UNIVERSITY OF GHANA

THE HEALTH BELIEF MODEL IN SOCIAL MARKETING INTERVENTIONS ON HEPATITIS B PREVENTIVE BEHAVIOUR IN GHANA

BY

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DECLARATION

I do hereby, declare that this thesis is the result of my own research and has not been presented by anyone for any academic award in this or any other university. All references and other sources used in the work have been duly acknowledged.

I bear sole responsibility for any shortcomings.

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CERTIFICATION

I hereby certify that this thesis was supervised in accordance with procedures laid down by the University.

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DEDICATION

This work is dedicated first and foremost to the Lord Almighty for giving me the strength and knowledge to be able to put this work together. It is also dedicated to my wonderful husband Richard Ekow Adams and my adorable kids, Shaun, Lois and Damien for their unflinching support throughout this thesis period.

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ABSTRACT

Despite the availability of Hepatitis B virus (HBV) preventive vaccine, HBV still remains a major health threat in Ghana as evidenced by data from the Ghana Health Service. Even though efforts have been made to reduce this health menace, the focus has been on awareness creation, need for policy, screening intentions and prevalence of the disease without considering the behavioural factors influencing the spread of the disease. This study sought to examine how the Health Belief Model (HBM) as a theory could be used to predict and understand HBV preventive behaviour in Ghana. The study further examines the moderating effect of place of residence on the HBM and HBV constructs. The quantitative approach was adopted for the study. A structured questionnaire was administered to 415 respondents in the Greater Accra Region (slums and non-slums) and the data was analysed using Partial Least Square Structural Equation Modelling (PLS-SEM) to explore the relationship between the HBM constructs and HBV preventive behaviour. The results show that perceived susceptibility, self-efficacy and perceived benefits are better predictors of HBV preventive behaviour in the Ghanaian context. However, perceived severity showed an insignificant relationship with HBV preventive behaviour. This study, thus, recommends that implementers of social marketing campaigns on HBV in Ghana should investigate why most Ghanaians have not adopted HBV preventive behaviours even though they are aware of the disease. They can do so by employing HBM to design interventions on HBV to highlight the mode of transmission of the disease and also lay emphasis on the fact that the disease is no respecter of persons since everyone has an equal chance of contracting it in order to change the behaviour of the people. The details of these findings are discussed in the work.

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LIST OF ABBREVIATIONS

AVE	Average Variance Extracted
CB-SEM	Covariance-Based Structural Equation Modelling
DHIMS	District Health Information Management System
GHS	Ghana Health Service
GSS	Ghana Statistical Service
HBM	Health Belief Model
HBV	Hepatitis B Virus
HIV/AIDS	Human Immunodeficiency Virus and Acquired Immune Deficiency Syndrome
MOH	Ministry of Health
NGO	Non-Governmental Organizations
NHIS	National Health Insurance Scheme
PLS	Partial Least Squares
SEM	Structural Equation Modelling
SM	Social Marketing
SPSS	Statistical Package for Social Sciences
UNO	United Nations Organization
WHO	World Health Organization

CHAPTER ONE

INTRODUCTION

1.0 Introduction

An overview of this chapter includes the background of the study, the research problem, the research aim and objectives, the scope of the study, significance and chapter dispositions.

1.1 Background to the Study

Hepatitis B infection is a potentially life-threatening liver disease and it is caused by the Hepatitis B virus (HBV) (World Health Organization, 2012). Candotti, Danso, and Allain (2007) reveal that although the virus spread much like HIV, it is 50-100 times more contagious. HBV is transmitted through unprotected sex, infected blood, bodily fluids (saliva, sweat), use of unsterilized infected sharp objects such as barbering clippers, pedicure equipment, ear-piercing and tattooing equipment, close household contacts, excessive alcoholism and from mother to a newly born baby (Thornley, Bullen, & Roberts, 2008). According to Sheng (2013), some of the high-risk groups include people who engage in unprotected sex, those who engage in tattooing and body piercing, people who share their personal items with others, barbers, health care professionals among many others. This implies that HBV has a behavioural underpinning, and thus, needs a behavioural change approach in its prevention (Raoofi, Kazemnejad, Alavian, & Hatefnia, 2016). Thus, social marketing intervention approach is required to change the behaviour of the people towards Hepatitis B Prevention (Quinn, Ellery, Thomas, & Marshall, 2010).

Globally, HBV poses a public health problem as it has been estimated that over 2 billion people have contracted the virus with nearly 350 million individuals being chronic carriers and even more worrying is the fact that about 780,000 people die annually as a result of

liver cancer (Zepp, Schmitt, Cleerbout, Verstraeten, Schuerman & Jacquet, 2009). Schmidt, Blum and Thimme (2013), assert that about 90% of these cases live in developing countries of which about 65 million reside in Africa.

Sub-Saharan Africa and some parts of Asia have been identified as the prevalent regions with rates greater than 8% (Custer, Sullivan, Hazlet, Iloeje, Veenstra & Kowdley, 2004; Margolis, Alter & Hadler, 1991). Lemoine, Eholié, and Lacombe (2015) postulate that the percentage of deaths due to cirrhosis in Sub-Saharan Africa between 1990 and 2010 was 31% with the highest percentages recorded in West Africa. In Ghana, as in most developing countries, the burden of Hepatitis B is a major health challenge (Ofori-Asenso & Agyeman, 2016), as a report from the Ministry of Health indicates that approximately 4 million people in Ghana are infected with the virus. The current national prevalence rate is greater than 8% (Ministry of Health, 2016). Fortunately, Hepatitis B virus can be prevented with a vaccine which is 95% effective (World Health Organization, 2012).

Scholars such as Ahmed, Ali, Qureshi and Hamid (2013) have argued that successful preventive vaccines have helped to reduce the burden of the HBV in the developed world. However, they asserted that the situation in the developed world regarding efforts made towards HBV prevention is in contrast with that of the developing world. Affirmatively, Ahmed et al. (2013) opine that the high incidence of HBV in developing countries could be attributed to poverty, lack of awareness of the disease, the absence of education amongst individuals, behavioural attitudes and cultural orientation. Similarly, Mkandawire, Richmond, Dixon and Luginaah (2013) and Dongdem, Kampo, Soyiri, Asebga et al., (2012) are also of the view that, lack of adequate health care, sexual behaviour patterns, little knowledge of the disease, limited education, cultural beliefs, fear of rejection and

stigmatization and attribution of the disease to supernatural or spiritual factors are all contributors to HBV high incidence.

Indeed, several studies (Raoofi et al., 2016; Mkandawire et al., 2013; World Health Organization, 2012) have shown that Hepatitis B is the only sexually transmitted disease that could be preventable by vaccination. However, de Wit, Schutten and Steenbergen (2005), are of the opinion that the majority of individuals who are likely to be exposed to the disease are not taking efforts to engage in the preventive behaviour. It is therefore important for social marketer's to conduct audience research, to understand why individuals behave the way they do, the target group's beliefs, perceptions and their value exchange proposition, in order to develop social marketing intervention programmes that could influence the people to adopt Hepatitis B preventive behaviour, since the disease is largely preventable (Dong, Sheng, Song, Xu & Ling, 2013). Hence, employing social marketing to change the behaviour of the people is highly suitable in this context (Quinn et al., 2010). Social marketing as defined by French and Blair-Stevens (2010) is "the systematic application of marketing concepts alongside other concepts and techniques to achieve specific behavioural goals for a social good".

Over the years, "social marketing" has been extensively applied to influence change and modify human related behaviour in health and social problems in developed countries (Kotler, Roberto & Lee, 2002; Gordon, McDermot, Stead & Angus, 2006; Tapp, Warren, Rhodes, Condon & Withall, 2013). However, according to Andreasen (2002), SM alone cannot be effective without the use of a theory. Similarly, Luca and Suggs (2013) and Tweneboah-Koduah, Braimah and Otuo (2012), suggest that including theories in social marketing intervention influences the success of the campaign as it can fortify and improve

the advancement of the message and consequently improve the effectiveness of the social marketing intervention programme.

Within the Ghanaian context, social marketing interventions and theories have been applied in different health related areas and have been used to address many social issues. For instance, Tweneboah-Koduah (2014), used the transtheoretical model to address HIV/AIDS testing intentions among Ghanaian university students. Manu and Siriam (1999) used the health belief model to address HIV/AIDS preventive behaviour among the Ghanaian student population. In addition, Abotchie and Shoker (2009) studied "cervical cancer screening among college students in Ghana using the health belief model". However, HBM's application to Hepatitis B prevention in the Ghanaian context seems limited. Meanwhile, Champion and Skinner (2008) and Rosenstock (1974), argue that the Health Belief Model has particular applicability in predicting behaviours directed at disease prevention, including participating in immunisation/vaccination programmes. In the light of this, there is the need to employ the HBM in social marketing interventions to predict Hepatitis B preventive behaviour in Ghana.

1.2 Problem Statement

Hepatitis B, commonly referred to as the "secret killer," and a major health threat globally, is fast spreading at an alarming rate due to the absence of knowledge among the populace and people engaging in risky behaviours, such as, sexual activities, tattooing and piercing of body parts (Mkandawire et al., 2013; Uddin, Shoeb, Solaiman, Marley, Gore, et al., 2010; Dontwi, Frempong, Bentil, Adetunde & Owusu-Ansah, 2010; Ahmed et al., 2013). Meanwhile interventions on HBV prevention by scholars and other stakeholders have generally focused on awareness creation, prevalence of the disease, need for policy, education and screening intentions (Adoba, Boadu, Agbodzakey, Somuah Ephraim &

Odame, 2015; Mkandawire et al., 2013; Martinson, Weigle, Royce, Weber et al., 1998). These interventions have not seen a corresponding change in HBV related behaviours because the human related behaviours facilitating the spread of the disease have been overlooked. Accordingly, there is the need for effective social marketing intervention programmes to change the behaviour of the people towards HBV prevention in Ghana.

Luca and Suggs (2013) have argued that SM intervention programmes that are not based on theories are bound to fail. This is because interventions that are grounded on theories improve the success of the programme as it provides the framework for understanding the target group. Over the years, behaviour change models to social marketing programmes have been applied extensively in the developed world and have witnessed many successes (Yazdanpanah, Forouzani & Hojjati, 2015; Orji, Julita, Vassileva, Mandryk, 2012; Wettstein, Sugss & Lellig, 2012; McGovern, 2007; Andreasen, 2002). Similarly, Hochbaum (1958) in an attempt to understand why people failed to be part of a free tuberculosis screening programme proposed the Health Belief Model as an effective framework or model when one wants to predict and understand preventive health related behaviour.

Notably, in Ghana, social marketing interventions and theories have been applied in different health related areas and have been used to address many social issues (Afriyie, Amponsah, Antwi, Nyoagbe & Bugyei, 2015; Tweneboah-Koduah, 2014; Tweneboah-Koduah & Owusu-Frimpong, 2013; Manu & Siriam, 1999; Abotchie & Shoker 2009). However, it is surprising to find that not much is done, particularly on its application to HBV prevention in Ghana. In attempting to fill this gap, this study sought to understand how the HBM in social marketing could be used to predict and understand HBV preventive behaviour in Ghana (Hochbaum, 1958).

1.3 Research Objectives

The aim of this research is to apply social marketing with the aid of the Health Belief Model to effect positive behavioural change towards Hepatitis B prevention in Ghana. To achieve the set goal, below are the research objectives that the researcher sought to address:

1. To determine the relationships between the HBM constructs and Hepatitis B preventive behaviour.
2. To determine the moderating role of place of residence on the relationship between the HBM constructs and Hepatitis B preventive behaviour.

1.4 Scope of the Study

This research was undertaken in two communities (slum and non-slum) in the Greater Accra Region. Slum settlements are characterised by poverty, overcrowding, poor housing structures, lack of good drinking water and lack of social amenities (United Nations Human Settlement, 2003). According to Amidu, Alhassan, Obirikorang, Feglo, Majeed et al. (2012), people living in slums are highly susceptible to communicable/viral diseases of which Hepatitis B is no exception. For instance, a study by Amidu et al. (2012), on Hepatitis B revealed that the disease was highly endemic in Aboabo and Tafo both slum communities in the Ashanti Region with prevalence rates ranging between 9.02% and 10% respectively. Similarly, Owusu, Agyei-Mensah and Lund (2008) assert that majority of slum dwellers engage in different kinds of risky behaviours including tattooing, piercing of body parts, living in crowded environments, sharing personal belongings and thus expose them to Hepatitis B, and are therefore suitable candidates for this study.

On the other hand, anecdotal evidence suggests that people living in formal or non-slum settlements are free from communicable diseases, mainly because they live in well-

structured or organised areas, are knowledgeable, can afford treatment of diseases and mostly engage in preventive health behaviours. It is in this vein that, the researcher selected these two extreme communities (Chorkor and its environs, West and East Legon) to ascertain whether place of residence has an impact on Hepatitis B preventive behaviour.

1.5 Significance of the Study

The research relevance can be seen from three perspectives: research, practice and policy. Primarily, the current study expands the disputably inadequate literature in social marketing and Hepatitis B from a developing country context. This will pave way for future research in this area and will also go beyond the current research on social marketing by examining the effectiveness of social marketing to encourage Hepatitis B preventive behaviour. Second, the findings of this study can inform social marketers' and other stakeholders of best practices to apply in Hepatitis B interventions for behavioural change in Ghana and Africa as a whole. Lastly, the findings of this study could also inform the policy making bodies (upstream) about how best to develop disease awareness and prevention policies that will encourage behaviour change towards Hepatitis B specifically in Ghana and other developing countries in general.

1.6 Chapter Disposition

This study is divided into six chapters. Chapter one is made up of the general introduction to the study, the problem statement, aims and objectives of the study, scope of the study and the significance of the study. Chapter two consists of the contextual background information, while the Chapter three includes literature review and the conceptual framework. The methodology and the sources of data employed is in chapter four. Chapter five presents and discussion of the findings. Finally, chapter six provides the summary, conclusions and recommendations from the study. These are briefly discussed below:

Chapter One – Introduction and Background

This is the first chapter of the study and consists of the background of the study, statement of the problem, research objectives and research questions deduced from the objectives, scope of the study, the significance of the study and the chapter organisation.

Chapter Two – Contextual Background of the Study

This chapter spells out the overview of Ghana, the historical background of Hepatitis B in Ghana, health facilities in Greater Accra. Other areas of concern in this chapter include the overview of some communities prone to Hepatitis B and efforts made so far by key stakeholders to reduce the Hepatitis B menace in the country.

Chapter Three –Literature Review and Conceptual Framework

Chapter three is concerned with review of literature applicable to the research. Some of the areas captured as part of literature include Social marketing and its definitions, Benchmarks for determining genuine social marketing programs, Social marketing and public health initiative, both traditional and social marketing mix. The chapter also looks at some possible health related fields where social marketing have been used. It also reviews behavioural change theories and their unique applications in social marketing. The conceptual framework and hypothesis are drawn from the literature review.

Chapter Four – Research Methodology

The research approach, the research design and sources of data appropriate for this research are all discussed in this chapter. It also presents the sampling design which entails, the study population, sampling size and sampling technique. In addition, the data collection instrument and the mode of data analysis are discussed in this chapter.

Chapter Five – Data Analysis and Discussion of Findings

This chapter discusses and presents an analysis of the data collected. In other words, the study presents a descriptive and inferential analysis of the data. The relationships between the latent variables are established using structural equation modelling (SEM) at this stage. This chapter also contains discussions of major findings in this research.

Chapter Six – Summary, Conclusion and Recommendations

Finally, summary of the major findings and conclusions are discussed in this chapter. It also provides the researcher's recommendations, contributions/future research direction and limitations of the study,

CHAPTER TWO

CONTEXT OF THE STUDY

2.0 Introduction

In Ghana, Hepatitis B has become a major health threat (Owusu-Ansah, 2014). A report from the Ghana Health Service has revealed that one out of every six individuals has the disease, constituting forty (40) percent of the population (Ghana Health Service, 2009). The regional distribution of the disease indicated a total of 40,648 reported cases from nine (9) out of ten (10) regions in Ghana in 2015. No report was received from the Northern Region. Table 2.1 displays the breakdown of the regional distribution.

Table 2.1: Reported Hepatitis B Cases by Regional Distribution, Ghana, 2015

Region	Cases	%
Ashanti	6,589	16.20%
Brong-Ahafo	3,236	7.96%
Central	5,744	14.13%
Eastern	742	1.83%
Greater Accra	8,846	21.76%
Northern	No Report	No Report
Upper East	1,079	2.65%
Upper West	5,840	14.37%
Volta	660	1.62%
Western	7,912	19.46%
Ghana	40,648	100%

Source: MOH (2016)

It is therefore appropriate that this study focused on the capital city of Ghana as it recorded the highest Hepatitis B cases. This is also particularly relevant because social marketing interventions are geared towards areas where a particular phenomenon is prevalent (Hastings, MacFadyen & Anderson, 2000).

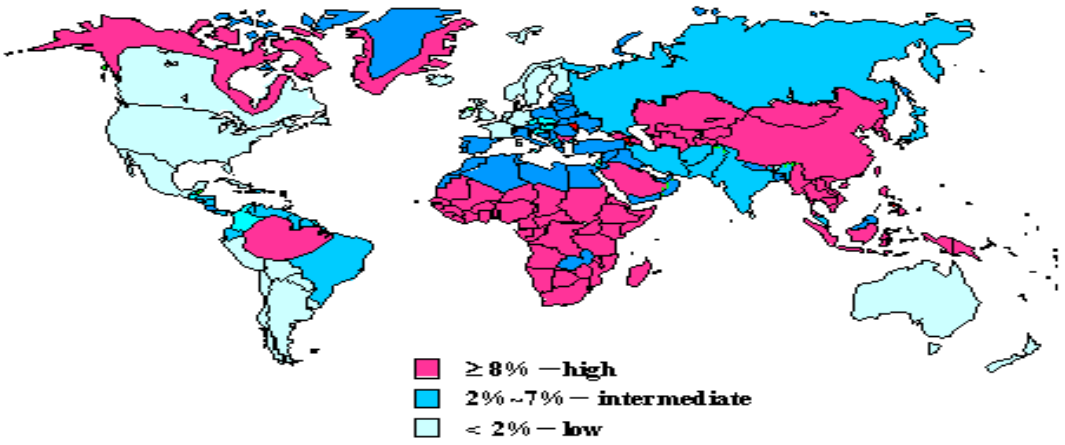
The next chapter looks at the Historical overview of Ghana, Hepatitis B profile, interventions by stakeholders to reduce Hepatitis B infection/ transmission and the institutions involved with Hepatitis B prevention in Ghana.

2.1 Background of Hepatitis B

The Hepatitis B Virus was originally discovered by Samuel Blumberg and his co-workers which they originally called the 'Australian antigen' because the virus was found in the blood sample of an Australian patient (Blumberg, & Alter, 1965; Blumberg, 1977). The virus was fully described in the 1970s (Dane, Cameron & Briggs, 1970).

Globally, the threat posed by the Hepatitis B Virus epidemic continues to assume alarming proportions in areas of public health and national development. Based on chronic Hepatitis B prevalence rates, WHO has demarcated the world into three major blocks: high, intermediate and low prevalence. *Sub-Saharan Africa and some part of Asia are considered countries with high Hepatitis B infection prevalence of equal to or more than 8%.* South America, Eastern Europe, Western Europe, and the Indian subcontinent are the intermediate prevalence areas with rates ranging between 2% and 7%. Australia, The United Kingdom (UK) and North American countries are considered as low endemic areas of chronic infection less than 2%. The global distribution of chronic carriers of Hepatitis B virus is represented in Figure 2.1.

