hippocratic “first, do no harm” approach to public health policymaking and in shared medical decision-making by doctors with patients. This paper aims to show how immunization information are valuable to both individuals and societies, to present validated facts, and to help redress adverse perceptions of parents on immunization through the use of Health Belief Model.

4. Health Belief Model
The health belief model is a psychological health behavior change model developed to explain and predict health-related behaviors, particularly in regard to the uptake of health services. The health belief model was developed in the 1950s by social psychologists at the U.S. Public Health service to better understand the widespread failure of screening programs for tuberculosis. The health belief model has been applied to predict a wide variety of health-related behaviors and remains one of the most well-known and widely used theories in health behavior research. The health belief model suggests that people's beliefs about health problems, perceived benefits of action and barriers to action and self-efficacy explain engagement (or lack of engagement) in health-promoting behavior. A stimulus, or cue to action, must also be present in order to trigger the health-promoting behavior. This model simply describes a combination of a personal risk analysis, followed by an evaluation of the proposed solution and its use. As a general method of addressing beliefs it offers a useful structure for a wider range of belief-change situations. When seeking to change a person's belief, first understand the model beneath the belief and then address the sub-elements of these. The Health Belief Model provides a useful framework that may either provide direct help or may inspire similar thinking. The diagram below describes how health belief model can stimulate behavioural change.
4.1 Theoretical Constructs

The following constructs of the health belief model are proposed to vary between individuals and predict engagement in health-related behaviors (e.g., getting immunized, getting screened for asymptomatic diseases, exercising, amongst others).

Perceived Severity
Perceived severity refers to subjective assessment of the severity of a health problem and its potential consequences. The health belief model proposes that individuals who perceive a given health problem as serious are more likely to engage in behaviors to prevent the health problem from occurring (or reduce its severity). Perceived seriousness encompasses beliefs about the disease itself (e.g., whether it is life-threatening or may cause disability or pain) as well as broader impacts of the disease on functioning in work and social roles. For instance, an individual may perceive that influenza is not medically serious, but if he or she perceives that there would be serious financial consequences as a result of being absent from work for several days, then he or she may perceive influenza to be a particularly serious condition.

Perceived Susceptibility
Perceived susceptibility refers to subjective assessment of risk of developing a health problem. The health belief model predicts that individuals who perceive that they are susceptible to a particular health problem will engage in behaviors to reduce their risk of developing the health problem. Individuals with low perceived susceptibility may deny that they are at risk for contracting a particular illness. Others may acknowledge the possibility that they could develop the illness, but believe it is unlikely. Individuals who believe they are at low risk of developing an illness are more likely to engage in unhealthy, or risky, behaviors. Individuals who perceive a high risk that they will be personally affected by a particular health problem are more likely to engage in behaviors to decrease their risk of developing the condition. The combination of perceived seriousness and perceived susceptibility is referred to as perceived threat. Perceived seriousness and perceived susceptibility to a given health condition depend on knowledge about the condition.
The health belief model predicts that higher perceived threat leads to higher likelihood of engagement in health-promoting behaviors.

**Perceived Benefits**
Health-related behaviors are also influenced by the perceived benefits of taking action. Perceived benefits refer to an individual's assessment of the value or efficacy of engaging in a health-promoting behavior to decrease risk of disease. If an individual believes that a particular action will reduce susceptibility to a health problem or decrease its seriousness, then he or she is likely to engage in that behavior regardless of objective facts regarding the effectiveness of the action. For example, individuals who believe that wearing sunscreen prevents skin cancer are more likely to wear sunscreen than individuals who believe that wearing sunscreen will not prevent the occurrence of skin cancer.

**Perceived Barriers**
Health-related behaviors are also a function of perceived barriers to taking action. Perceived barriers refer to an individual's assessment of the obstacles to behavior change. Even if an individual perceives a health condition as threatening and believes that a particular action will effectively reduce the threat, barriers may prevent engagement in the health-promoting behavior. In other words, the perceived benefits must outweigh the perceived barriers in order for behavior change to occur. Perceived barriers to taking action include the perceived inconvenience, expense, danger (e.g., side effects of a medical procedure) and discomfort (e.g., pain, emotional upset) involved in engaging in the behavior. For instance, lack of access to affordable health care and the perception that a flu vaccine shot will cause significant pain may act as barriers to receiving the flu vaccine.