Figure 2.1: Hepatitis B World Distribution Map



Source: WHO, 2012

According to the National Institute for Health and Clinical Excellence, chronic Hepatitis infection can be treated in high income countries with the combination of drugs and that people with severe liver cases are given liver transplants as well as surgery and chemotherapy for liver cancer patients to prolong their lives. These options are unfortunately unavailable to those in low-income countries due to the expensive nature of these treatments.

Hence the only option for them is to stick to the saying that, "prevention is better than cure" through the use of the vaccine. In a report generated by WHO in 2012 over one billion doses of Hepatitis B vaccine have been effectively and safely administered to prevent both children and adults from contracting the disease. The vaccine which was introduced in 1982 is said to have a 95% capacity to prevent an infection from the virus.

Hepatitis B has been recognised as one of the eight contagious or infectious diseases in the World and as a result, the WHO has recommended the use of vaccination to help control

this health menace (World Health Organization, 2012). For the purpose of propagating this agenda WHO in 1991 instructed all countries to incorporate Hepatitis B vaccination into their national vaccination programmes. But as of 2006, only 168 countries had acted according to the directive with most countries coming from East and South East Asia, Australia, Western Europe and the Middle East (World Health Organization, 2006).

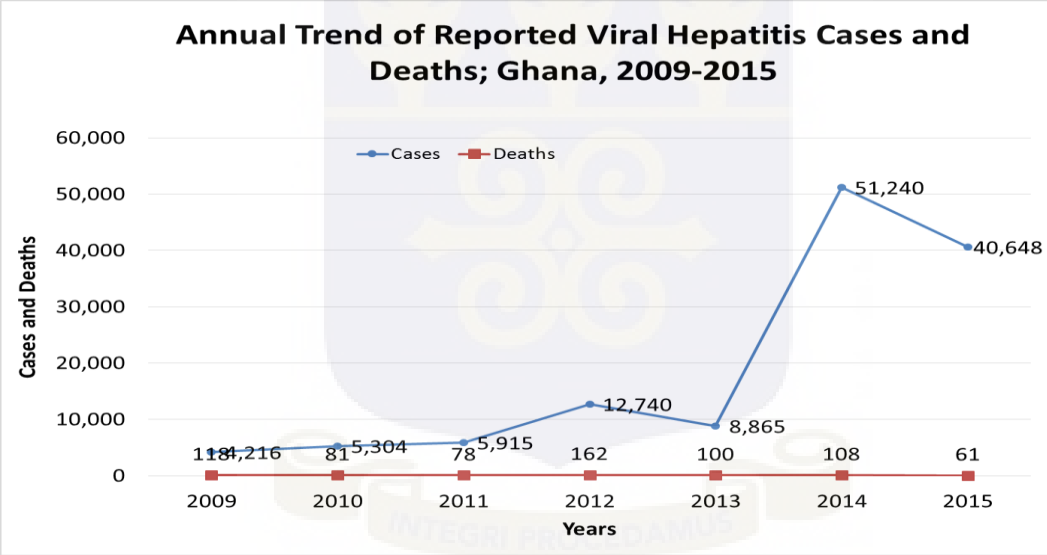
2.1.1 Hepatitis B in Sub-Saharan Africa and Ghana

Africa, the second largest continent in the world covers about 3,030,000 km^2 of land, i.e. one of the global land area. It is populated with an estimated 800 million inhabitants which account for 12% of the world's population. Although the high prevalence of HBV has been well documented in well-equipped correctional facilities, such information on the exact prevalence of the deadly disease has been sparse in Africa (Mathews, Beloukas, Malik, Carlson Ogwu et al., 2015). According to Molla, Munshea and Nibret (2015), this could be attributed to underreporting and ineffective data collection strategies in the continent. However, the little data available indicates that about 65 million people residing in Africa live with HBV (Schmidt et al., 2013).

The history of Hepatitis B in Ghana dates as far back as the 1970's as a study by Morrow, Sai and Barker (1971) reveal that Hepatitis B was on the increase in Accra particularly in the shanty areas with poor sanitation and housing. In 2012, out of 842 blood specimen investigated at the National Public Health Reference Laboratory, 175 tested positive for Hepatitis B (20%) using HBsAg test. Again, surveillance data on Hepatitis from the Disease Surveillance Department shows an increasing annual trend of reported Hepatitis cases from all the ten regions of Ghana.

For instance, in the year ending 2012, there was a record of 12,740 cases with 162 deaths representing a 110% increment more than the year 2011 were 5,915 cases with 78 deaths were reported. In 2013, the reported cases reduced to 8,865 from 12,740 in 2012. However, the number of reported deaths increased from 78 to 100. The reported cases of hepatitis B increased to 51,240 in 2014 and the current data on HBV cases in 2015 stands at 40,648. These are disturbing indications and as such serious measures need to be put in place to reduce this health menace in Ghana. Figure 2.2 presents the annual trend of Hepatitis B cases in Ghana.

Figure 2.2: Annual Trend of Hepatitis B Cases and Deaths



Source: MOH, 2016

It is estimated that about 4 million of Ghana's population is infected with the virus (Ministry of Health, 2016). However, the prevalence of the disease varies with geographic areas, age and residence (Ofori-Asenso & Agyeman, 2016). For instance, in a hospital-based study conducted in the country, it was revealed that HBV was high among blood donors with rates ranging between 6.4% and 10%, 6.4% among pregnant women and 16% for children among the general population (Acquaye, 1991; Martinson et al., 1998).

Another hospital-based study conducted in two different hospitals in Jirapa and Tumu in the Upper West Region of Ghana by a Cuban Medil Brigade has shown that in 2009, 128 admitted patients tested HBV positive and that the bulk of these cases fell within the 30-44 year group (Ghana Health Service, 2004). In a study by Freimanis, Owusu-Ansah and Allain (2012), they found a prevalence rate of 13.8% among rural blood donors aged 17-60.

Again, in a cross-sectional study of children aged 15 years and younger in the rural Ashanti-Akim North district of Ghana, Martinson et al. (1998) determined the HBV prevalence rate to be 5.4%. A different hospital-based study of pregnant women in Accra the capital of Ghana also recorded a prevalence rate of 2.5% (Lassey, Damale, Bekoe & Klufio, 2004). Adjei, Armah, Gbagbo, Amponsah et al. (2006) performed a cross-sectional study of prison inmates in two regional central prisons in Ghana and found that the HBV prevalence was 19%. Prisoners have been found to be part of the high-risk groups of Hepatitis prevalence in Ghana. The congested nature of most prisons in the country coupled with the fact that prison inmates are not usually screened before serving their prison sentence exposes them to HBV infection.

This current study is designed to investigate two communities (slums and non-slums) in the Greater Accra Region to ascertain their engagement with Hepatitis B preventive behaviour as these are two extreme communities with different cultures, opinions and perceptions. These communities are discussed below:

2.1.2 Slum Communities

According to a Population Division of the UN Department of Economic and Social Affair, slums in the Greater Accra Region accommodate about 58% of Accra's total population (UN-Habitat, 2003). According to the report, nearly one-third of the population of the Greater Accra region lives in shanty areas which are characterised by poor living conditions, high population density, overcrowding, poverty, insecurity, social exclusion, lack of health care, poor social amenities such as the absence of safe water and sanitation systems.

Meanwhile, studies have revealed that HBV infections can often be related to rapid urbanisation, cities that are over populated and poor living conditions (Ofori-Asenso & Agyeman, 2016). In addition, Owusu, Agyei-Mensah and Lund (2008), assert that, the inhabitants of slums normally live in crowded rooms and often share beds, use the same toothbrushes, share one towel and may even share razor blades and other personal items which increase their risk of infection if they live with someone with the Hepatitis B virus since the disease is highly contagious (UN-Habitat, 2003). Ghana forms part of the 168 countries that have effectively introduced Hepatitis B vaccine into their National immunisation programme since 2002, particularly, for newly born babies (6-14 weeks), however, there is no programme for mass screening and vaccination for children born before 2002, and the general public (Owusu et al., 2008). Despite the efforts of Ghana's National Health Insurance Scheme (NHIS) to eliminate financial barriers to the access to medical services since 2003, Hepatitis B screening and vaccination in the country, apart from the expanded programme on immunisation, are still not covered under the scheme.

In the Greater Accra region, areas such as Chorkor, Old Fadama (Sodom and Gomorrah), Nima, Mamobi, Ashaiman and Jamestown have been identified as slum communities. Most

of the slum dwellers in these communities are refugees, displaced persons, and migrants from the rural parts of the country, particularly, the Northern region and from other West African countries who come to the capital seeking greener pastures (Owusu-Ansah 2014). Mostly, slum inhabitants experience poor living conditions, poverty, have more health problems, less education, social services and employment and have very low income (United Nations Human Settlement, 2003). This makes them more susceptible to diseases such as Hepatitis B virus. For instance, a study conducted in the Ashanti Region by Amidu, et al. (2013), reveals that Hepatitis B is highly endemic in Aboabo and Tafo (slums) with prevalence rates ranging between 9.02% and 10% respectively. The implication from the above study is that there is high incidence of HBV in the slums, so it is appropriate for this study to situate the scope to slums.

2.1.3 Non-Slum Communities

An anecdotal evidence, suggests that people living in formal or non-slum settlements are free from communicable diseases, mainly because they live in well-structured and acceptable environments with functional drainage and sanitation conditions as opposed to slum settlements. People living in non-slum communities are presumed to be knowledgeable, can afford treatment of diseases and mostly engage in preventive health behaviours.

It is in this vein that the researcher selected these two extreme communities (Chorkor and its environs, West legon and East Legon) to ascertain whether the place of residence and status has an impact on Hepatitis B preventive behaviour.

2.2 Historical Overview of Ghana

Ghana is a country bordered by the Gulf of Guinea and the Atlantic Ocean, in Sub-Saharan West Africa. It shares borders with Togo towards the East, Cote D'voire towards the west, and the Republic of Burkina Faso to the north. It has a land mass of 238,537 km^2. The nation has been demarcated into ten (10) regions; Western, Central, Greater Accra, Volta, Eastern, Ashanti, Brong-Ahafo, Northern, Upper East and Upper West. The ten regions in Ghana are further sub-divided into 216 municipalities and district assemblies (Ministry of Local Government and Rural Development, 2012).

Ghana's economy is dominated by agriculture as it has been revealed that about 60% of Ghanaians are into agriculture as a source of livelihood. Ghana is placed second when it comes to cocoa exportation in the world and other economic commodities such as gold and lumber. The population of Ghana is approximately, 28 million with Ashanti and Greater Accra Regions being the most populated with 19.4% and 16.3% of the population respectively; a population growth of 3.4% and 4.4% respectively has been recorded (Ghana Statistical Service, 2010).

Greater Accra region is the smallest among the ten administrative regions and it occupies a total land surface of 3,245-kilometre square or 1.4 percent of the total land area of Ghana. Even though it is the smallest region, it has a population of 4,010,054 and the most densely populated region with a density of approximately 1,236 persons per square kilometre (Ghana Statistical Service, 2014).The Region's population density is as a result of rural-urban migration. This poses major pressure on the limited number of health infrastructure and shelter, which results in housing and health challenges.

2.3 Health Facilities in the Greater Accra Region

As of 2007, there were 466 health facilities, which constitute teaching hospitals, health centres and clinics, polyclinics, maternity homes (MOH, 2010). The private health facilities account for 366 out of the overall health facilities in the region. The implication is that access to health facilities in the non-government health facilities are expensive as opposed to the government owned health facilities and this prohibits residents living in slums to access quality health care in relation to screening and engaging in the Hepatitis B preventive behaviour to protect themselves from this silent killer.

2.4 Human Resource and Infrastructure in the Health Sector

The health sector workforce in Ghana has recorded significant improvements in education and production of health professionals over the years (Ministry of Health, 2013). That notwithstanding, some important issues remain to be addressed. The doctor-patient ratio as of 2015 stood at 1: 10, 000 as compared to the 1: 6,000 revised standard set by WHO in 2012; thus 1 doctor to 6,000 patients and an estimated national nurse to patient ratio of 1: 971 (GHS, 2015). It becomes very challenging when someone contracts the disease because the capacity of our health professionals is woefully inadequate.

Another problem the Ghana Health Service is still battling with is inadequate infrastructure for effective health delivery. The substantial increases in hospital attendance without a correspondent increase in health facilities have stretched the already existing ones beyond their capacity. As of 2009, there were 3,011 health facilities in the country with a lot of regional and district disparities where Ashanti Region has 549 health facilities as the highest in the country compared to 135 in the Upper West Region as the lowest with an estimated target the population of 4, 725,046 and 677,763 respectively (Ghana Health

Service, 2009).The situation is almost the same at the district level with some districts lacking district hospitals.

2.5 Efforts Made by Key Stakeholders to Eradicate Hepatitis B in Ghana

Even though Hepatitis B has been found to be a major health threat in Ghana, not much has been done by the government of Ghana to control this menace confronting the Ghanaian populace. In the next sub-sections efforts made by the government, Ministry of health, Ghana Health services and Non- Governmental Organisations (NGOs) are discussed.

2.5.1 Government

The government of Ghana, since 2003, has committed to providing Hepatitis B vaccination through the expanded programme on immunisation to newly born infants (6-14 weeks). However, there has not been any programme for mass screening and vaccination for children born before 2003, and the general public (Owusu et al., 2008). The implication is that all those born before the introduction of the Expanded Programme immunisation (EPI) remain at risk of acquiring the disease.

2.5.2 Ministry of Health

The Health Ministry has the responsibility of managing the health sector and also ensuring that there are performance and accountability within the sector (Ministry of Health, 2007). The Ministry provides the overall policies, supervise the engagements of stakeholders and other partners involved in the health sector For instance, in 2014, the Ministry developed a national policy on viral Hepatitis (Ministry of Health, 2014). The aim of the policy document is to provide directions and guidance for all stakeholders to follow as a way of improving the health standing of HBV infected individuals and those who at risk of contracting the virus in Ghana.

In addition, Ministry of Health in collaboration with Roche Pharmaceuticals signed a partnership agreement on 16th May 2016, to improve access to care to "at-risk-groups" and Hepatitis B patients. MOH's partnership with Roche is a major step forward for Hepatitis B activities in Ghana. The focus on building disease awareness and improving diagnostics, combined with training for healthcare professionals and improved access to treatment will help to change the landscape of the disease in the right direction (Ministry of Health, 2016).

2.5.3 Non-Governmental Organisations (NGOS)

The Ghana Hepatitis B Foundation (GHBF) was set up in 2007, by Owusu-Ansah Theobald**.** This foundation seeks to promote awareness of the prevalence and incidence of Viral Hepatitis in Ghana and has been providing free screening and Hepatitis B vaccination to the general public. Other NGOs helping to curb this health menace include; Okyeame Kwame Hepatitis B Foundation, Comfort Foundation and many others. These NGOs are focused on screening for HBV and creating HBV awareness. Some of the interventions are discussed in the next section.

2.6 Hepatitis B Intervention Programmes in Ghana

As a way of helping to reduce this epidemic, Ghana has joined WHO and many other countries to celebrate Hepatitis B day which is held on the 28th day of July every year (Citi News, 2014). The themes for the year 2014, 2015 and 2016 were, (i) "Know it, get screened, get tested and get vaccinated"; (ii) "This is Hepatitis B, Know it, Confront it"; (iii) "Know Hepatitis B, Act Now" respectively.

Okyeame Kwame Hepatitis B Foundation (OKF) which was established in 2009, organises a yearly campaign to create the awareness of the disease by educating and giving free Hepatitis B screening to the Ghanaian populace (Joy News, 2016). For instance, in 2014,

as a way of raising funds for a screening campaign, Okyeame organised a host of stars in Ghana to lend support by washing cars of customers at the Cahaya car spa in Accra (East Legon) to enable him to raise money for his Hepatitis B screening project. The event was themed 'Eradicating Hepatitis B in Ghana' (Joy News, 2014).

The Global media foundation (Glomef), an NGO in their effort to also help mitigate this health menace, took the challenge to intensify public education/awareness of the disease among market women and farmers in rural communities in the Brong-Ahafo Region (Ghana News Agency, 2013). Also, a durbar was held by Dr Ayerh, who is the vice president of the Hepatitis B society in Ghana, on the theme "This is Hepatitis B, Know it, Confront it" which was aimed at creating awareness about the disease. He advised all Ghanaians to get tested and vaccinate against such a highly infectious disease (Ghanaweb, 2013). In another development, there was an intervention held in Kumasi on the theme "Save Your Liver Now" (Liver support Network, 2009). The focus of the campaign was to create the awareness of the disease and to also, sensitise the people on how close the disease is to us than we think.

Although, there have been enormous efforts by several stakeholders to reduce the burden of HBV transmission in Ghana, yet, the reported cases keep rising. The reason for the increase could be that the interventions by the various stakeholders failed to recognise the human behaviour underpinning the spread of the disease. All the interventions focused on awareness creation rather than the behaviour of the individuals. Participating in screening campaigns and also taking the preventive vaccine is a behaviour which when thoroughly looked into and addressed from the perspective of the individual could help prevent this epidemic in the capital city of Ghana. This study, therefore, seeks to employ the Health

Belief Model in social marketing interventions to predict Hepatitis B preventive Behaviour among slum and non-slum residents in the Greater Accra Region.

CHAPTER THREE

LITERATURE REVIEW

3.0 Introduction

Social marketing, as a discipline, has seen tremendous growth since its inception in the 1970s (Gordon, 2012). The discipline has garnered important successes on social issues in different areas such as issues relating to the environment, safety, health and community involvement (Lee & Kotler, 2011). In addition, social marketing has demonstrable success in influencing individual behaviour as a way of improving their health as well as their well-being (Andreasen, 1995; Hastings, 2007). For instance, scholars have used SM to examine obesity (Wymer, 2011); smoking (MacAskill, Stead, Mackintosh & Hasting 2002); tobacco use (Wolburg, 2006); physical activity (Huhman, Potter, Wong, Banspach, Duke & Heitzler, 2005); problem gambling (Powell & Tapp, 2009); and HIV/AIDS testing intentions (Tweneboah-Koduah, 2014). Influential works draw on the theoretical perspectives (communication and behavioural theories), from different fields including anthropology, sociology and psychology to provide frameworks to structure behaviour and attitudinal change initiatives (MacFadyen, Stead and Hastings, 1999).

3.1 Origin of Social Marketing

The introduction of 'SM' is attributed to Wiebe, whose article entitled, "*Merchandising commodities and citizenry on Television*", by asserting "Why can't you sell brotherhood and rational thinking like you sell soap?"(Weibe, 1951). This question drew scholar's attention to how commercial marketing could be applied to induce behaviour in the non-profit arena. (Gordon, McDermott, Stead & Angus, 2006; Weibe, 1951). Weibe (1951) evaluated four different campaigns and concluded that not-for-profit campaigns that are

similar to traditional marketing campaigns have a better chance of being successful (Stead & Hasting, McDermott, 2007). Thus, marketing could actually be effective in solving social problems.

Prior to SM, social advertising was a predominantly used mass-media approach to social change. Although this approach lacked marketing concepts and principles such as segmentation and exchange (Fox & Kotler, 1980), it was heavily employed in social campaigns. The lack of marketing concepts and principles in social change campaigns led international development agencies to conduct family planning activities in developing countries using marketing principles in the distribution of contraceptive products in the 1960s (Andreasen, 2006). This move encouraged practitioners and marketing academics in the developing countries to examine the phenomenon. As a result, MacFayden et al. (1999) employed audience segmentation and customer oriented approaches to optimise health campaigns. The attention of academics was drawn to the success of these activities and started debating on extending the commercial marketing principles to other fields (Andreasen, 2006). Hence, social marketing came about as a result of the successes which had been chalked by practitioners and the ensuing academic debates in the marketing community.

Social marketing was officially launched by Kotler and Zaltman (1971) in an article, "Social marketing: an approach to planned social change". They indicated that social causes can progress more effectively through the application of traditional marketing concepts to impact social change. On the contrary, scholars were of the view that, marketing concepts/principles should not spread to other fields, as replacing physical products or services with an idea or values could endanger the economic exchange concept (Andreasen, 2006). Others also were of the view that relating marketing principles to other fields could

be abused as propaganda and could result in social control (MacFadyen, et al., 1999). However, these contentions did not prevent marketers from implementing social marketing principles in other areas and as a result, researchers have clarified that social marketing deals primarily with changing behaviour (Andreasen, 2006). This uniqueness differentiates social marketing from other social change programmes.

Despite the rapid growth of interest in social marketing, the discipline is still misunderstood by many public health professionals as to what social marketing really is and its distinction from fields like communications and behaviour mobilisation (Andreasen, 1995). The next section provides definitions and explanation for social marketing.

3.2 Definitions of Social Marketing

According to Kotler and Zaltman (1971), SM is the design, implementation and control of programmes calculated to influence the acceptability of social ideas and involving considerations of product planning, pricing, communication, distribution and marketing research. The definition by Kotler and Zaltman brought about so many arguments and contentions among scholars since it was difficult to differentiate this term from 'socially responsible marketing' which seeks to rectify the harm/damage that commercial marketing activities or practices that cause the society (Andreasen, 2004). This definition limits the purpose of SM to influencing the acceptability of social ideas. However, social marketing involves much more than that, with the primary objective of changing attitudes, beliefs and behaviour of the target audience for a societal good (Andreasen, 1995).

Supporting the definition by Kotler and Zaltman (1971), Lazer and Kelley (1973) postulated that, the understanding of social marketing should be extended beyond using

marketing techniques and principles to influence social good, to include the rectification of ills to society caused by commercial marketing.

In an attempt to address the limitations of the earlier definitions, Kotler and Roberto (2002), broadened the definition of SM as *an organised effort conducted by one group (the change agent), that aims to influence a target audience to accept, reject, modify or abandon a behaviour*. This definition though an improvement still had some limitations and lack of clarity on issues such as the domain of social marketing, which is behaviour change as the primary objective (Andreasen, 1995). In addition, Andreasen (2004), defines SM as the application of commercial marketing technologies to the analysis, planning, execution and evaluation of programmes designed to influence the voluntary behaviour of target audiences in order to improve their personal welfare and that of the society.

Deducing from Andreasen's definition, SM is not about forcing or punishing people to adopt a behaviour, rather, the individual must voluntarily accept to engage in the behaviour change (Andreasen, 2004). Further, the definition suggests that social marketers can incite change by applying the exchange concept. According to Luca and Suggs (2013), the exchange theory in social marketing suggests that people will give up an old undesirable behaviour after conducting the cost-benefit analysis. Thus, when the benefits outweigh the cost, then they are likely to change behaviour. Relating this to the current research means that social marketers should provide motivation that will influence the individual to drop the undesirable behaviour of not preventing him/herself from acquiring the virus and adopt practices that will lead to Hepatitis B Prevention (Gordon, et al., 2006). Thus, the benefits should outweigh the perceived consequences of changing to a new behaviour (Kotler & Lee, 2008). In addition, the definition spells out that, it is important for social marketers to use marketing principles and concepts: consumer research, segmentation and targeting

alongside the traditional 4Ps (MacFadyen et al., 1999). This argument is essential in designing any social marketing intervention, which means that different individuals and communities are bedevilled with a diverse health related menace. As a result, interventions should be directed at areas where they are best needed (Andreasen, 2002). Last but not the least, the objective of every SM intervention programme is to optimise the well-being of the society or community rather the implementers. This sets SM apart from other marketing orientations (MacFadyen et al., 1999). In a previous study, Andreasen (2002) argued that the uniqueness of social marketing is its importance on voluntary behaviour change. In addition, Kotler, Roberto and Lee (2002) contend that social marketing has nothing touchable to offer, but rather encourages the target audience to act in a desirable manner. It is on this premise that both practitioners and scholars suggested that the underlying aim of social marketing is not to promote social ideas and concepts as recommended by Kotler and Zaltman (1971), but rather influencing behaviour (Andreasen, 2002).

Furthermore, Kotler and Lee (2008) assert that Social marketing is a process that applies marketing principles and techniques to create, communicate and deliver value in order to influence target audience behaviour that benefits society (public health, safety, the environment and communities) as well as the target audience. They emphasised that social marketers must recognise and understand what their target audience perceive as barriers in order to influence behaviour change.

However, these definitions also failed to touch on the role of other important techniques, such as the theory of understanding behaviour. Further, Luca and Suggs (2013), postulate that, for any SM intervention to be successful, an appropriate behavioural theory must be applied to understand the behaviour of the target group since understanding the target group is vital to the effectiveness of every intervention.

French and Blair-Stevens (2010) define SM as the systematic application of marketing alongside other concepts and techniques to achieve specific behavioural goals for social good. The National Social Marketing Centre (2006) advocated that every successful definition of SM should review three major elements, namely:

- It should attain a particular "social good" as opposed to organisational benefit;
- It should be a systematic process that addresses short, medium and long-term issues; and
- It should utilise a range of marketing techniques and approaches.

Interestingly, social marketing lacks definitional clarity in spite of the various definitions given by several scholars. It has most times been confused with cause promotion, non-profit marketing and public sector marketing (Hasting & Saren, 2003). According to Kotler and Lee (2008), cause promotion primarily focuses on efforts to raise awareness on social issues, such as domestic violence teenage pregnancy, global warming and child abuse. They further argued that non-profit sector marketing is often employed to support the utilisation of the organisation's services, advocacy efforts, volunteer recruitment and fundraising. In addition, Kotler and Lee (2008) define public sector marketing as activities used to affirm the utilisation of governmental agency products and services such as community clinics. That is why Niblett (2005) asserts that SM is not to embark on social advertising or communication but the bottom line is to engender behaviour change.

From the above explanations varying across extant research, three major features are predominant (French, Merrit & Reynolds, 2011):

- The focus of all social marketing programmes is to influence societal good while achieving specific behavioural goals.

- It involves a set of principles and techniques which influence strategy, policy and the carrying out of social change programmes.
- It is a step by step process that is characterised by learning and evaluation.

Notwithstanding the definitions above, there is still some confusion as to what social marketing is or is not. However, Andreasen (2002) attempts to simplify matters by offering six key benchmarks that a genuine social marketing intervention should meet. Though the author concurs that it is unlikely for a campaign to meet all six benchmarks, they are a starting point for identifying and distinguishing a real SM endeavour from other social practices.

The six criteria are discussed in the next sections.

3.3 The Benchmark Criteria for Genuine Social Marketing Intervention

3.3.1 Focus on Behaviour Change

According to Andreasen (2002), the first benchmark of SM is to focus on behaviour change. For instance, for any SM campaign to be successful there has to be a clear behaviour that the social marketer would want the target group to adopt. However true success comes only when the individual takes action to adopt the desired behaviour (Kotler & Lee, 2008). The bottom line is for consumers to accept behaviour change and adopt desirable behaviour which is the definitive objective in social marketing. For instance, the practice of a specific health behaviour such as vaccination to prevent Hepatitis B virus infection.

In addition, even though, extant literature indicates that the ultimate aim of every SM intervention programme is to influence behavioural change in society and be able to sustain the behaviour overtime, the greatest difficulty of it is that Social marketing involves "rewarding good behaviours" instead of "punishing bad ones" (Kotler & Lee, 2008).

According to French et al. (2010), behavioural controls must be put in place to influence the behaviour in a given context when all else fails. It is therefore important that the social marketer creates a conducive and an enabling environment which facilitates desired behaviour and removes or minimises competition. Nevertheless, for behaviour change to occur, it is important for social marketers to conduct audience to understand everything about the target group. This is termed as "customer insight". The next sub-section discusses "customer insight".

3.3.2 Customer Insight

Customer insight is conducting research to have a deeper understanding of why people act like they do, what actually informs their conduct, what they value and what they believe would help them to change their behaviour. The assumption is made that, customers have good reasons for doing what they do, thus, the social marketer's task is to have an in-depth knowledge of the target audience through research to enable them to unearth the required behaviour and provide alternative solutions to them. This is relevant because, it helps to identify the specific things that would motivate the target group to adopt the desired behaviour (Morris & Clarkson, 2009). In a similar vein, Kotler and Lee (2008) assert that, for any SM intervention programme to be effective, the implementers of the campaign must do audience research which will enable them to understand the target groups perceived barriers and benefits to change. They further argued that the barrier and benefits to change may be real or perceived but the most important issue to those who seek change in behaviour is that, these two are always from the perspective of the target audience. For instance, Wettstein, Suggs and Lellig (2012), argue that to understand why people expose themselves to HBV infection, it is logical that the social marketer does a thorough investigation to determine their beliefs, attitudes and how they perceive Hepatitis B

infection. This will enable social marketers to effectively segment the target audience based on their needs.

3.3.3 Segmentation and Targeting

Segmentation and targeting in traditional marketing are where marketers divide the entire group of interest into segments such as lifestyles, demographic or attitudinal and based on these segments the organisations select the ones that it can serve well. Similarly, implementers of social marketing design custom-made programmes that cater for the needs of the specific target audience (Donovan & Vlais, 2005).

Although, Segmentation in social marketing follows the same principle as commercial marketing, the difference between them is that, according to French (2009), traditional market segmentation is mostly based on 'psychographic' which allows marketers to group individuals based on their lifestyles, interests and opinions.On the other hand, segmentation in SM involves assigning the target audience into groups that exhibit similar characteristics, beliefs, values and behaviour rather than age, ethnicity or other demographic variables (French, 2009). Based on this, tailor-made campaigns are then designed to target the specific groups (Forthofer & Bryant, 2000).

3.3.4 Exchange

Exchange is an essential marketing concept, where rewards and barriers to desired behaviours need to be considered when designing a social marketing intervention programme, in order to develop a valued exchange proposition (Andreasen, 1994). He further postulated that free exchange takes place only when the target audience believes they will get as much value or more than they give (Andreasen, 1994). Social marketers must consider the motivations for people to willingly participate in the intervention

programme and offer rewards in return. The reward may be tangible or not (eg. Personal satisfaction). However, the challenge social marketer's encounter is how to increase the perceived benefits while reducing the perceived barriers confronting the target groups (Andreasen, 2002). According to Donovan and Henley (2003), the principle of exchange provides three lessons that are of great importance for social marketers:

- It offers valuable rewards to the target audience
- Recognises the price (e.g. money, time, physical discomfort) that the target group must give up for the promised rewards
- Acknowledges that the parties involved in the exchange must receive a benefit that is more valuable than what they have invested.

3.3.5 Competition

In SM, Competitions are the alternative behaviours and benefits that work to undermine the desired behaviour (Hastings & Saren, 2003). Individual's inability to overcome their current/present behaviour is a major challenge and a serious competitor to SM programmes (McDermott, Stead, Hastings, 2005).

Although both commercial and social marketing recognises the importance of distinguishing their product from others, their competitors are entirely different in nature. Whereas competition in commercial marketing mainly refers to organisations offering similar goods and service, competition in SM refers to the alternative behaviours that contest with the desired behaviour (Kotler & Lee, 2008). Therefore, McKenzie-Mohr and Smith (1999), propose that social marketers should use their campaigns to increase the benefits of the desired or acceptable behaviour while decreasing the barriers of the proposed behaviour in order to influence change.

3.3.6 The Social Marketing Intervention Mix

The traditional 4Ps focuses on satisfying consumers by providing solutions that meet their needs using product, price, promotion and place. This concept alongside other social marketing strategies has become the fundamental framework upon which social marketing thrives (Stead & Hasting, 1997). Hence leveraging on the marketing mix elements to design social marketing interventions is paramount to the success of all campaigns. In other words, integrating the marketing mix elements rather than simply creating advertising campaigns and slogans enhances social marketing intervention programmes effectiveness. The following sub-sections discuss the 4Ps and their application to social marketing.

3.3.6.1 Product

According to Grier and Bryant (2005), a product in SM describes the desirable behaviour and its resultant benefits which the target audience should adopt. For instance, taking Hepatitis B vaccine, with the benefit that the vaccine will prevent Hepatitis B virus infection. For the intervention to be effective, implementers of social marketing campaigns must ensure that the product offers the best solution to issues that are deemed important by consumers and what they perceive as value (Grier & Bryant, 2005)

3.3.6.2 Price

Unlike commercial marketing, price in SM is the cost or sacrifice the target audience make in exchange for the promised benefits (Gordon, 2012). It may include diminished pleasure, loss of time, change of lifestyle, embarrassment, psychological hassle and the consequences that may come about as a result of the behaviour change (Wood, 2008). Notably, the price in SM is always considered from the consumer's perspective. As a result, social marketers must set prices that the target group will be willing to give up (exchange) to adopt the behaviour.

3.3.6.3 Place

According to Grier and Bryant (2005), place in social marketing pertains to the location where the target group engages in the desired behaviour, or receive assistance that will enable them to perform the desired behaviour effectively, also referred to as action outlet. With regards to this study, the place is where the target audience receives the Hepatitis B vaccine. The place where the desired behaviour is performed plays a very critical role in influencing the decision of the target audience as to whether to perform the behaviour or not (Sheau-Ting, Mohammed & Weng-Wai, 2013). The greater the ease and convenience of accessing the Hepatitis B vaccine, the more likely it is that individuals will adopt the vaccination behaviour (Donovan & Henley, 2003).

3.3.6.4 Promotion

Kotler and Lee (2008) define promotion in commercial marketing as "persuasive communications designed to convey and deliver product benefits to inspire target audience to action". However, in social marketing, promotion is the offering of discounts in the form of incentives to enhance the attractiveness of the desired behaviour (Sheau-Ting et al., 2013). Mah, Deshpande and Rothschild (2006), argue that, like commercial marketing, the selection of the most suitable medium of communication, identifying and providing the right motivation that influences the performance of the behaviour are the two key promotional strategies in social marketing. Unlike commercial marketing, literature has confirmed that relying so much on the promotion attribute alone does not lead to a successful social marketing intervention.

Social marketers have heavily been criticised for focusing the majority of their attention on strategies aimed at influencing individuals to change their behaviour (Downstream social marketing), instead of focusing on the environmental hindrances or problems that prevent

the individuals from engaging in the desired behaviour (Wymer, 2011). In recent years, calls have been made to social marketers to broaden the scope of social marketing by not just focusing on changing individual's behaviour, but also influence other key stakeholders including the media, policy makers and many others (Upstream social marketing) (Hoek & Jones, 2011) to enhance the effectiveness of SM programmes. The next section, therefore, discusses upstream and downstream social marketing.

3.4 Upstream and Downstream Application of Social Marketing

Social marketing programmes traditionally are geared towards altering the perceptions and attitudes of individual's (Kotler & Lee, 2008). Although this approach may be effective in influencing behaviour change in some particular individuals, it is important to clarify that this approach may not apply to many other individuals and groups since they cannot be influenced by social marketing campaigns to adopt a new behaviour (Gordon, 2013). Gordon (2013) further posit that, for social marketing to be more effective, social marketers must take a different approach in addressing behavioural change issues. He opined that every intervention must first target regulatory change (Upstream) and then conclude with education campaigns targeted to individuals (Downstream). The implication is that social marketers must first create an enabling environment for the individuals and then target them with educational messages.

Upstream social marketing is the process where marketing strategies and other concepts are used to reach as many people in authority as possible (policy makers, regulators, opinion leaders, managers and educators) to come out with policies, regulations or laws to change the structural environment which will help address a societal problem (Gordon, 2013). These groups of people are the target audience and through advocacy, lobbying and stakeholder engagement, their behaviour can be influenced to engender pro-social

outcomes, for example, through policy change (Gordon, 2013; Stead, Hastings & Eadie, 2002).

Although these two approaches to behaviour change might not be mutually exclusive, it is recommended that in designing change programmes one of these two (upstream and downstream) approaches should be used (Niblett, 2005). Wymer (2011) argues that for social marketing intervention to be effective, the undesirable behaviour should be under the control of the individual, contrary to that the intervention will fail. He further argued that, until social marketing approaches are used to address the environmental and social influence (upstream) that goes beyond the individual, the social marketing intervention will fail (Wymer, 2011). For instance, an upstream social marketing approach could be adopted by influencing decision makers to come with a policy that will include the Hepatitis B vaccination in the National Health Insurance Scheme (NHIS), to allow free screening and vaccination for all, which will compel everyone especially those in the at-risk-groups to access the preventive vaccine.

According to Luca and Suggs (2013), in designing an effective social marketing intervention for behaviour change, being it upstream or downstream, using theories and models is of great essence. Thus, the next section discusses SM theories.

3.5 Social Marketing Theories

To develop a more effective SM intervention programme, social marketers will have to accurately understand the cause to the social problem (Wymer, 2011). For instance, understanding why people are not taking the preventive Hepatitis B vaccine in Ghana is of great essence in designing a successful intervention to motivate people to engage in the vaccination behaviour. Extant literature in social marketing reveals that social marketing

approach relies heavily on theories of behavioural change to provide a valuable framework for understanding the target group and social issues (Luca & Suggs, 2013).

Due to the critical role of behavioural theory in understanding and designing an effective intervention, the use of theory has officially been integrated as a core component of the social marketing benchmark criteria (French & Blair-Stevens, 2006). The exchange theory is one of the most important theories in social marketing (Luca & Suggs, 2013). Lucas and Suggs (2013) suggest that the exchange theory alone cannot influence behaviour change, hence there is the need to integrate other health behaviour theories to achieve the bottom line which is behaviour change, the ultimate of SM. Some of these behavioural change theories include diffusion theory; stages of change model; social cognitive theory; theory of reasoned action; theory of planned behaviour; the health belief model; and protection and motivation theory. The models are discussed briefly in the sections below:

3.5.1 Stages of Change Model (SCM)

The stages of change model proposed by Prochaska and DiClemente (1982) has been one of the major behavioural change theories used by social marketers to design interventions. The rationale for the model came about as a result of studies that examined the experiences of smokers who quit smoking by themselves and those who had to seek professional assistance (Prochaska & DiClemente 1982). This model suggests that individuals do not change behaviours quickly and decisively, rather they move systematically through a series of stages. In other words, it is a process that occurs over-time. The phases include: pre-contemplation; contemplation; preparation; action; maintenance; termination and relapse (Prochaska & DiClemente, 1982).

At the pre-contemplation stage, the individual may not be aware of the behaviour and may not consider himself at risk of the problem and, therefore, has no intention to change their conduct in the foreseeable future**.** For instance, at this stage individuals may not be aware of Hepatitis B virus and the preventable behaviour and so will have no intention to engage in the behaviour within the next six months. The second stage is contemplation, where the individual is aware of the existence of the behaviour and its consequences and is actively considering the possibility of change (Tweneboah- Koduah & Owusu-Frimpong, 2013). Individuals within this stage recognise that their behaviour may have a negative outcome, and this provokes a lot of thought and practical consideration of adopting the new behaviour in the next six months. For instance, people at this stage will start thinking about taking the Hepatitis B vaccine as prevention against the disease.

The third is the preparation stage; this is the stage where the individual expresses his or her readiness to change his/her behaviour in the very near future, typically within the following month. At this stage, the individuals start to learn about what is involved in changing the behaviour. The process might stop at this point if the individual encounters many barriers to changing the behaviour (Tweneboah-Koduah, 2014). The next stage is action, this is where individuals have recently changed their behaviour successfully within the last six months and may intend to stick to that behaviour change. In the action stage, an individual adopts strategies to prevent a relapse and a return to the problem condition. The maintenance stage is next after action. At this stage, the individual is able to sustain the behaviour change for a long time, defined as more than six months without revisiting the old behaviour. In this stage, the individual consolidates the change and integrates it into his or her lifestyle.