### 4.2 Previous Studies that Uses the Health Belief Model
A Research conducted by Kim (2012) investigated how nutrition beliefs influence college students’ desire to be healthy. Using the HBM the study attempted to: Investigate college students’ health behavior, Find what the motives of eating behavior and physical activity were, Assess if those underlying factors are related to one another Kim (2012) Using Qualtrics.com, survey questionnaires were collected and used for the analysis. The questionnaire was used to investigate several factors: 1.Objective Nutrition Knowledge, 2.Nutrition Confidence, Benefit, Barrier, Susceptibility, and Severity, 3.Behavioral Intention to Eat Healthy Food and Do Physical Activity, 4.Demographic information. Results showed that: Nutrition knowledge leads to an increase in nutrition confidence, Nutrition confidence also influences health belief, Positive Health Beliefs lead to an increase in behavioral intention to eat healthy food and do physical activity. Kim (2012) propose that these findings be validated by applying the model to other consumer groups and circumstances, because all the participants lived in the Southwestern region of the United States. They also believe that it is important to explore whether measuring current Health Beliefs would impact different health behaviors.

A study carried out by Asci and Asci and Sahin (2011) determine the attitudes, beliefs, and behaviors of the mothers who accompany their children in the hospital for breast health (BH) problems, Determine the effects of a BH program based on HBM and BH perceptions and screening behaviors. There were 51 participants including mothers and children, the mean age of mothers being 34.2 years. All mothers attended the BH program (which was based on the HBM) that lasted 30-35 minutes. The program was held for three months where data was collected: before, during, and after. The Breast Cancer HBM scale, designed specifically for this study, was
composed of 8 sub scales to measure personal decision related to breast cancer and general health conditions: Susceptibility, Seriousness, Health Motivation, Confidence, Benefits – BSE, Barriers – BSE, Benefits – mammography, Barriers – mammography. Each subscale was separately evaluated in a five-point Likert type scale (strongly disagree, disagree, neutral, agree, and strongly agree). Results found that before the application of HBM-based BH program, less than half of the mothers (39.2%) made Breast Self-Examination (BSE); however, 3 months after the BH program, this rate increased to 78.4%. Similarly, the proportion of mothers who knew and applied BSE correctly was found low. Asci and Sahin (2011) propose that programs should be organized to improve women’s BSE knowledge, ability and awareness, and thus their BSE application levels could be promoted.

A study conducted by Gutierrez and Long (2011), evaluated the accuracy of HBM scales that were designed to figure out what each of the HBM domains were for people with diabetes and serious mental illnesses (SMI). They broke down each of the scalar constructs in the following manner:
1. Perceived Susceptibility: looked at the participants’ beliefs about what would happen if they did not take medications as directed by their doctor. This included how likely they would be to develop complications, have complications worsen, or have shortened life expectancy.
2. Perceived Severity: looked at the participants’ beliefs about the severity of diabetes as a health problem or the severity of complications arising from diabetes as health problems.
3. Perceived Benefits: the participants’ perception of how sticking to their diabetic medication will benefit their overall health.
4. Perceived [Side Effect] Barriers: the participants’ perception of the discomfort of side effects from diabetes medications as well as their worries about long term effects of their medications.
5. Perceived General Barriers: the other barriers to taking medications, such as: forgetfulness, family problems, and difficulty integrating medication taking into daily life and lack of motivation.
6. Diabetes Self-Efficacy: the confidence the participant felt in their ability to manage their diabetes.
7. Perceived Diabetes Control: asked participants how well they are managing to control their diabetes.