Last but not the least is the termination stage. When individuals reach this stage, they have no interest to go back to their old behaviour and so, relapse rarely happens. The reason is that the people have control over any external, social and environmental influences. This notwithstanding, the individual may go through the stages cycle more than once as he or she attempts to adopt or modify a behaviour (Glanz, Petterson, Kristal, DiClemente, Heimendinger, et al., 1994).

The stages of change model are known for its ability to segment the target group based on where they fall within stages cycle (Logie-Maciver, Piacentini & Eadie, 2012). Nonetheless, the model has been criticised for the difficulties in placing individuals to where they belong in the cycle and the lack of ability to measure individual's behaviour change as people draw closer to the action and the maintenance stages (GrØnhøj, Bech-Larsen, Chan & Tsang, 2012). In addition, Logie-Maciver et al., (2012) argue that the model fails to give a clear sense for how much time is needed for each stage, or how long a person can remain in a particular stage and it does not also indicate how attitude may shape individual's decision at each stage.

3.5.2 Theory of Reasoned Action (TRA)

In an effort to establish a relationship among beliefs, attitudes, intentions and behaviours, the Theory of Reasoned Action (TRA) was introduced (Fishbein & Ajzen, 2005). The TRA model posits that behavioural intention is determined by three constructs, namely: attitude towards the behaviour; the subjective norm; and the personal agency (Fisbein & Ajzen, 2005). Although the TRA model has been successfully employed to predict and explain a wide range of health behaviours and intentions, this theory was limited to behaviours that were under full volitional control (Andreasen, 2002). Wymer (2011) posed the question: what about if those behaviours are not under volitional control? In an effort to answer the

above question, an additional variable which is known as perceived behavioural control was introduced into the theory of reasoned action to create a different theory known as the theory of planned behaviour (Ajzen, 1991).

3.5.3 Theory of Planned Behaviour (TPB)

TPB is an extension of the Theory of Reasoned Action (TRA) which is unable to predict behaviours that are not under the individual's full control (Ajzen, 1991). Ajzen (1991) posits that the underlying predictor of behaviour is the individual's intention to act or participate in a behaviour (Ajzen, 1991). Intentions represent the willingness and the effort people make, to engage in a given behaviour (Ajzen, 1991). Despite the proven ability of TPB in predicting and explaining a significant amount of variance in behaviour, it has been heavily criticised for not considering the relationship between past behaviour and future behaviour. Furthermore, Armitage and Conner (2001) have also criticised the theory for relying heavily on self-reports given the vulnerability of such data to self-presentational biases.

3.5.4 Social Cognitive Theory (SCT)

The SCT postulates that an individual's behaviour is the result of the interaction among cognition, behaviour, environment, and physiology (Bandura, 1998). According to Bandura (1998), there are two main factors that determine the chance that someone will adopt a health protective behaviour. First, the person must believe that the benefits accruing from partaking in the desired behaviour far outweigh the undesirable behaviour outcomes (Andreasen, 2004). Second, the individual must have high self-efficacy with regards to engaging in the behaviour, even if faced with several obstacles that hinder behaviour change (Bandura, 2000).

In a similar study, Maibach and Cotton (1995) argue that behaviour is reciprocally determined by the individuals' internal personal characteristics coupled with the physical environmental settings in which the individual resides. For instance, Lerner and Kennedy (2000) assert that people evoke diverse reactions from their social environment by the physical characteristics, such as age, sex, race and physical attractiveness, quite apart from what they say. Bandura (1998), adds that, what individuals think, believe and feel influences the way they behave. However, the social cognitive theory has been criticised for its inability to encompass personal attitude as a factor to determine its impact on behaviour change (Rosenstock, Strecher & Becker, 1988). In spite of the limitations, this theory has the ability to stress on self-efficacy and other sources to determine behaviour change (Lerner & Kennedy, 2000; Maibach & Cotton, 1995; Bandura, 2000).

3.5.5 Health Belief Model (HBM)

The HBM is a conceptual framework used as a guideline for developing health-related interventions (Champion & Skinner, 2008). The model was originally developed in 1950's in an attempt to understand why people failed to be part of a free tuberculosis screening programme (Rosenstock 1974). Similarly, Glanz, Rimer and Viswanath (2008), assert that the constructs of the HBM are used to predict why people decide or do not decide to control, prevent or screen for different diseases/conditions; these include susceptibility, severity, benefits, barriers, and cues to action and most recently self-efficacy.

3.6 Theory Adopted for the Study

This study adopts Champion and Skinner (2008) and Carpenter (2010) proposed HBM to determine the role of the HBM in social marketing interventions on Hepatitis B preventive behaviour in Ghana. The reason for selecting the HBM over the other discussed theories is that, according to the HBM individuals will participate in preventive behaviour only when

they feel vulnerable to a health condition which threatens their lives, if they perceive that the condition or illness has a high level of negative consequences to their health and if they believe that the benefits of engaging in the preventive or desirable behaviour is more than the costs, and if they perceive a high confidence in their ability to adopt the behaviour (Morris, Marzano, Dandy & O'Brien, 2012). The components of the HBM constructs and their hypotheses are discussed below:

3.7 Health Belief Model Constructs and Hypotheses Developments

The theoretical constructs are perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action and self-efficacy (Champion and Skinner, 2008).

3.7.1 Perceived Susceptibility

Perceived Susceptibility refers to an individual's subjective perception of the likelihood of contracting a disease or condition. The model posits that people will be more willing to act in acceptable ways if they perceive that they are vulnerable to a condition (Glanz et al., 2008). For instance, when applied to HBV behaviour, individuals will be motivated to participate in Hepatitis B preventive behaviour, if they perceive that they are at risk of contracting the disease. On the other hand, they will be reluctant to engage in the preventive behaviour if the perceive themselves not at risk of the disease. For example, it is observed from extant literature HBV is caused by people engaging in risky behaviours such as engaging in unprotected sex, kissing, tattooing and many others. If the individuals perceive that they are at risk of HBV infection because they engage in the above mentioned behaviours they are likely to change their behaviour towards contracting the disease. However, according to Cumberland (2009) individuals who perceive certain diseases as normal are not likely going to adopt the preventive behaviour.

According to Chen, Fox, Cantrell, Stockdale, Kagawa-Singer (2007) people were motivated to get vaccinated against contracting influenza as a result of perceived susceptibility. However, according to Janz and Becker (1984) susceptibility to a particular disease is subject to the individual differences or perceptions. For example, Lamanna (2004) asserts that even though people perceive they are at high risk of skin cancer, they continue tanning their skin. Additionally, even though people perceive that they are vulnerable to HIV/AIDS yet they do not practice safe sex. Based on the above discussion, the following null hypotheses are formulated:

H1a: There is no statistically significant relationship between individual's perceived susceptibility and Hepatitis B preventive behaviour.

3.7.2 Perceived Severity

This is the belief that contracting the disease/condition or leaving it untreated, may result in serious health consequences. This dimension includes both personal consequences (eg., death, and pain) and possible social consequences (eg., effects on the conditions of work and family life). For instance, individuals are more likely to get vaccinated against HBV if they believe getting infected with the disease has a high likelihood of mortality if it develops undetected. Conversely, if the individual perceives Hepatitis B infection as a normal disease such as a cold that demands pain killers, there cannot be a behaviour change. The situation varies from one community to another. According to and Hanson Benedict (2002), older people believe that contracting food-borne diseases to have negative consequences yet they do not use safe food-handling practices all the time. The HBM aims to promote the awareness/knowledge of how serious the outcomes of behaviours can be when applied to health preventive interventions like Hepatitis B. Based on the literature reviewed, the hypothesis below was formulated:

H1b: There is no statistically significant relationship between individual's perceived severity of the disease and Hepatitis B preventive behaviour.

3.7.3 Perceived Benefits

The HBM postulates that people will engage in health seeking behaviour if they believe that what is offered is of value to them (i.e. potential to reduce the disease threat) (Rosenstock, 1974). For example, if the individual perceives that engaging in preventive behaviour is likely to prevent HBV infection, the individual will be more interested in engaging in the behaviour (Frank, Swedmark & Grubbs, 2004). However, if the individual perceives the cost associated with the desired behaviour to be more than that of the old behaviour, it is very unlikely that he/she would engage in the behaviour. The hypothesis below was developed based on the review.

H1c: There is no statistically significant relationship between individual's perceived benefits and Hepatitis B preventive behaviour.

3.7.4 Perceived Barriers

Barriers are the obstacles or challenges that prevent individuals from adopting a recommended behaviour (Rosenstock et al., 1988). A kind of cost-benefit analysis is thought to occur when the individual weighs the action's effectiveness against perceptions. For instance, when they perceive the recommended behaviour to be expensive, dangerous, painful, inconvenient and time-consuming (Strecher, 1997), they are unlikely to participate in the recommended behaviour. Strecher (1997), therefore recommends that there need to be greater benefits than perceived costs for an individual to carry out the proposed health-related behaviour. For example, individuals are unlikely to get Hepatitis B vaccine when they perceive that vaccination centres are difficult to locate, perceive it to be expensive,

painful, dangerous and inconvenient, even if they believe the vaccine can prevent one from getting infected with the virus. In view of the above the below hypothesis was formulated:

H1d: There is no statistically significant relationship between individual's perceived barriers and Hepatitis B preventive behaviour.

3.7.5 Cues to Action

Cues to action are defined as anything that may increase awareness or trigger interest in performing the necessary health-related activity to prevent, control, treat, or elevate the health problem (Champion & Skinner, 2008). Cues could either be internal (bodily states) or external. For example, through reminders, friends, doctors, mass media campaigns or magazines and articles on HBV, this could lead to a behaviour change when it is well executed. Rosenstock (1974) asserts that the intensity of the cues varies with the degree of susceptibility and seriousness of the disease. For example, if a doctor advises and educates an individual on the seriousness of acquiring the disease and the benefits in getting vaccinated, there is the likelihood of the individual to engage the preventive behaviour. However, the absence of appropriate cues from the medical practitioners, media, peers, and family is likely to hamper vaccination uptake.

H1e: There is no statistically significant relationship between cues to action and Hepatitis B preventive behaviour.

Self-efficacy is the belief that one can execute the desired behaviour successfully to achieve the desired outcome (Bandura, 1998). In other words, it is an individual's ability/confidence to perform the necessary health-related action. Rosenstock, Strecher and Becker (1988), suggested that self-efficacy should be included in the HBM original constructs in order to

increase its explanatory power. For instance, when applied to HBV preventive behaviour, it could be the steps one has to go through I order to gain confidence to engage in the desired behaviour. Some scholars have demonstrated the significance of self-efficacy in predicting health behaviour and it has been frequently applied to other models to stimulate behaviour change (Palmeira, Teixeira, Branco… & Sardinha, 2007). A study by Palmeira et al., (2007) on the role of self-efficacy in a weight management programme found that self-efficacy was the most effective predictor of weight management. It is on this basis that the hypothesis below was formulated:

H1f: There is no statistically significant relationship between self-efficacy and the Hepatitis B preventive behaviour.

Notwithstanding the original constructs of the model, there exist other variables/ factors that influence individual's beliefs which directly or indirectly affect health-related behaviour; these factors include demographic (age, gender, educational attainment); psychosocial (social class, personality, educational level etc.) and structural (knowledge of disease) variables (Janz & Becker, 1984).

Based on the literature reviewed on the components of the Health Belief Model a conceptual framework was developed.

3.8 Conceptual Framework of the Study

The conceptual framework seeks to explain the behavioural factors that influence an individual's willingness to adopt health-related behaviours (Glanz, Rimer & Lewis, 2002; Abotchie & Shokar, 2009).The framework of the HBM constructs has been used effectively to predict and explain health behaviour (Kohler, Grimley & Reynolds, 1999). For instance, Rhodes and Hergenrather (2008) used the HBM constructs to predict and explain sexual

risk behaviours among gay men. In their study, they found that perceived susceptibility and severity of the disease were low among participants. In a similar vein, Abotchie and Shoker (2009), employed the Health Belief Model to explain cervical cancer screening intentions among college students in Ghana. They found that perceived barriers to screening had the most significant influence on screening behaviour. Furthermore, Yazdanpanah, Forouzani and Hojjati (2015), used the HBM constructs to study consumers intentions and perceptions of eating organic food. Their findings revealed that perceived benefits, general health orientation, self-efficacy and perceived barriers were the determinants of consumers' intentions. Gao, Xin, Nau, Rosenbluth, Scott and Woodward (2000) also used the HBM to study Breast self-examination. Generally, all the HBM constructs are considered independent predictors of behaviour, and thus, vary in their effectiveness in predicting behaviour (Carpenter, 2010; Armitage & Conner, 2001).

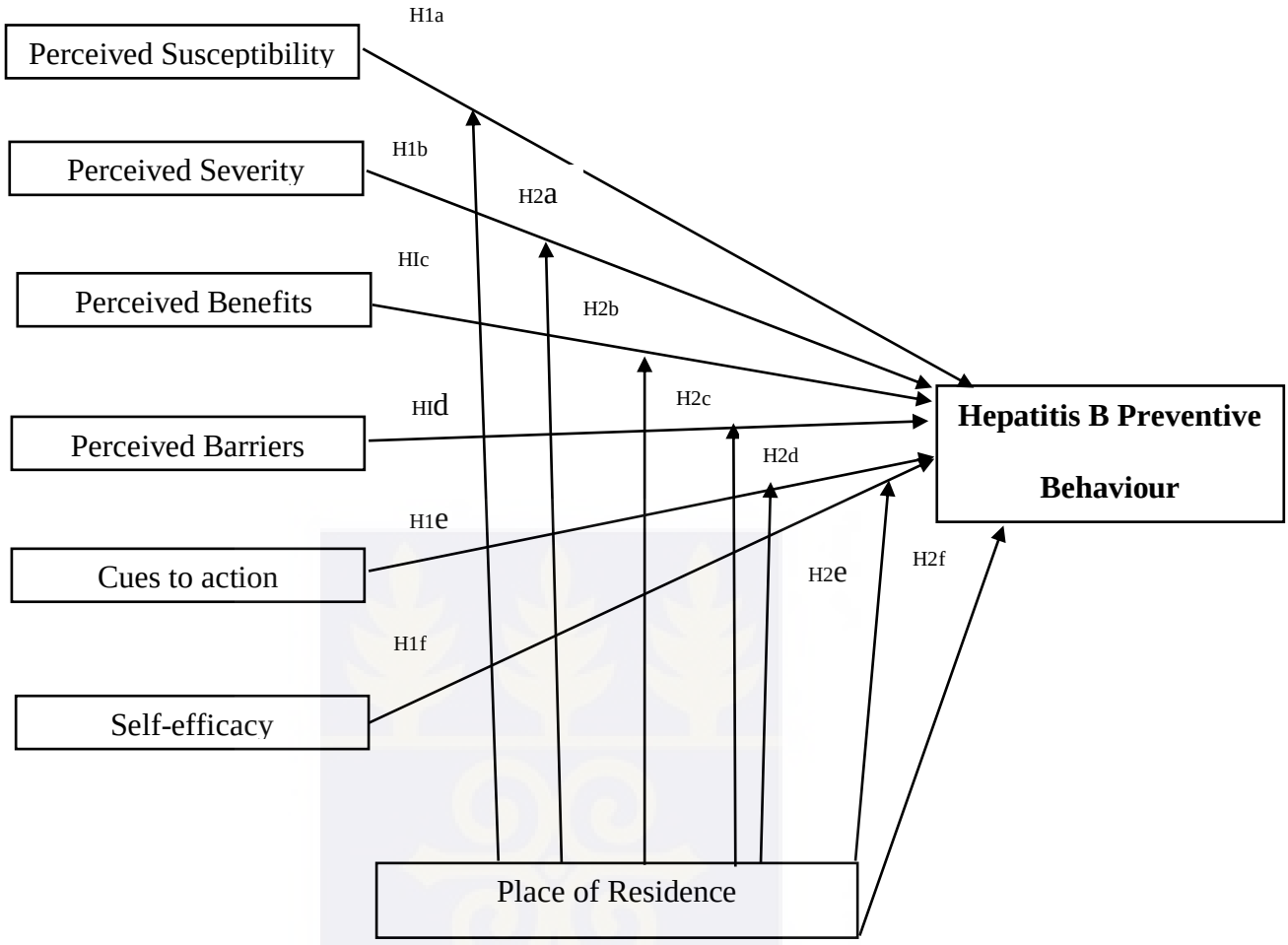
In another development, scholars like Yazdanpanah et al. (2015) argue that, once the individual perceives a threat from the disease and perceives the benefits to outweigh the cost or barriers, then there is the likelihood of taking action towards the desired behaviour without taking into consideration moderating or mediating variables/factors. Meanwhile, Bandura (1998) asserts that perceived susceptibility and severity have a weak relationship with preventive behaviour. Consequently, other factors could influence an individual's action towards behaviour change.

In accordance with Bandura (1998)'s assertion, Champion and Skinner (2008), postulate that, for behaviour change to occur, the individuals perceived threats, perceived benefits and barriers must be influenced by modifying factors such as demographic variables (age, income, education), psychological variables, environmental and individual's knowledge about the disease. Supporting the assertion by Champion and Skinner (2008), Carpenter

(2010) recommends that constructs used to measure the direct effects of behaviour have low predictive effectiveness, therefore, the focus should be on possible moderation and mediation variables such as demographic, psychosocial and structural variables which may influence each construct predictive effectiveness. The implication of these arguments suggests that there are certain uncontrollable variables that might be needed to influence the relationship between HBM constructs and the likelihood of taking preventive action.

In order to avoid the weak correlation of the constructs to health action as suggested by Bandura (1998), this study adopts Champion and Skinner (2008) and Carpenter (2010) assertion of the inclusion of moderating variables to influence the relationship between individual perceptions and Hepatitis B preventive behaviour in Ghana. This research operationalizes the constructs of the HBM proposed by Champion and Skinner (2008) and Carpenter (2010) and its relationship with Hepatitis B preventive behaviour in Ghana. The conceptual framework is illustrated in Fig.3.1 below:

Figure 3.1: Conceptual Framework – The Health Belief Model



Source: Adapted from Champion and Skinner (2008) and Carpenter (2010)

3.8.1 Components of the Model

As illustrated in the diagram above, the conceptual framework has three major components, namely:

- The Individual beliefs about the disease
- Moderating variable.
- The likelihood of taking preventive action.

The framework proposes that there exist a direct relationship between Individual beliefs and Hepatitis B Preventive Behaviour. However, other uncontrollable factors such as

demographic, psychosocial and structural factors are more likely to influence the relationship between individual beliefs and Hepatitis B Preventive Behaviour. These components are discussed below:

3.8.1.1 Individual Beliefs of the Disease

The individual beliefs are a person's opinions about one's own susceptibility to a disease and the seriousness with which the individual views the perceived threat of the disease (Lancaster, Lancaster & Onega, 2000). Perceived benefits and barriers, on the other hand, combine to evaluate how perceptions influence the effectiveness of the proposed behaviour. This implies that, a proposed behaviour is likely to be effective if individuals believe that the consequences of not engaging in the behaviour could be detrimental (ie. High susceptibility and severity); if they believe higher benefits could be accrued from partaking in the behaviour; and there are not many barriers associated with the proposed behaviour. Finally, once an individual exhibits the confidence and ability to engage in the behaviour, then, behaviour change is likely to occur (Lancaster et al., 2000).

3.8.1.2 Moderating Variables

The HBM constructs have been criticised for having low predictive ability when it is measured directly with preventive behaviour (Champion & Skinner, 2008; Carpenter, 2010), hence, Champion and Skinner (2008) and Carpenter (2010) suggest that adding moderators such as demographic, psychosocial variables to the model would improve its predictive or explanatory power. To this end, this current study moderates the relationship between the Health Belief Model constructs and HBV preventive behaviour with place of residence. Place of residence was used as a moderating variable because this study sought to ascertain whether psychosocial (social class) variables could influence the relationship between the HBM constructs and HBV preventive behaviour.

3.8.1.2.1 The Effect of Moderating Variables

This research investigates the impact that moderators have on the relationship between the HBM constructs and the preventive behaviour. Correspondingly, the moderating variable utilised in this study is place of residence.

Place of Residence (Slums and Non-slums)

Literature suggests that slum dwellers are more at risk of Hepatitis B virus than non-slum dwellers (Amidu et al., 2012; Owusu et al., 2008). However, anecdotal evidence suggests that slum dwellers are least likely to engage in Hepatitis B preventive behaviour as opposed to non-slum dwellers. In order to ascertain whether this assertion is true or not, this research will compare the behaviour of non-slum residents to slum dwellers using the HBM, in a bid to ascertain if significant differences exist among these two communities in the area of Hepatitis B preventive behaviour. Based on this review, place of residence was hypothesised as:

H2a-f: Place of residence significantly moderates the relationship between individual perceptions (a) perceived susceptibility, (b) perceived severity, (c) perceived benefits, (d) perceived barriers, (e) self-efficacy, (f) cues to action and Hepatitis B preventive behaviour.

The Relationship between the Predictor and Outcome Variables

From the diagram above, the HBM constructs represent the independent variables while the dependent variable is Hepatitis B preventive behaviour. The independent variables are revealed to have a positive effect on HBV Preventive Behaviour (Rhodes & Hengenrather, 2008). Subsequently, to determine the impact of the moderating variable a baseline link should exist between the predictor and the outcome variable.

The Influence of Moderating variables on the Relationship between Independent Variables and the Outcome variable.

Previous sections suggested there exist an association between the predictor and outcome variables. Nonetheless, the introduction of moderating variables can affect the outcome of this relationship. Moderating variables have been argued to play a key role in the relationship between the HBM constructs and Hepatitis B Preventive behaviour (Carpenter, 2010). Therefore, as a way of ascertaining the optimal outcome of the relationship between the constructs has necessitated testing the moderating variables to ascertain its effect on the relationship.

3.9 Research Hypotheses in Summary

In view of the review of literature above, the following hypotheses were set:

H1a: There is no statistically significant relationship between individual's perceived susceptibility and Hepatitis B Preventive Behaviour.

H1b: There is no statistically significant relationship between individual's perceived severity and Hepatitis B preventive behaviour.

H1c: There is no statistically significant relationship between individual's perceived benefits and Hepatitis B preventive behaviour.

H1d: There is no statistically significant relationship between individual's perceived barriers and Hepatitis B preventive behaviour.

H1e: There is no statistically significant relationship between individual's self-efficacy and Hepatitis B preventive behaviour

H1f: There is no statistically significant relationship between cues to action and Hepatitis B preventive behaviour.

H2a: Place of residence significantly moderates the relationship between perceived susceptibility and Hepatitis B preventive behaviour.

H2b: Place of residence significantly moderates the relationship between perceived severity and Hepatitis B preventive behaviour.

H2c: Place of residence significantly moderates the relationship between perceived benefits and Hepatitis B preventive behaviour.

H2d: Place of residence significantly moderates the relationship between perceived barriers and Hepatitis B preventive behaviour

H2e: Place of residence significantly moderates the relationship between self-efficacy and Hepatitis B preventive behaviour.

H2f: Place of residence significantly moderates the relationship between cues to action and Hepatitis B preventive behaviour.

CHAPTER FOUR

RESEARCH METHODOLOGY

4.0 Introduction

In order to accomplish the goals of this study, this chapter outlines a detailed description of the philosophical assumptions, research design, research approach, study population, sampling size and sampling technique; data collection instruments and data analysis method and also ethical considerations.

4.1 The Philosophical Assumptions of the Study

Discussing the philosophical assumptions underlying every research is crucial as it helps to understand the basis upon which a study is designed and carried out (Creswell, 2013).

Theoretical paradigms are logically held views, values, beliefs, concepts and propositions that underpin a research which enables the researcher to adopt the appropriate research method for the study (Krauss, 2005). Similarly, Punch (1998) defines paradigms "as a set of assumptions about the social world and what constitutes proper techniques and topics of enquiry". According to Boateng and Boateng (2014), several research paradigms exist. These are positivism, realism, interpretivism, relativism and critical realism. Most notably, Krauss (2005), asserts that, to explain and distinguish the paradigms from each other calls for understanding the ontological epistemological, and methodological assumptions. It is therefore imperative to explain the philosophical position adopted for this study. This study adopted a positivist approach. The positivist paradigm is of the view that, only one truth which is an objective reality exists (Boateng & Boateng, 2014). According to Krauss (2005), researchers are independent entities, and thus, the object or phenomenon under study is independent of what the researcher thinks. He further opined that knowledge about

the phenomenon is obtained and verified through direct observations and measurements without the researcher having to influence it, it is therefore value-free. For this reason, the positivist approach was deemed appropriate as the researcher believes in the concepts of objective reality (Johnson & Welch, 2011). Consequently, the researcher sought to establish the causal link between the HBM constructs and Hepatitis B preventive behaviour.

Creswell (2014), asserts that, under normal conditions, the philosophical strategies and approach employed, informs the type of research method to use: quantitative, qualitative or mixed method. This study employed the quantitative research method which essentially supports the positivist claims for developing knowledge through a research design such as experiments and surveys, data collection and analysis (Cooper & Schindler, 2001; Creswell, 2014).

4.2 Research Design

Research design refers to the overall strategy that the researcher adopts when trying to answer research questions or hypothesis and solving a research problem. (Creswell, 2013). It is the blueprint that specifies how data is to be collected, the type of instrument to use and how the collected data is analysed. Generally, research design may be broadly classified as exploratory, descriptive or explanatory/causal (Saunders, Lewis & Thornhill, 2011). In an exploratory design, the researcher focuses on collecting either secondary or primary data and then use unstructured or informal procedures to interpret them (Saunders et al., 2011). Exploratory design provides insights into and the understanding of a phenomenon that is new and difficult to measure (Saunders et al., 2011). According to Saunders et al. (2011), exploratory designs are largely qualitative and typically employ focus groups interviews, in-depth interviews, historical analysis and observations.

According to Malhotra and Birks (2007), descriptive research is normally conducted to describe either an existing or past phenomenon. He asserts that this type of design attempts to develop a detailed understanding of a particular phenomenon. According to Saunders et al., (2011), descriptive research focuses on the more detailed description of the data, rather than giving a mere explanation or drawing conclusions from the described data. The descriptive research presents a picture of the phenomenon or idea and shows how things are related to each other (Levin, Kleim & Wolf, 2009). However, it has been argued that descriptive research does not determine cause and effect relationship (Malhotra & Birks, 2007).

Explanatory/causal studies, on the other hand, are studies that establish cause-and-effect relationships between variables (Malhotra & Birks, 2007). In explanatory studies, the method attempts to explain the cause or reason why a particular research problem or phenomenon occurs which goes beyond description (Saunders et al., 2011).

Based on the above discourse, this study adopts the explanatory research design to examine the relationship between the constructs of the HBM and Hepatitis B preventive behaviour and the moderating role of age and place of residence on the relationship, which attempts to explain the reasons why individuals engage or do not engage in the preventive behaviour. The next section discusses the approaches to research.

4.3 Research Approach

Research approach according to Neuman (2007) is a plan and procedure that consists of the steps that the researcher employs based on the research purpose or objective, and mostly the selection approach to research should be contingent on the objective and the purpose. Generally, there are two main approaches to a research (Johnson & Onwuegbuzie, 2004;

Vanderstoep & Johnston, 2009). These approaches are quantitative and qualitative research. However, in recent years, some researchers have adopted a combination of both approaches (Tewksbury & Mustaine, 2009). The combination of both approaches is what is termed as the mixed methods approach (Hair et al., 2014).

Malhotra and Birks (2007) define qualitative approach as "an unstructured, exploratory research methodology based on small samples intended to provide rich, detailed description and understanding the meaning individuals or groups ascribe to a social or human problem". In other words, qualitative research could not be easily reduced to numbers. However, there have been criticisms from scholars, who argue that researchers who adopt this approach are sometimes not able to disassociate themselves from the subject matter (Saunder et al., 2011).

Conversely, Creswell (2013) and Bryman (2008) explain quantitative approach to research as a phenomenon where numerical data are collected and analysed using statistical approaches. It also emphasises quantification of relationships between theory and research using such statistical measures such as regression, correlation coefficient, and mean difference (Creswell, 2013). Unlike qualitative research where the methodology is based on small samples, quantitative research require large samples which are analysed statistically (Creswell, 2013; Bryman, 2008).

Finally, the mixed methods approach is defined as the "combination of both qualitative and quantitative methods which enables the researcher to be 'more flexible, integrative and holistic in their investigative techniques, as they strive to address a range of complex research questions that arise" (Harrison & Reilly, 2011). Notably, the idea of mixed methods has attracted scholarly interest (Sandelowski, 2000; Tashakkori & Teddlie, 1998).

Bryman (2008) asserts that researchers use this type of method to help them to answer different questions, to triangulate, to explain, to offset and to evaluate credibility. The quantitative approach is employed for this research as a result of the study's purpose and objective mentioned in chapter one. The adoption of this approach was influenced by Yazdanpanah et al. (2015) and Deshpande and Basil (2009), who used the Health Belief Model to address intended behaviours by employing the quantitative approach. The study also adopted the cross-sectional survey design, which has to do with collecting data at a single point in time (Saunders et al., 2011).

4.4 Study Population

According to Malhotra (2007), the study population is the collection of elements or objects that possess the information sought by the researcher and about which inferences are made. In other words, this is made up of all the people out of which the researcher obtains the data. In the light of this, the target population for this study comprised of all individuals between the ages of 18 and above who are residents of slums (Chorkor and its environs) and non-slum (specifically, East and West Legon) communities in Accra.

4.5 Sample Size

The finite part of a statistical population whose properties are used to make estimates about the population as a whole is known as a sample (Webster & Watson, 2002). Neuman (2007) argues that quantitative studies are known to be scientifically asking a large number of individuals the same question which is used to generalise the decision of the whole population. The sample size was informed by Kent (2007) and Burns and Bush (2010). They assert that for a sample to be representative and acceptable for a quantitative study, it should be preferably more than 100. This study used a sample of 415 respondents who reside in the selected communities of slums and non-slums. The selection of the sample

size was based on Bradley's (2007) argument, which states that many sample sizes for research studies are defined by the researcher's time and money available for data collection. Hence, the researcher, sampled 415 respondents based on the cost basis approach (Burns & Bush, 2010) for the study and also because a sample of 300 and above is deemed fit for a structural equation modelling analysis (Hair et al., 2013).

4.6 Research Sampling Technique

According to Guy et al. (1987), probability and non-probability sampling methods are the two main types of sampling techniques that are mostly used in research. These two are discussed below:

4.6.1 Probability Sampling

Stuart (1984) defines probability sampling as a technique whereby every element in the population has an equal chance of being selected to be part of the research. According to Saunders et al. (2011), there are four main types of techniques that are widely used across various disciplines. These are random sampling, stratified random sampling, systematic sampling and cluster sampling. With random sampling the respondents are chosen based on chance from a target population or sample frame; stratified random sampling, on the other hand, entails categorising sample frame into groups based on certain criteria, then random sampling will be used to select from each stratum; systematic sampling entails selecting a sample at regular intervals from the sampling frame. Also, cluster sampling denotes the division of the entire population into distinct groups and later the researcher will choose the sample from the groups.

4.6.2 Non-Probability Sampling

According to Saunders et al. (2011), there are several non-probability techniques. These include purposive, snowball, quota and convenience sampling methods.

Purposive sampling refers to selecting a sample "on the basis of your knowledge of the population, its elements and the nature of your research aims" (Babbie, 2004). Snowball sampling, on the other hand, is a technique used by the researcher to identify respondents based on referrals by initial respondents. Saunders et al. (2011) assert that convenience sampling method involves selecting respondents who are available and willing to participate in the study. With regards to quota sampling method, the researcher selects the prospective respondents based on some pre-specified characteristics

4.6.3 Sampling Technique for the Study

Non-probability sampling technique was used as a basis for selecting respondents for the study which dwells on the discretion of the researcher (Malhotra & Birks, 2007). Purposive sampling technique which is a non-probability sampling method was used to select communities which were slum and non-slum in Accra (Malhotra, 2007). This technique was deemed appropriate for this study since purposive sampling allows a researcher to select the respondents that met the requirements of the study. Although purposive sampling was used to select the two communities, the researcher employed convenience sampling technique to select the participants. The choice of this sampling technique became necessary because the complete sampling frame is unknown.

4.7 Sources of Data

There are two main sources of data collection. (Ghauri & Gronhaug, 2005). These are primary and secondary sources. Primary data is when the researcher collects data for a particular phenomenon for the first time (Malhotra, 2007) as opposed to secondary data

already exists for a different purpose (Hair, Black, Babin, Anderson & Tatham, 2006; Malhotra, 2007). Even though some merits are associated with the use of secondary data, primary data was used for the current study based on the purpose to get a first-hand response from individuals who reside in the selected communities (Hair et al., 2006).

Personal interview methods were used to collect the primary data with structured questionnaires. These questionnaires were administered face to face in households of respondents in Accra; specifically, on individuals residing in slums (Chorkor and its environs) and non-slum communities (East Legon, West Legon).

4.8 Data Collection Instrument

Malhotra and Briks (2007) assert that when gathering primary data there are four instruments that can be used. These are personal interviews, self-administered questionnaires, participant observation and telephone interviews. This study adopted the self-administered questionnaire approach since it is much cheaper as opposed to the other instruments especially when the data is to be collected from different locations. Consequently, primary data was gathered from the field using a close-ended structured questionnaire approach. The Conceptual framework was tested using the results of a self-administered survey which helped in finding solutions to the research questions. 30 items were included in the survey which was grouped into three thematic sections. The next stage after the operationalization of the constructs was to measure the conceptual model using multiple indicators.

Sections A was concerned with the participant's general information. The section B captured the respondent's knowledge of the disease and section C was concerned with the main variables of the framework. The study addressed the six (6) HBM constructs,

comprising, perceived susceptibility, severity, benefits, barriers, cues to action and self-efficacy. Additionally, in this section, questions were asked on the dependent variable (Hepatitis B preventive behaviour) to ascertain the respondent's behaviour towards Hepatitis B prevention. Scales from the literature on HBM Constructs were adapted (Champion, 1984).

The questionnaire's internal reliability was investigated using the Cronbach's coefficient alpha (Pallant, 2010). This study employed the five-point Likert-type scale as a result of Zikmund's (2000) assertion that the five-point Likert-type scale is easy to interpret and also easy for participants to understand and answer. The scales were all measured on a five-point Likert-type scale ranging from 1(strongly disagree) to 5 (strongly agree).

The questionnaires were pilot tested using 20 respondents who are residents at Madina to determine their fitness or suitability and applicability of the developed questionnaire and also ensuring that the respondents felt no difficulty in understanding them. Madina was used because they bear same characteristics as that of the selected study area. According to Received questionnaires from the pilot test were modified (Dodds, Monroe & Grewal, 1991; Nunnally & Bernstein 1994; Saunders et al. 2011). After re-wording and re-designing the questionnaire, it was finally ready for administering.

4.9 Collection of Primary Data

The administering of the questionnaire was the next stage of the pilot testing. Purposive and convenient methods were used to administer the questionnaires to the participants and the justification for using this method was based on Madden, Dillon and Firtle's (1993) recommendation. They recommend that researchers should select only respondents that

meet the specific requirement of the study. In addition, this method is less time consuming and so was a better alternative considering the limited period for the research.

Prior to the data collection, the researcher visited the selected communities to inform the potential respondents about the research. Only participants who were willing to assist in the research were given the questionnaires to fill. Further, an appointment with some respondents was rescheduled to meet their proposed times so they could fill the questionnaire. For instance, in the non-slum communities where the majority of the respondents were full-time workers, the researcher was asked by the respondents to schedule the meeting times to Saturdays. The primary data collection process covered a period of two months from February 2017 to April 2017. In total, 415 completed questionnaires were retrieved out of 450 questionnaires that were sent to the field.

4.10 The Reliability and Validity

According to Yin (1994) compromising on the quality of a research is something that every researcher must avoid. He suggests that researchers could avoid this by utilising various measures of validity and reliability test. Going by this assertion, the various validity and reliability measures adopted for this study are discussed in the subsequent paragraphs.

4.10.1 Validity of the Research Instrument

Validity is termed as the degree or extent to which a measure accurately assesses the variable it is supposed to measure (Hair et al., 2014; Zikmund, 2000). Ascertaining the validity of the scales is paramount in a research (Blumberg, Boris, Cooper & Schindler, 2005; Cooper & Schindler 2001). In this study, construct validity is applied to detect how well the results obtained, using the measuring instruments fits the theoretical expectations (Hair et al., 2014). Constructs validity includes; convergent validity and discriminant

validity. Discriminant validity was used in identifying the extent to which constructs differ from each other (Rezaei, 2015), while the convergent validity was used to ensure that the constructs identified are truly reflected by their indicators (Rezaei & Ghodsai, 2014). Discriminant validity is employed using construct correlations and cross-loadings criterion while the convergent validity is applied using Average Variance Extracted (AVE) and factor loadings.

4.10.2 Reliability of the Research Instrument

Ghauri and Gronhaug (2005) define reliability as "an indicator for measuring the internal consistency of the scales to determine how well the scales or items on the test measure the same construct". This implies that a reliable scale remains unchanged irrespective of the context where the research is conducted (Yin, 1994). Malhotra (2007) posits that reliability of scales could be assessed in three folds which include test-retest, internal consistency and alternative forms. However, the most widely used method of measuring internal consistency is by using the Cronbach alpha coefficient (Hair et al., 2014; Malhotra, 2007; Guy, Edgley, Arafat & Allen, 1987).

Most notably, Churchill and Iacobucci (2006) and Hair et al. (2014) assert that values of Cronbach alpha should range between 0 and 1. Therefore, the more the alpha value approaches 1 the more reliable it becomes. Other scholars opine that reliability range of 0.5, 0.6 and 0.7 is acceptable (Dawson, 2002; Hair et al., 2014). Peterson and Kim (2013) argue that Cronbach alpha is the lower bound, hence, it underestimates the true reliability. Based on this assertion, the study adopted the composite reliability method, which is mostly used in structural equation modelling (Hair, 2014). According to Hair, et al. (2015), Composite reliability assesses the overall reliability of a collection of heterogeneous but similar items.

4.11. Ethical Consideration

Scholars have indicated that in conducting research, it is crucial to take into consideration ethical issues such as openness with respondents and appropriate treatment of confidential information (Miles & Huberman1994; Malhotra & Birks 2007). Consequently, the steps below were taken to ensure that the researcher followed the right procedure to collect data from the respondents:

- The purpose and the objectives of the study were explained to the participants for them to understand the rationale behind the study and based on that they voluntarily participated.
- The researcher obtained a written introductory letter from the department of marketing and customer management. This helped the researcher to obtain data from the ministry of health and the disease surveillance department.
- Respondents were assured of confidentiality and information provided were going to be used for academic purposes only

4.12 Data Processing and Mode of Analysis

This section discusses the use of statistical techniques in this study. The analytical instrument/tool for this study is the IBM Statistical Package for Social Sciences (SPSS) version 21 and SmartPLS3 trial version. The IBM SPSS was used for the preliminary coding and inputting of the raw data as well as for data cleaning before onward transferal to PLS-SEM further analysis. Data screening is of the essence, as mistakes are quite easily made in the data entry process which can eventually affect the results of the analysis (Pallant, 2011). He further proposes three vital steps for data screening:

- Step 1: Checking for errors; first, there is the need to check each of the variables for scores that are out of range (that is, not within the range of possible scores)

- Step 2: finding the error in the data file; there is the need to find where in the data file this error occurred (that is, which case is involved).
- Step 3: Correcting the errors in the data file; finally, there is the need to correct the error in the data file itself or delete the value.