Findings, In general, the HBM scales proved exceptionally close in accuracy in patients with diabetes and SMI. However before interventions can be pursued, these findings need to be replicated in a larger study sample. Gutierrez & Long (2011)

A study was carried out by Franklinfield, Kristen M. (2009) titled Health Belief Model Cancer Screening for Female College Students. The study aimed at identifying female college student’s breast cancer screening beliefs and practices related to Health Belief Model, examined Breast-Self Examination (BSE) Cancer Breast Examination (CBE) practices compared to the Health Belief Model components and demographics. Participants were female college students (n=2,193); 42.5% 20-24years:78.8% Non-Hispanic White and 93.5% Heterosexual. 70.6% have no family history of breast cancer, 62.2% had family or friend with breast cancer and 0.4% reported a personal Diagnosis. A modified version of champions HBM construct instrument (1984) through an online self-reporting questionnaire was used to assess demographics and questions related to compliance BSE behavior. Univariate statistics, frequency analysis and correlation were used to describe participants and their screening behaviors. The following are the major findings: 1. Participants knew how to perform, performed and felt confident when performing BSE; yet less where likely to perform regularly, 2. There were more compliant to CBE than BSE screening regularly, 3. There is no relationship between HBM components and breast cancer behavior.

5. Application of Health Belief Model to the understanding of non-use of Immunization Information
The Health Belief Model helps explain why individual patients may accept or reject preventative health services or adopt healthy behaviors. Social psychologists originally developed the Health
Belief Model to predict the likelihood of a person taking recommended preventative health action and to understand a person’s motivation and decision-making about seeking health services:

The Health Belief Model (HBM) has been broadly applied in predicting health-related behaviors, preventive health behaviors, sick role behaviors and clinic use. According to the HBM, 6 main constructs influence people’s decisions about whether to take action including: perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action and self-efficacy. The constructs can be use to examine the non-use of immunization information and help immunization information programmers in designing a better immunization information to enhance compliance which the research found only four of the constructs relevant: Perceived Susceptibility, Severity, Benefits and Barriers.

Perceived Susceptibility it is an individual assessment of his/her chance of getting a disease, it is very important in order to ensure compliance before parents will accept vaccines for their children. Parents must believe that their children are liable of getting infected with the vaccine preventable diseases such as polio, measles, whooping cough, meningitis, diarrhea and many others including their complications. To ensure compliance, an Immunization Informant can apply this question: What are the perception of parents about their children infected with vaccine preventable diseases and their complications?

Perceived severity is the judgement as to the seriousness of the disease as perceived by one. Before parents can comply with immunization information they must perceived that vaccine preventable diseases can lead to complications blindness, loss of limbs (legs or hands) deaf/dump and mental disorders. It is very dangerous to ignore vaccine preventable diseases because it increase the chance of life threatening to complication in children. Likely asked question using the construct of perceived severity by immunization information’s: How do parents perceived the risk and consequences of vaccines preventable diseases?

Perceived Benefits is conclusion of one as to whether the new behavior is better than what he/she is doing, that is how is supersede it the barrier to actions when compared to benefits, parents must belief that compliance to immunization information will reduce the risk like injection abscess and after fever won’t be any negative side effect or excessive difficulties to their children, all these are necessary in order to ensure full compliance to immunization in formation. The likely question to be asked by immunization informationist will be: How do parents make sense of information on the benefits of complying with immunization information?

Perceived barrier is another construct that will help shape compliance to immunization information, because the opinion of an individual as to what will stop him/her from adopting the new behavior, and a belief that benefits of complying with immunization information far weighs the barriers of action. Example, parent who belief in complications of vaccines injectable like abscess and after fever, then other barriers like distance and cost but realized without having their child immunized, the child will fall sick and suffer complications after, may comply with immunization information. The likely question that the construct of perceived barriers can be asked by immunization information’s is; do parents overcome challenges experience in their attempt to comply with immunization information?
6. Conclusion
This paper concluded that Health Belief Model is an important guide to understanding of the compliance of Non-Use of immunization information, this is because the Model constructs can be properly applied to explain how people perceived immunization information and make sense of it. Hence some health related issues are explored using the Model.

7. References