Based on these steps proposed by Pallant (2011), a thorough data screening was performed on each of the variables for scores that were out of range, missing or wrongly inputted and further deleted. To achieve the objectives set out in the first chapter, this study employed multivariate data analysis techniques, such as descriptive statistics, and structural equation modelling.

4.12.1 Structural Equation Modelling

Structural equation modelling (SEM) is a powerful analytical technique for testing measurement, functional, predictive and causal hypotheses (Schumacker & Lomax, 2004). In other words, it is a statistical method for measuring relationships among unobserved (latent) variables. SEM also referred to as analysis of covariance structures or causal modelling is a family of statistical models, that seeks to estimate a series of separate but interdependent multiple regression equations simultaneously, taking into consideration the measurement errors (Hair et al., 2014; Jöreskog & Wold, 1982).

According to Ullman (2006), what makes SEM unique from all other multivariate techniques is the fact that, it allows the examination of a set of relationships between one or more independent variables and one or more dependent variables, either continuous or discrete. Similarly, Hair et al., (2014), propose three characteristics of SEM which makes it a unique multivariate data analysis technique:

- Estimation of multiple interrelated dependence relationships

- Incorporating latent variables not measured directly
- Defining a model.

In other words, SEM has the ability to incorporate latent variables into the analysis and it provides the measurement model which specifies the rules of correspondence between measured and latent (unobserved) variables. It can also improve statistical estimation, represent the theoretical framework and identify the measurement error. Notably, a complete SEM model consists of measurement and structural models (Hair et al., 2014). They further assert that a model should always be developed based on some underlying theory.

Today, SEM has become a well-known statistical technique with several scholars employing it as an analytical method (Hair et al., 2014). Presently, there are two main approaches to SEM: covariance-based structuring equation modelling (CB-SEM), consisting of AMOS, LISREL, AMOS and EQS, and the variance-based structural equation modelling, also known as Partial Least Squares (PLS-SEM). This study, however, employs Partial Least Squares (PLS), a structural equation modelling (SEM), approach to examine simultaneously the structural components of both the measurement and structural model.

4.12.1.1 Partial Least Squares (PLS)

Fornell, Johnson, Anderson, Cha and Bryant (1996), define "PLS-SEM as a second generation multivariate technique that can simultaneously evaluate the measurement model (that is, the relationships between constructs and their corresponding indicators/item) and the structural model with the aim of minimising the error variance". According to Jöreskog and Wold (1982), and Rigdon (2012), this robust statistical method has been designed as a prediction-oriented approach to SEM that relaxes the demands on data and specification of

relationships set by Covariance-Based SEM (CB-SEM). Consequently, if the research objective is prediction rather than confirmation of structural relationships, then variance-based PLS-SEM is the preferred alternative (Hair et al., 2013).

As suggested by Hair et al., (2013), this study employed Smart PLS as the primary data analysis technique because of the following reasons (Fornell et al., 1996):

- PLS is a variance-based technique that is oriented towards the predictive aspects (variance explanation) of the model.
- PLS does not assume multivariate normality and it takes into account the measurement error when assessing the structural model.
- It can also be utilised with much smaller sample sizes, even when the models are highly complex.

Hence, the study considered the PLS-SEM approach a better alternative as it seeks to determine predictive behaviour and not to confirm structural relationships (Hair et al., 2013).

4.13 Chapter Summary

The chapter discussed the philosophical assumptions adopted for this study, the research design, sample size, the data collection instruments and method, ethical consideration and data processing and mode of analyses.

CHAPTER FIVE

DATA ANALYSIS AND DISCUSSION OF FINDINGS

5.0 Introduction

The previous chapters of this study looked at the review of literature relating to the topic, which informed the development of appropriate hypotheses and methodology for collecting data. This chapter provides the results of the analysed data collected. The results are characterised into seven key areas; profile of the respondents, descriptive statistics of the measurement variables, examined the relationship between the HBM constructs and Hepatitis B preventive behaviour, examined the influence of age and place of residence, on the relationship between HBM constructs and Hepatitis B preventive behaviour. Conclusions were drawn from the findings of the study. The data was analysed using SPSS and PLS. SPSS was used for the descriptive analysis, whereas PLS-SEM was used to assess and test the proposed research model since it is well suited to handle highly complex predictive models (Jöreskog & Wold, 1982). Meanwhile, Ainin, Parveen, Moghavvemi, Jaafar and Shuib (2015), assert that before performing the actual analysis, it is important that preliminary data analysis is run to ensure the dataset is cleaned and cleansed. In view of this, data screening was done to delete non-engaging responses.

5.1 Profile of Respondents

Questionnaires were administered to respondents in the slum and non-slum communities in the Greater Accra Region. In all 450 respondents were contacted but 430 representing 95.6% agreed to participate. Out of this, 15 questionnaires were rejected as incomplete, resulting in completion of 415 questionnaires, representing 92.2% for the study. The findings about the respondents are displayed in Table 5.1 below:

Table 5.1: Profile of the Respondents

Variables	Whole Sample N= 415 N	(%)	Slum N= 210 n	(%)	Non-Slum N= 205 n	(%)
Gender						
Male	159	38.3	81	38.6	78	38.0
Female	256	61.7	129	61.4	127	62.0
Age Group						
18-24	127	30.6	75	35.7	20	9.8
25-30	122	29.4	53	25.2	44	21.5
31-40	98	23.6	42	20	113	55.1
41-50	36	8.7	13	6.2	23	11.2
51 or older	32	7.7	27	12.9	5	2.4
Marital Status						
Single	201	48.4	79	37.6	122	59.5
Married	161	38.8	85	40.5	76	37.1
Divorced	3	3.1	6	2.9	7	3.4
Widowed	7	1.7	7	3.3	0	0.0
Separated	7	1.7	7	3.3	0	0.0
Co-habitation	26	6.3	26	12.4	0	0.0
Average monthly **Income (¢)**						
None	80	19.3	80	38.1	0	0.0
Less than 100	41	9.9	41	19.5	0	0.0
110-500	80	19.3	79	37.6	1	0.5
510-1000	14	3.4	6	2.9	8	3.9
Above 1000	200	48.2	4	1.9	196	95.6
Level of Education						
No Formal Education	32	7.7	32	15.2	0	0.0
Primary Education	38	9.2	38	18.1	0	0.0
JHS Education	42	10.1	42	20.0	0	0.0
SHS/A' Level	95	22.9	91	43.3	4	2.0
Tertiary Education	208	50.1	7	3.3	201	98.0
Employment Status						
Salaried Worker	211	50.8	39	18.6	172	83.9
Self-employed	130	31.3	98	46.7	32	15.6
Unemployed	74	17.8	73	34.8	1	0.5
Others	0	0.0	0	0.0	0	0.0

Source: Field Data, 2017

From the above table, it can be seen that female constituted the majority of respondents in both communities. Within the slums sample, 61.4% of the respondents were females and 36.6% were males, while within the non-slum sample, females constituted 62% of the respondents and 38% were males. With respect to age, 30.6% of the respondents were within the 18-24 age group, 29.4% in the 25-30 age group. The rest were within the ages of 31-40, 41-50 and 50 and above, representing 23.6%, 8.7% and 7.7% respectively. This implies that, predominantly, the age distribution of the respondents were between 18-30 years constituting 60% and this age group are the most active group and tend to engage in behaviours which may compromise their ability to make sound decisions concerning their health behaviours.

In responding to the marital status of the respondents, the slum sample recorded 37.6% singles, 40.5% were married, 2.9% were divorced, 3.3% were widowed, 3.3% were separated and 12.4% were co-habiting while among the non-slum sample, 59.5% were singles, 37.1% were married and 3.4% were divorced. The results, however, did not record widowed, separated and co-habitation respondents within the non-slum sample. Majority of respondents for both communities had education up to the Tertiary level representing 50.1%. Within the slum community, the highest level of education of the respondents was SHS/A' Level constituting 43.3%. In the non-sum communities' about 98% had education up to the tertiary level. The result further shows that about 19.3% of the respondents had no average monthly income, 9.9% earned less than **(¢)** 100, 19.3% earned between **(¢)** 110-150, 3.4% earned between (¢) 510-1000 and about 48.2% earned above (¢) 1,000. The results further revealed that, in terms of employment status, 50.8% of the respondents for both groups were salaried workers, 31.3% were self-employed and 17.8% were unemployed.

5.2 Descriptive Statistics of Measurement Variables

Pallant (2011) asserts that before performing any statistical analysis, it is critical to subject the information gathered to descriptive analysis before any data validation and analysis is done. These descriptive statistics include measures of central tendency such as the mean and standard deviation, range of scores, skewness and kurtosis. Table 5.2 below presents the descriptive statistics of the variables used in the survey instrument. They show the extent to which the participants disagreed or agreed with the statements in the questionnaire and indicate how each statement performed from the participant's perspective. From the table, the highest mean recorded was 4.55 (Getting Hepatitis B vaccination would decrease my fear of getting infected with Hepatitis B), while the lowest mean was 1.68 (I am likely not to engage in body piercing and tattooing for fear of getting Hepatitis B virus infection). This gives an indication that, most of the participants perceive that going for the Hepatitis B vaccination could reduce their fear of contracting the disease; however, they do not believe that not engaging in body piercing and tattooing could decrease their fear of getting infected with the virus.

Table 5.2: Descriptive Analysis of Measurement Variables

Scale Items	Code	Mean	SD
Perceived Susceptibility			
It is likely that I can get Hepatitis B virus infection	PSU1	2.81	1.52
I can get infected with Hepatitis B by sharing a toothbrush and towel with someone	PSU2	3.68	1.29
I can get Hepatitis B infection through body piercing	PSU3	3.77	1.18
I can get Hepatitis B infection through tattooing	PSU4	3.76	1.22
I can get Hepatitis B through kissing	PSU6	3.83	1.14
Perceived Severity			
If I get infected with Hepatitis B virus, I will be more likely to have liver cancer	PSEV1	4.29	.97
The thought of Hepatitis B scares me	PSEV2	4.16	1.06
Getting Hepatitis B could lead to death	PSEV3	4.16	1.12
If I get Hepatitis B, I might not be able to provide for myself and my family	PSEV4	4.37	.91
Getting infected with Hepatitis B could endanger the lives of my family	PSEV5	4.10	1.15
Perceived Benefits			
Getting Hepatitis B vaccination can be a good way to protect my life	PBEN1	4.47	.84
Getting Hepatitis B vaccination would decrease my fear of getting infected with Hepatitis B	PBEN2	4.55	.82
Getting Hepatitis B vaccination would be a good way to protect the health of my sex partner (s)/family	PBEN3	4.31	.99
Getting the vaccination for Hepatitis B would be a responsible thing to do	PBEN4	4.33	0.97
Getting Hepatitis B vaccination will decrease my chances of death	PBEN5	4.23	1.12
Perceived Barriers			
It is very difficult to locate a vaccination centre	PBAR1	3.38	1.22
I cannot afford the cost of the 3 dose vaccine shots	PBAR2	3.30	1.35
Hepatitis B vaccination can be painful and uncomfortable	PBAR3	2.84	1.11
It is socially embarrassing for me to go for the vaccine	PBAR4	2.03	1.00
It is hard to remember vaccination dates	PBAR5	3.45	1.24
Cues to Action			
A family member who was diagnosed of Hepatitis B prompts me of the vaccination.	CuAct1	1.95	0.96
Commercials from the media reminds me of Hepatitis B vaccination	CuAct2	3.52	1.30
My doctor recommended the Hepatitis B vaccine to me	CuAct3	2.75	1.28
My family/friends reminds me to go for the Hepatitis B vaccination	CuAct4	2.83	1.34

Table 5.2: Descriptive Analysis of Measurement Variables Continued.

Self-efficacy			
I can go for the Hepatitis B vaccination without feeling embarrassed	SEFF1	3.60	1.14
I am capable of going for the Hepatitis B vaccine despite the pain from injection	SEFF2	3.63	1.04
I can go for all the 3 shots of Hepatitis B vaccination, despite the possible side effect from the vaccine	SEFF3	4.00	0.98
I am confident that the Hepatitis B vaccine is effective	SEFF4	3.97	1.03
Preventive Behaviour			
I am likely to go for the Hepatitis B vaccination	BeIntent1	3.94	1.16
I am likely to stop sharing personal items with friends and family for fear of Hepatitis B	BeIntent2	4.24	0.83
I am likely to stop having multiple sexual partners because I am scared of getting the disease	BeIntent3	4.37	0.85
I am likely to stop using unsterilized syringes and blades to prevent Hepatitis B infection	BeIntent4	3.23	1.58
I am likely not to engage in body piercing and tattooing for fear of getting Hepatitis B virus infection	BeIntent5	1.68	1.02

Source: Field Data, 2017

5.3 Assessment of the measurement model

Prior to assessing the measurement model, it must be mentioned that the two data sets (slum and non-slum samples) were combined to create a single sample for the purposes of conducting the reliability test. In assessing the measurement model, it is important for the researcher to test for reliability, validity, convergent validity and discriminant validity to ascertain whether all items are correct indicators of the latent variables (Bagozzi & Yi, 2012; Hulland, 1999; Hair et al., 2013). This implies that the first step to any SEM process is to conduct the assessment of the measurement model to ensure that items for unobserved variables are actually measuring constructs for which they are intended. From this perspective, this study assessed the measurement model with the use of three main criteria: (1) convergent validity, (2) reliability and (3) discriminant validity as suggested by Hair et al., (2013). Table 5.3 illustrates the assessment of the measurement model.

Table 5.3: Measurement Model

Construct	Items	Loadings	AVE	CR
Preventive Behaviour	BeIntent3	0.90	0.75	0.90
	BeIntent4	0.81		
Cues to Action	CUACT2	0.61	0.63	0.77
	CUACT5	0.96		
Perceived Barriers	PBAR3	0.75	0.67	0.80
	PBAR4	0.89		
Perceived Benefits	PBEN2	0.85	0.71	0.91
	PBEN3	0.87		
	PBEN4	0.89		
	PBEN5	0.75		
Perceived Severity	PSVE4	0.71	0.60	0.75
	PSEV5	0.84		
Perceived Susceptibility	PSU3	0.87	0.79	0.89
	PSU6	0.91		
Self-Efficacy	SEFF3	0.80	0.74	0.85
	SEFF4	0.92		

Source: Field Data, 2017

The convergent validity test of the items were assessed by the Outer loadings and Average Variance Extracted (AVE) (Schreiber, Nora, Stage, Barlow & King, 2006). According to Koo, Chung & Kim (2015), with respect to the outer loadings, the measurement model is modified by deleting items that share a high degree of residual variance with other items. In view of this, a sum total of eleven items were deleted because these items shared a high degree of residual variance.

As shown in Table 5.3, all the loadings exceeded the recommended threshold value of 0.6 as suggested by Chin (1998). Thus, the loadings provided support for convergent validity (Hair et al., 2014). The AVE which reflects the overall amount of variance in the indicators accounted for by the latent construct, were in the range of 0.598 and 0.793 which are above the minimum required cut-off level of 0.50 recommended by Fornell and Lacker (1981), thus, demonstrating convergent validity for all constructs.

Composite reliability (internal consistency) values which show the extent to which the indicators reflect the latent construct ranged from 0.747 to 0.907, exceeding the minimum required level of 0.70 (Nunnally, 1978). In sum, the scores for AVE, composite reliability and outer loadings are above the acceptable satisfactory levels of > 0.50, > 0.70 and > 0.60 respectively. Hence, confirming reliability and convergent validity (Fornell & Lacker, 1981).

Discriminant Validity

Another criterion that has to be assessed is the discriminant validity, which measures the extent to which the latent variables are distinct from each other (Duarte & Raposo, 2010). According to the Fornell-Lacker's criterion, to estimate discriminant validity, the square root of average variance extracted (AVE) value of each construct should be greater than the correlation values of the construct and other constructs. As shown in Table 5.4, the square root of AVE exceeds the correlations between it and all other latent variables which mean they are distinct from each other which provides evidence of discriminant validity (Hair et al., 2013).

Table 5.4: Discriminant Validity of Constructs (Fornell & Lacker, 1981)

Construct	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) Preventive Behaviour	**0.864**						
(2) Cues to Action	-0.145	**0.796**					
(3) Perceived Susceptibility	-0.332	-0.036	**0.820**				
(4) Perceived Severity	0.420	-0.021	-0.092	**0.842**			
(5) Perceived Benefits	0.141	-0.036	0.019	0.365	**0.773**		
(6) Perceived Barriers	0.464	-0.034	-0.255	0.217	0.066	**0.891**	
(7) Self-efficacy	0.418	-0.033	-0.314	0.176	0.124	0.158	**0.860**

Source: Field Data, 2017

Discriminant validity testing based on AVE correlations matrix was done by comparing the loadings across the columns in Table 5.4, thus; the diagonal values (AVE) should be higher than the off-diagonal values (correlation values). The results in Table 5.5 below show that there is discriminant validity between all the constructs. This is because the AVEs of all the variables were greater than the recommended value of 0.5 and were also greater than the square of the correlation values.

Table 5.5: AVE and Latent Variables Correlation Matrix

	Preventive behaviour	Cues to action	Perceived Barriers	Perceived benefits	Perceived severity	Perceived susceptibility	Self-efficacy
BeIntent2	0.872	-0.212	-0.294	0.368	0.14	0.431	0.308
BeIntent3	0.904	-0.095	-0.371	0.35	0.157	0.384	0.429
BeIntent4	0.813	-0.066	-0.187	0.371	0.064	0.39	0.344
CuAct2	-0.052	0.587	0.042	-0.108	-0.032	0.014	0.015
CuAct5	-0.151	0.96	-0.057	0.013	-0.03	-0.045	-0.044
PBar3	-0.22	-0.11	0.749	-0.058	0.057	-0.275	-0.262
PBar4	-0.314	0.026	0.886	-0.089	-0.013	-0.167	-0.259
PBen2	0.33	-0.012	-0.107	0.849	0.217	0.152	0.199
PBen3	0.353	0.066	-0.107	0.87	0.361	0.222	0.137
PBen4	0.415	-0.078	-0.043	0.894	0.338	0.284	0.086
PBen5	0.302	-0.041	-0.057	0.748	0.306	0.034	0.195
PSev4	0.094	-0.027	0.028	0.155	0.705	0.066	0.057
PSev5	0.122	-0.028	0.005	0.384	0.836	0.04	0.127
PSu3	0.379	-0.128	-0.214	0.108	0.058	0.872	0.092
PSu6	0.444	0.053	-0.239	0.267	0.06	0.908	0.183
Seff3	0.277	-0.002	-0.148	0.139	0.101	0.206	0.798
Seff4	0.42	-0.046	-0.356	0.163	0.112	0.093	0.918

Source: Field Data, 2017

5.4 Assessing the Structural Model

Once the construct measures have been confirmed as reliable and valid, the next thing to do is to assess the structural model results which includes the evaluation of the model's predictive capabilities and the relationships between the constructs (Hair et al., 2013). However, before assessing the structural model, collinearity issues were examined and the result shows that all the VIF's were below the required threshold of 5 (Rezaei & Ghodsi, 2014). Therefore, following the suggestion by Hair et al. (2013) for assessing the structural model, a bootstrapping (2000 re-sample) analysis was performed using PLS-SEM algorithm to estimate the statistical significance of the path coefficients (structural/model relationships) and the R^2 values after computing the path estimates in the structural model which represent the hypothesized relationships between the constructs. Most notably,

according to Vieira (2011) in assessing the structural model, there are some key issues of interest that need to be considered: (i) are the directions of the relationships between the constructs the same as hypothesised? (ii) Is the strength of the hypothesized relationships, reflected by the estimated parameters significant (i.e, are their respective t-values greater than 1.96)? and (iii) is the amount of variance in the endogenous variables explained by the respective proposed determinants, evaluated based on the squared multiple correlations (R^2) for the structural model?

5.4.1 The Relationship between the HBM Constructs and Hepatitis B Preventive Behaviour

Prior to exploring the relationship between the HBM constructs and HBV preventive behaviour it must be noted that the two data samples were combined into one file and used as the working file to analyse the structural relationships. According to Ainin et al. (2015), there are two main measures for estimating the structural model: these consist of R^2 of endogenous latent values and the estimated path coefficients. In this analysis, the R^2 value for the endogenous constructs was 0.447. The R^2 value shows that HBM constructs (susceptibility, severity, benefits, barriers, cues to action and self-efficacy) have a moderate predictive capacity in determining Hepatitis B preventive behaviour (Chin, 1998). On the other hand, the path coefficients were assessed based on signs and magnitude. The path coefficient and t-value for the significant (alpha) level of 0.05 are 1.96 and the alpha level of 0.01 is 2.575.

As shown in Table 5.6 and figure 5.1 below, out of the six path coefficients, five (5) were statistically significant at 5% alpha level. More specifically, the result showed a positive significant relationship between perceived benefits and preventive behaviour ($\beta = 0.2965$, t-value = 5.673,

$p < .001$). The relationship between Perceived susceptibility and preventive behaviour was also significant ($\beta = 0.318$, t-value = 8.575, $p < .000$). Additionally, a positive significant relationship was found between self-efficacy and preventive behaviour ($\beta = 0.269$, $t = 8.333$, $p < .000$). On the other hand, although the relationship between cues to action and preventive behaviour was significant ($\beta = -0.125$, $t = 3.039$, $p < 0.01$), the relationship was negative. Perceived barriers also recorded a significant negative relationship with preventive behaviour ($\beta = -0.1443$, t-value = 3.639, $p < .001$).

On the contrary, the study revealed perceived severity to be statistically insignificant with preventive behaviour ($\beta = -0.023$, $t = 0.522$, $p > 0.5$). Thus, the null hypotheses H1a, H1b, H1c, H1d and H1f were all not supported, while hypothesis 1e (H1e) was supported in this study. It can be seen from Table 5.6 that among the six constructs of the Health Belief Model, perceived susceptibility and preventive behaviour ($t = 8.575$), had the strongest and statistically significant relationship. This was followed by the relationship between self-efficacy and preventive behaviour ($t = 8.333$) and then the relationship between perceived benefits and preventive behaviour ($t = 5.673$). The implication is that these three constructs were found to be influencing factors for HBV preventive behaviour in the study's sample. Hence, implementers of social marketing intervention programmes must seriously consider these three constructs when designing HBV intervention programmes in Ghana because they are found to have strong predictive capabilities.

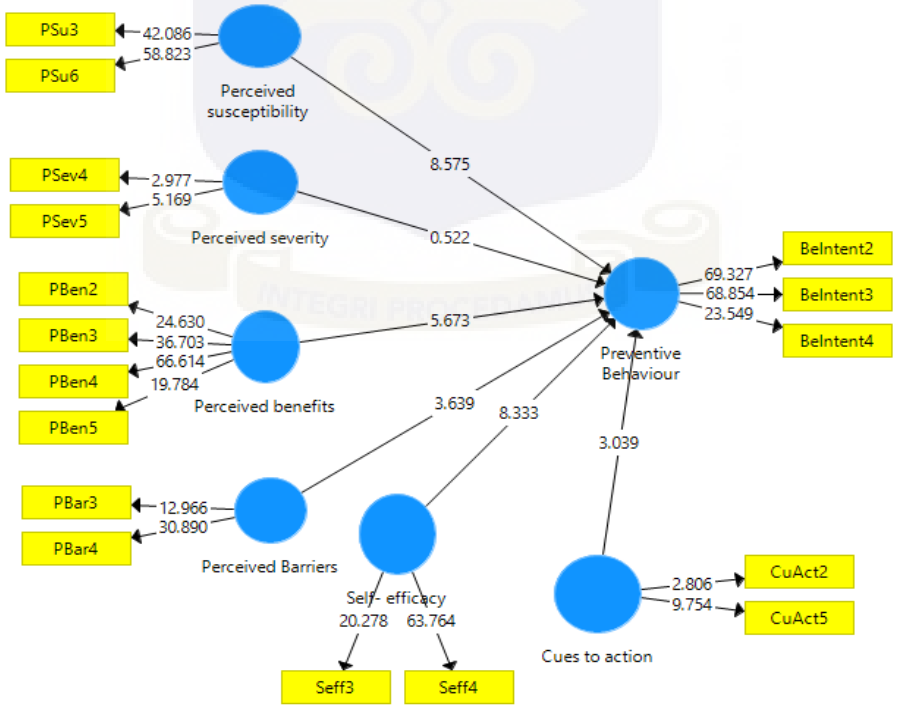
Table 5.6: Structural Model Assessment Results

Construct Structural Relationships	*B* Estimate	T values	P values
Cues to action -> Preventive Behaviour	-0.125	3.039	**0.002****
Perceived Barriers -> Preventive Behaviour	-0.144	3.639	**0.000*****
Perceived benefits -> Preventive Behaviour	0.296	5.673	**0.000*****
Perceived severity -> Preventive Behaviour	-0.023	0.522	0.601
Perceived susceptibility -> Preventive Behaviour	0.318	8.575	**0.000*****
Self- efficacy -> Preventive Behaviour **R^2 = 0.447**	0.269	8.333	**0.000*****

Note: ***p < 0.001; **p < 0.01; *p < 0.05

Source: Field Data, 2017

Figure 5.1: Structural Model Assessment Results



Source: Field Data, 2017

5.4.2 Test for Moderation

From the literature review, it was established that looking at the direct relationship between the HBM constructs and HBV prevention may be inadequate without accounting for the impacts of other factors. Accordingly, this study hypothesised that place of residence could moderate the relationship between the HBM constructs and Hepatitis B preventive behaviour. Thus, PLS, multi-group analyses (PLS-MGA), comparisons were conducted to determine if significant differences exist (Sarstedt, Henseler, Ringle et al., 2011) between slums and non-slum with regards to Hepatitis B preventive behaviour. PLS-MGA provides outcomes that are based on bootstrapping results from every group. *A result is significant at the 5% alpha level if the p-value is smaller than 0.05 or larger than 0.95* for a certain difference of group-specific path coefficients (Sarstedt et al., 2011). The multi-group analysis results for the two groups are displayed in Table 5.7.

Table 5.7: Partial Least Squares Multi-Group Analysis (PLS-MGA)

	Group1	**Group 2**	**Path Coefficients**	**P-value**
Path Coefficients	**Slums**	**Non-slums**	**(Group differences)**	**Grp1 vrs Grp2**
Cues to action -> Preventive Behaviour	0.243	0.464	0.295	0.962
Perceived Barriers -> Preventive Behaviour	0.033	-0.056	0.065	0.803
Perceived benefits -> Preventive Behaviour	0.246	0.215	0.031	0.341
Perceived severity -> Preventive Behaviour	-0.227	-0.162	0.088	0.156
Perceived susceptibility -> Preventive Behaviour	0.344	0.229	0.221	0.998
Self- efficacy -> Preventive Behaviour	-0.273	0.022	0.115	0.05

Note: According to Sarstedt et al. (2011), sign. at 5% if p-value < 0.05 or > 0.95

R^2= 0.583

Source: Field Data, 2017

As seen in Table 5.7, the path coefficients for the two groups (slums and non-slums) indicate that there are statistically significant differences among the two groups, in the areas of cues to action→ preventive behaviour (p = 0.962), perceived susceptibility →

preventive behaviour (p = 0.998), and self-efficacy → preventive behaviour (p = 0.05). However, perceived barriers → preventive behaviour (p = 0.803), perceived benefits → preventive behaviour (p = 0.341) and perceived severity → preventive behaviour (p = 0.156), were not significantly different between the two groups.

5.5 Hypotheses Testing

This section tests all the hypotheses which were formulated in chapter three of this study. These hypotheses were formulated on grounds of review of literature in the subject area. The main research objectives were; (i) to determine the relationship between the Health Belief Model (HBM) constructs and Hepatitis B preventive behaviour (ii) to determine the moderating role of place of residence on the relationship between the HBM constructs and Hepatitis B preventive behaviour. Table 5.8 presents a summary of the results of the hypotheses testing based on these research objectives.

Table 5.8: Summary of Results of Hypothesised Relationships

Results of Hypotheses Testing	β (p-value)	t-value	Results
H1a: There is no statistically significant relationship between perceived susceptibility and Hepatitis B preventive behaviour.	0.32(0.00)***	8.43	Not supported
H1b: There is no statistically significant relationship between perceived severity and Hepatitis B preventive behaviour.	0.02 (0.58)	0.54	Supported
H1c: There is no statistically significant relationship between perceived benefits and Hepatitis B preventive behaviour.	0.30(0.00)***	5.62	Not supported
H1d: There is no statistically significant relationship	0.14(0.00)***	3.54	Not supported
Table 5.9: Summary of Results of Hypothesised Relationships			
H1e: There is no statistically significant relationship between cues to action and Hepatitis B preventive behaviour.	0.13(0.00)***	3.00	Not supported
H1f: There is no statistically significant relationship between self-efficacy and Hepatitis B preventive behaviour.	0.27(0.00)***	8.53	Not supported
Multi-Group Analysis (Place of Residence)	**Sig. at 5% when P< 0.05 or > 0.95**		
H2a: Place of residence significantly moderates the relationship between perceived susceptibility and Hepatitis B preventive behaviour.	0.99*	0.22	Supported
H2c: Place of residence significantly moderates the relationship between perceived benefits and Hepatitis B preventive behaviour.	0.34	0.03	Not supported
H2d: Place of residence significantly moderates the relationship between perceived barriers and Hepatitis B preventive behaviour.	0.80	0.07	Not supported
H2e: Place of residence significantly moderates the relationship between cues to action and Hepatitis B preventive behaviour.	0.96*	0.29	Supported
H2f: Place of residence significantly moderates the relationship between self-efficacy and Hepatitis B preventive behaviour.	0.05**	0.12	Supported

5.6 Discussion of Findings

The main aim of this study was first, to determine the relationship between the HBM constructs and HBV Preventive behaviour; and second, to examine the moderating effect of place of residence on the relationship between the HBM constructs and HBV preventive behaviour. This section discusses the major findings in line with the research objectives. Additionally, hypotheses testing are presented as well as their significance, particularly, in relation to findings from other reported studies in the literature.

5.6.1 Examining the relationship Between the HBM Constructs and Hepatitis B Preventive Behaviour.

First, to answer this research objective, a path analysis was conducted using structural equation modelling to assess the relationship between each individual construct of the HBM and Hepatitis B preventive behaviour. The results of this study found that the HBM constructs explain 44.7 percent of the variance in Hepatitis B preventive behaviour. Furthermore, the findings reveal that perceived susceptibility, perceived benefits, perceived barriers, cues to action and self-efficacy significantly influence Hepatitis B preventive behaviour. On the contrary, perceived severity was found not to be significantly related to Hepatitis B preventive behaviour. Specifically, the relationship between the individual constructs and HBV preventive behaviour are discussed below.

H1a: There is no Statistically Significant Relationship between Perceived Susceptibility (PSU) and HBV Preventive Behaviour

The above hypothesis proposed no significant relationship between PSU and HBV preventive behaviour. However, Table 5.6 above shows that perceived susceptibility has a very strong positive effect on Hepatitis B preventive behaviour ($p < 0.01$). Perceived susceptibility is the degree to which a person believes he/she is at risk or vulnerable to a

particular condition which informs the persons' decision as to whether to perform a proposed behaviour or not. The finding of this study suggests that in Ghana, individuals will be more willing to adopt HBV preventive behaviour if they are aware of how the disease is transmitted. For instance, if they believe that they are likely to contract HBV infection through sexual activities, kissing, tattooing and body piercing they are likely to take preventive measures to avoid contracting the disease. This finding is in line with the assertion made by Champion and Skinner (2008), that individuals will only adopt a healthy behaviour when they perceive they are vulnerable to it.

H1b: There is no Statistically Significant Relationship between Perceived Severity (PSEV) and HBV Preventive Behaviour

The hypothesis predicted no significant relationship between PSEV and HBV preventive behaviour. As expected, the study did not find a significant relationship between perceived severity and HBV preventive behaviour ($p > 0.05$). This finding could possibly mean that although averagely most Ghanaians know the negative consequences associated with HBV infection, this does not influence them to adopt HBV preventive behaviour. This implies that the respondents may perceive the disease to be for some particular group of people and not for them so they do not see the need to engage in HBV preventive behaviour because the severity of the disease does not matter to them. Another reason could possibly be that most Ghanaians do not see HBV infection as the most dangerous disease they could ever contract and some even perceive malaria or cold as been more dangerous than Hepatitis B due to the lack of knowledge about the disease. This is not a surprise finding as some studies have indicated perceived severity to be a weak direct predictor of preventive behaviour (Carpenter, 2010).

H1c: There is no Statistically Significant Relationship between Perceived Benefits (PBEN) and HBV Preventive Behaviour

Hypothesis 1c predicted no significant relationship between PBEN and HBV preventive behaviour. Contrary to the hypothesis set above, perceived benefits significantly influence Hepatitis preventive behaviour ($p < 0.05$). It must be mentioned that perceived benefits are the promised satisfaction/advantages the individual derives when he/she performs the behaviour. The findings of this current study imply that most Ghanaians will be more willing to participate in the preventive behaviour when they believe that adopting the behaviour would decrease their chances of death and also be a good way to protect their loved ones. In other words, if they attach more value to the behaviour they would be more committed towards taking preventive measures to avoid contracting the disease. This result disconfirms a study by Karimi, Biemans, Lans, Chizari and Mulder (2016) who found no significant relationship between perceived benefits and physical activity behaviour.

H1d: There is no Statistically Significant Relationship between Perceived Barriers (PBAR) and HBV Preventive Behaviour

Most surprisingly, the findings for the above hypothesis indicate a significant negative relationship between perceived barriers and HBV preventive behaviour ($p < 0.001$). Barriers are the obstacles or challenges that hinder one's ability to perform a given or desired behaviour and so from the analysis, it can be inferred that most Ghanaians have negative attitudes toward HBV prevention and are most likely not to engage in the proposed behaviour as a result of the barriers. In other words, because the relationship is inverse, the lower the barriers to the preventive behaviour, the higher the indulgence and the higher the barriers, the lower the participation in the behaviour. For example, individuals who perceive that they cannot afford the cost of the preventive vaccine and also feel that accessing a vaccination centre is difficult for them will feel reluctant to be part of the

preventive behaviour. On the other hand, the fewer difficulty Ghanaians are able to locate a vaccination centre, the more likely they are to engage in the vaccination behaviour. This finding is consistent with previous studies. For instance, Karimi et al. (2016) found that perceived barriers had a negative and significant association with physical activity behaviour.

H1e: There is no Statistically Significant Relationship between Cues to Action (CuAct)) and HBV Preventive Behaviour

Cues to action were found to have a negative significant relationship with Hepatitis preventive behaviour ($p < 0.05$), meaning that, cues to action was identified as a weak predictor of Hepatitis B preventive behaviour. Indeed, the low predictive power of cues to action in this study could be explained that most Ghanaians may not rely entirely on external cues such as mass media adverts on HBV, health education from health practitioners among many others to inform their decision to perform the behaviour, however, they are able to generate their own internal cues that could trigger behaviour change. This finding is in line with Antonovosky and Kats (1970) who contend that people may not rate the importance of cue to change accurately and so may not influence them to engage in preventive behaviour.

H1f: There is no Statistically Significant Relationship between Self-Efficacy (SEFF) and HBV Preventive Behaviour

With hypothesis H1e, the study predicted no significant relationship between SEFF and HBV preventive behaviour. Self-efficacy is the degree of confidence in one's ability to perform a given or proposed behaviour in the midst of several challenges or obstacles. Interestingly as shown in Table 5.6 the finding revealed a significant relationship between SEFF and preventive behaviour. Most notably, self-efficacy is found to be one of the strong

predictors of HBV preventive behaviour ($p < 0.05$). This means that in Ghana, the respondents who believe they have high confidence in their ability to prevent themselves from contracting HBV infection are likely to express greater interest in preventive behaviours. For example, individuals who believe that they can afford the cost of the preventive vaccine and are also confident that the preventive vaccine is effective in protecting them from contracting the disease are more likely to partake in the behaviour. This finding confirms previous studies' findings (eg.Teixeira, Silva, Mata, Palmeira & Markland, 2012; Palmeira et al., 2007) that also found self-efficacy to be one of the most important predictors of preventive behaviour.

5.6.2 Testing t*he Moderating Effect of Place of Residence on HBM Constructs and HBV Preventive Behaviour*

In order to achieve this objective, a multi-group analysis using PLS (PLS-MGA) was conducted to determine if significant differences exist between slum and non-slum samples, with regards to Hepatitis B preventive behaviour using the bootstrapping approach (Sarstedt et al., 2011). Sarstedt et al. (2011), indicate that in PLS-MGA, *a result is significant at the 5% alpha level if the p-value is less than 0.05 or more than 0.95 ($p<0.05$ or $p >0.95$)* for a certain difference of group specific path coefficients. The result indicates that there were significant differences between slums and non-slums with regards to how cues to action, perceived susceptibility and self-efficacy influence preventive behaviour. However, perceived barriers and perceived benefits with respect to preventive behaviour were not significantly different between the two groups. It must be mentioned that the perceived severity construct was not moderated with place of residence because it was an insignificant predictor indictor (Sarstedt et al., 2011). Below are the specific discussions for the group differences.

H2a: Place of Residence Significantly Moderates the Relationship between Perceived Susceptibility and HBV Preventive Behaviour.

Table 5.7 indicates that there was a significant difference between slum and non-slum as regards how perceived susceptibility influence HBV preventive behaviour (p = 0.998). This finding suggests that non-slum dwellers do not perceive that they are at risk of HBV infection because they probably consider HBV to be a disease for the poor, and so the non-slum dwellers, because they are rich, believe that if they get the disease they can afford its treatment and so are not likely to adopt the behaviour. However, most slum dwellers believe that because of their way of life in these areas they are at risk of the disease and so are more likely to engage in HBV preventive behaviour because they perceive that they may not be able to afford the cost of the treatment of the disease if they contract it, hence the option left for them is to stick to the saying that "prevention is better than cure" through the vaccine.

H2c: Place of Residence Significantly Moderates the Relationship between Perceived Benefits and HBV Preventive Behaviour

Contrary to the proposed hypothesis above, Table 5.7, indicate that there was no significant difference between the slum and non-slum with regards to perceived benefits influence on HBV preventive behaviour. This means that the respondents in these two communities do not believe that where they live could actually determine what they stand to gain when they engage in the behaviour. In other words, they have the perception that irrespective of where they live the benefits they will derive from performing the behaviour will be the same. For instance, they both believe that if they engage in the behaviour, it will decrease their chances of getting liver cancer, and it will be a good way to protect their partners from contracting the disease and also decrease their chances of death.

H2d: Place of Residence Significantly Moderates the Relationship between Perceived Barriers and HBV Preventive Behaviour.

The result for hypothesis 2d reveals no significant difference between the slum and non-slum with respect to perceived barriers influence on HBV preventive behaviour. This result is surprising, because, one would expect that what slums consider as barriers would be different from how non-slum perceive barriers, however, the finding of this study indicates that individuals in these two communities believe that irrespective of where they live the barriers to HBV prevention is the same. For instance, residents of the two communities perceive that irrespective of where they live the value they stand to obtain when the engage in the preventive behaviour is more than the cost they will incur if they do not adopt the preventive behaviour.

H2e: Place of Residence Significantly Moderates the Relationship between Cues to Action and HBV Preventive Behaviour.

As shown in Table 5.7, there was a significant difference between the two groups as regards how cues to action influence HBV preventive behaviour. This means that what informs or trigger individuals to change their behaviour might differ amongst the two groups. This implies that mass media campaigns will not be appropriate when designing interventions for these two communities as the finding reveals that different triggers influence their decision to engage in the preventive behaviour. For instance, non-slum dwellers are likely to have access to more information about the disease as opposed to slum dwellers. In other words, non-slum residents may be privy to different medium of communications for instance the internet, Television, Newspapers, flyers and many others which create some form of awareness or education about HBV as opposed to their slum counterparts who are unable to access these channels of communication which hinder their ability to engage in the preventive behaviour. It is worth mentioning that in communicating HBV intervention

to these two groups different forms of communication is needed for the different segments, what is used to communicate to non-slum dwellers might not be applicable to slum dwellers. For instance, if all the communications are in a certain language like English, it might defeat the purpose because mostly those in the slum areas are perceived to be uneducated.

H2f: Place of Residence Significantly Moderates the Relationship between Self-Efficacy and HBV Preventive Behaviour.

Self-efficacy also recorded a statistically significant difference in the two communities. This result indicates that non-slum dwellers are more confident in their ability to perform the preventive behaviour as opposed to their slum counterparts. This finding is not surprising as people who live in the non-slum areas are highly educated, more knowledgeable, wealthier and are able to receive and assimilate interventions on HBV as compared to their slum counterparts.

5.7 Chapter Conclusion

This chapter examined the relationship between the HBM constructs and Hepatitis B preventive behaviour and also investigated the effect of place of residence (slums and non-slums) on these relationships. The results revealed that the HBM has an influence on preventive behaviour and also, place of residence plays a significant role in this relationship. The next chapter discusses the summary, conclusions and implications of the study, and indicates research limitations for further research.

CHAPTER SIX

SUMMARY, CONCLUSIONS AND IMPLICATIONS

6.0 Introduction

This chapter summarises the major findings of the study. It discusses the implications of the study and also indicates research limitations and opportunities for future research studies. The next section presents the summary of the research.

6.1 Summary of Major Findings

This study applied the HBM to predict and understand Hepatitis B preventive behaviour in the Ghanaian context. Based on the objectives of the study, the following is the summary of findings from the analysis.

Research Objective 1: To determine the relationship between the constructs of the HBM and Hepatitis B preventive behaviour

In line with this objective, the results of the study reveal that: (1) there is a statistically significant relationship between individual's perceived susceptibility and Hepatitis B preventive behaviour, (2) there is no statistically significant relationship between individual's perceived severity of the disease and Hepatitis B preventive behaviour, (3) there is a statistically significant relationship between perceived benefits and Hepatitis B preventive behaviour, (4) there is a statistically significant relationship between perceived barriers and Hepatitis B preventive behaviour, (5) There is a statistically significant relationship between cues to action and Hepatitis B preventive behaviour, (6) there is a statistically significant relationship between individuals perceived self-efficacy and Hepatitis B preventive behaviour. This means that social marketers in Ghana can design effective intervention programmes based on the constructs of the model to increase the

education towards Hepatitis B preventive behaviour while emphasising on the mode of transmission of the disease.

Research Objective 2: To determine if the place of residence significantly moderate the relationship between the HBM constructs and Hepatitis B preventive behaviour.

Based on this objective, the result reveals that there were statistically significant differences between the slum and non-slum samples with regards to how perceived susceptibility, cues to action and self-efficacy influence Hepatitis B preventive behaviour. On the contrary, there were no significant differences between the groups with respect to how perceived barriers, perceived benefits and perceived severity influence Hepatitis B preventive behaviour. This means that respondents, in these two communities have the perception that irrespective of where they live, the cost they have to pay in exchange for the behaviour is the same. Additionally, they perceive that the benefits they will accrue when they engage in the behaviour are the same irrespective of their place of residence.

6.2 Conclusions

The Health Belief Model served as an effective framework for predicting and understanding Hepatitis B preventive behaviour among Ghanaians. Thus, from a theoretical perspective, this study's findings provide empirical evidence of the applicability of the theory of Health Belief in predicting Hepatitis B preventive behaviour between slum and non-slum dwellers in the Ghanaian context. All the constructs of the HBM with the exception of perceived severity had a statistically significant relationship with Hepatitis B preventive behaviour as proposed by the model. The model postulates that perceived severity is the individual's own evaluation of the condition and the associated impacts once contracted. If their assessment portrays the condition or disease to be severe/serious, then, they are likely to engage in the preventive behaviour. However, if the individual perceives the condition or disease to be

normal, there is no way there can be behaviour change. The present study findings in the Ghanaian context is similar to previous studies that have employed the HBM to predict and understand preventive behaviour (Cumberland, 2009; Rosenstock, 1988). The study argues that in the Ghanaian context, individuals perceived the seriousness of Hepatitis B does not influence their action against the disease. Hence, in designing social marketing intervention programmes on Hepatitis B in Ghana, the study recommends that the severity construct is deleted from HBM constructs as this will help the implementers of social marketing interventions to effectively develop interventions in Ghana that will aid in the understanding of why Ghanaians are not engaging in HBV preventive behaviour.

In addition, scholars have argued that other uncontrollable factors such as place of residence have an effect on the relationship between the HBM Constructs and preventive health-related behaviour. Place of residence recorded some significant differences among the two groups (cues to action, perceived susceptibility and self-efficacy to Hepatitis B preventive behaviour), while constructs such as perceived barriers, perceived benefits and perceived severity had no significant differences between the two groups (slums and non-slums). The study, therefore, suggests that it is important for social marketers to understand the differences among the targeted population so that intervention programmes on Hepatitis B could be tailor-made to suit their target audience. In other words, implementers of social marketing intervention programmes should target different segments in Ghana and then design tailor-made communications to the different segments of participants. The criteria for the segments could be based on the prevalence of the disease, the language barriers and the significant differences among Ghanaians. The study, thus, concludes that a social marketing intervention programme that seeks to reduce the environmental barriers and increase the benefits associated with the performance of the behaviour while highlighting

the means through which the disease is contracted will yield a better result in Ghana. The next section discusses the implications of the study.

6.3 Implications of the Study

This thesis makes a contribution to theory, practice, policy and other social issues affecting daily life.Thus, the next section discusses the implications of the study to social marketers and policy makers.

6.3.1 Theoretical implications

This study has for the first time included place of residence in the Health Belief Model in social marketing to explore Hepatitis B preventive behaviour in the Ghanaian context. The HBM used as the conceptual framework has been effective in predicting and understanding HBV related behaviours in Ghana. The study found all the constructs of the HBM to be applicable in the Ghanaian context with the exception of the association between perceived severity and HBV preventive behaviour. This indicates that in the Ghanaian context individuals perceived severity of the disease does not influence their behaviour to protect themselves against the disease

6.3.2 Social Marketers Implication of the study

Based on the result of this study, the researcher suggests that, because, effective social marketing behaviour change programmes demand a set of clear, measurable and behavioural objectives, that can be achieved within a stipulated timeframe of the specific intervention programme, it is important that social marketing intervention programmes on Hepatitis B are designed based on marketing principles such as the 4Ps: product, price, promotion and place.

The first 'P', representing product, is the set of benefits associated with the behaviour. In other words, the benefits the individuals stand to gain or expect to get when they engage in the recommended behaviour (Hepatitis B preventive behaviour) (Grier & Bryant, 2005). The social marketing implication is that, in designing intervention programmes on Hepatitis B preventive behaviour, the implementers must focus their attention on creating awareness, educating the publics about the benefits that will accrue to them as a result of adopting a healthy behaviour. It must, however, be mentioned that the awareness/knowledge of a disease does not necessarily lead to behaviour change, nonetheless, an awareness of the disease and an understanding of the severity of the consequences and the associated preventive benefits can engender behaviour change. Also, social marketers can increase the ability and confidence (self-efficacy) of the of the target audience by using prominent personalities or opinion leaders in their campaigns to demonstrate that the disease is no respecter of persons. Thus, whether rich or poor, anyone can contract it. In the same vein, anyone has the ability to prevent it and this could influence behaviour change.

The second 'P' which is price, includes the costs the target audience has to give up and the barriers they have to overcome in order to engage in the preventive behaviour. The implication for social marketers regarding price is that they should address the environmental barriers by designing campaigns to influence policy-makers and implementers to improve the environmental settings and also reduce the price one has to pay to participate in the preventive behaviour.This is necessary because, literature has shown that, it is easier to change the environmental settings by policy makers than behaviour. Once policy makers are able to effect changes in the environmental settings, it will help reduce the physical barriers, then implementers can design social marketing interventions to influence the downstream (individuals) to adopt the preventive behaviour. Like commercial marketing, consumers/target audience will be hesitant to engage in

preventive behaviour, if they perceive that the price exceeds the expected value. Hence, to make the performance of the recommended behaviour easy, social marketers must focus on minimising the non-monetary costs (psychological cost) associated with Hepatitis preventive behaviour.

Promotion is the third P and it is the channel or manner through which the desired behaviour is communicated to the target group. Social marketing interventions must be tailor-made to suit the target group, as mass approaches do not mostly yield successful intervention. For instance, the local language of the community should be used as this could enhance effective communication and understanding of the disease. Notably, audience research is critical prior to any intervention programme to understand the differences among the targeted population. Consequently, implementers of social marketing intervention programmes should target different segments in Ghana and then design tailor-made communications to the different segments of participants. The criteria for the segments could be based on the prevalence of the disease, the significant differences among Ghanaians and the social marketer's ability to identify the target group.

Also, the research found that non-slum dwellers are more likely to have more cues to action than their slum counterparts. This means that non-slum dwellers may be privy to various communication medium through which they can access information on Hepatitis B as opposed to their slum counterparts. It is, therefore, important for implementers of social marketing intervention programmes, to identify and employ the most effective medium through which the campaign can be communicated. The researcher recommends that the local radio stations and the information centres should be the main channel through which the intervention programme is communicated to the slum communities, whereas, the

internet, television and radio can be used to communicate the campaign messages to the non-slum communities.

The last but not the least ‘P’ place. Place represents the location where the behaviour takes place. In social marketing, place is very critical as this is where the social marketer exposes the target audience to the programme or put systems in place that engenders the adoption of behaviour. Social marketers should make Hepatitis B vaccination centres easily accessible, as the greater the ease and convenience of getting the Hepatitis B vaccination, the more likely it is that the behaviour will be adopted.

In conclusion, the researcher is of the opinion that, the virtual decoupling of Hepatitis B education from the liver, which is the reference point of the disease is worrying, hence, the researcher recommends twin-thematic focus intervention programmes on Hepatitis B and liver to help the public easily relate liver cancer to Hepatitis B infection.

6.3.3 Implication for Policy Makers

Policy-makers must institute intervention programmes that will encourage people to go for the Hepatitis B vaccine to prevent themselves from contracting the disease. For instance, Ministry of Health can institute National Hepatitis B free screening and vaccination surveillance in all regions. This is important because considering the high incidence and the limited education and ignorance about the disease, screening as well as vaccination cannot be treated on demand and supply basis. Thus, this study is of the view that a more sustainable measure is to establish free screening and vaccination centres in all the regions to enable the public engage in the preventive behaviour.

Furthermore, policy makers must also consider the inclusion of Hepatitis B vaccine in the National health insurance scheme to enable more people especially those living in rural areas and also those who can not afford the cost of the vaccine to engage in the vaccination behaviour which will go a long way to reduce this health menace in the country.

The study further recommends that the government of Ghana should consider making funding arrangements for Hepatitis B education as currently there are no funding arrangements.

6.4 Limitations of the Study and Future Research Directions

This study is subject to some limitations. One of the main limitations is that the study used some selected communities specifically slums and non-slums within the Greater Accra Region. Hence, generalisation from the findings should proceed cautiously as for instance, one could argue that the behaviour of slum dwellers may be different from non-slum dwellers The study, thus, recommends that future research could be conducted in other geographical settings with the Health Belief Model or another behavioural theory in social marketing.

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APPENDIX: QUESTIONNAIRE

UNIVERSITY OF GHANA BUSINESS SCHOOL
DEPARTMENT OF MARKETING AND ENTREPRENEURSHIP

Dear respondent,

The researcher is a final year Mphil marketing student from **the University of Ghana Business Schoo**l. The researcher is conducting a research on the topic "***the Health Belief Model in Social Marketing Interventions to predict Hepatitis B Preventive Behaviour***. In answering the questionnaire, please keep in mind that "social marketing is about changing or modifying behaviour". You are assured of strict confidentiality as your responses to items on this questionnaire will be used for academic purposes only. Please fill out this questionnaire by ticking (√) where necessary. Thank you.

Section A: General Information on Respondent

1. **Gender:** Male [ ] Female [ ]
2. **Age of respondents:** 18-24 [ ] 25-30 [ ] 31-40 [ ] 41-50 [ ] 51 and above [ ]
3. **Marital status:** Single [ ] Married [ ] Divorced [ ] Widowed [ ] Separated [ ] Co-habitation [ ]
4. **Average monthly income (GH₵):** None [ ] Less than 100 [ ] 110-500 [ ] 510-1000 [ ] Above 1000 [ ]
5. **Level of education:** No formal Education [ ] Primary education [ ] JHS education [ ] SHS/ A' Level education [ ] Tertiary education [ ]
6. **Employment status:** Salaried Worker [ ] Self-employed [ ] Unemployed [ ]
   Others [Please specify]…… ……
7. **Area of residence of respondents**
   Please Specify……

Section B: Respondents Knowledge about Hepatitis B virus

Please select the appropriate response

8. Have you been exposed to any interventions on Hepatitis B? Yes [ ] No [ ]
9. **If yes, which medium exposed you to the Hepatitis B intervention?**
   You can select as many as possible from the options below:

   TV [ ] Newspaper/Magazine/ flyers [ ] Billboards [ ] Radio [ ] Health Workers [ ]
   Word Of Mouth (Friends, Relatives, Church, Mosque, Teachers, Etc.) [ ]

   Others (specify)……

10. How is Hepatitis B transmitted?

Please note: you can choose as many as possible

1. Through hugging [ ]
2. Through kissing [ ]
3. Sharing of personal items (razors, towels, toothbrushes etc.,) [ ]
4. Through unprotected sex [ ]
5. Tattooing and body piercing [ ]
6. Unsterilized syringes [ ]
7. Blood transfusion [ ]
8. Exposure to body fluids (sweat, vaginal discharge, saliva) [ ]
9. Through witchcraft/curses [ ]
10. Through communal living [ ]

11. Can Hepatitis B cause cancer?

1. Yes [ ]
2. No [ ]

12. Is there an available vaccine for Hepatitis B prevention?

1. Yes [ ]
2. No [ ]

13. Is Hepatitis B preventable?

1. Yes [ ]
2. No [ ]

14. Is there anything a person can do to avoid getting Hepatitis B

1. Yes [ ]
2. No [ ]

15. If the answer to question 14 is yes, what can a person do to protect him/herself from getting Hepatitis B virus infection?

Please note: you can choose as many as you want from these responses

1. By getting the Hepatitis B vaccination [ ]
2. Avoid having unprotected sex [ ]
3. Avoid kissing [ ]
4. Avoid sharing toothbrush, blades and needles [ ]
5. Avoid body piercing and tattooing [ ]
6. Avoid having multiple sexual partners [ ]
7. Avoid sharing towel and bed with an infected person [ ]
8. Abstain from sex before marriage [ ]

Section C: Measuring the constructs of the Health Belief Model.

Please respond using the scale below by ticking the appropriate alternative
1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree

No.	PERCEIVED SUSCEPTIBILITY	SD	D	N	A	SA
	Items	**1**	**2**	**3**	**4**	**5**
16	It is likely that I can get Hepatitis B virus infection					
17	I can get Hepatitis B infection through body piercing					
18	I can get Hepatitis B infection through tattooing					
19	I can get Hepatitis B through kissing					
	PERCEIVED SEVERITY	**SD**	**D**	**N**	**A**	**SA**
	Items	**1**	**2**	**3**	**4**	**5**
20	If I get infected with Hepatitis B virus, I will be more likely to have liver cancer					
21	If I get Hepatitis B, I might not be able to provide for myself and my family					
22	Getting infected with Hepatitis B could endanger the lives of my family					
	PERCEIVED BENEFITS	**SD**	**D**	**N**	**A**	**SA**
	Items	**1**	**2**	**3**	**4**	**5**
23	Getting Hepatitis B vaccination can be a good way to protect my life					
24	Getting Hepatitis B vaccination would decrease my fear of getting infected with Hepatitis B					
25	Getting Hepatitis B vaccination would be a good way to protect the health of my sex partner (s)/family					
26	Getting the vaccination for Hepatitis B would be a responsible thing to do					
27	Getting Hepatitis B vaccination will decrease my chances of death					
	PERCEIVED BARRIERS	**SD**	**D**	**N**	**A**	**SA**
	Items	**1**	**2**	**3**	**4**	**5**
28	It is very difficult to locate a vaccination center					
29	I cannot afford the cost of the 3 dose vaccine shots					
30	Hepatitis B vaccination can be painful and uncomfortable					
31	It is socially embarrassing for me to go for the vaccine					
32	It is hard to remember vaccination dates					
	CUES TO ACTION	**SD**	**D**	**N**	**A**	**SA**
	Items	**1**	**2**	**3**	**4**	**5**
33	A family member who was diagnosed of Hepatitis B prompts me of the vaccination.					
34	Commercials from the media reminds me of Hepatitis B vaccination					
35	My doctor recommended the Hepatitis B vaccine to me					
36	My family/friends reminds me to go for the Hepatitis B vaccination					
	SELF EFFICACY	**SD**	**D**	**N**	**A**	**SA**
	Items	**1**	**2**	**3**	**4**	**5**
37	I can go for the Hepatitis B vaccination without feeling embarrassed					
38	I can go for all the 3 shots of Hepatitis B vaccination, despite the possible side effect from the vaccine					
39	I am capable of going for the Hepatitis B vaccine despite the pain from injection					
40	I am confident that the Hepatitis B vaccine is effective					

Using a scale of 1-5 below, please respond to each of the statements below by ticking the appropriate option, even if you have never engaged in any of the behaviours stated below. In such cases, indicate how you would feel in such a situation. 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree.

	PREVENTIVE BEHAVIOUR	SD	D	N	A	SA
	Items	**1**	**2**	**3**	**4**	**5**
41	I am likely to go for the Hepatitis B vaccination					
42	For fear of getting Hepatitis B, I am likely to avoid kissing indiscriminately					
43	I am likely to stop sharing personal items with friends and family for fear of Hepatitis B virus infection					
44	I am likely to stop having multiple sexual partners because I am scared of getting the disease					
45	I am likely not to engage in body piercing and tattooing for fear of getting Hepatitis B virus infection					

Thank you!!!