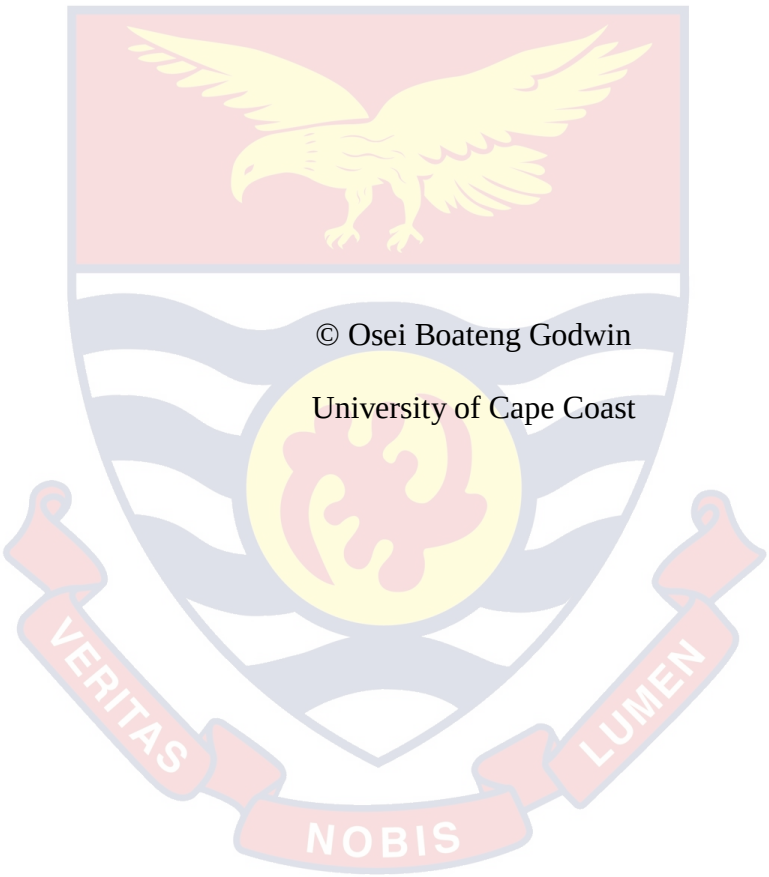
UNIVERSITY OF CAPE COAST

INFLUENCE OF RELIGIOUS COPING STYLES ON PSYCHOLOGICAL HEALTH OF HEPATITIS B PATIENTS IN KUMASI METROPOLIS

OSEI BOATENG GODWIN

2020



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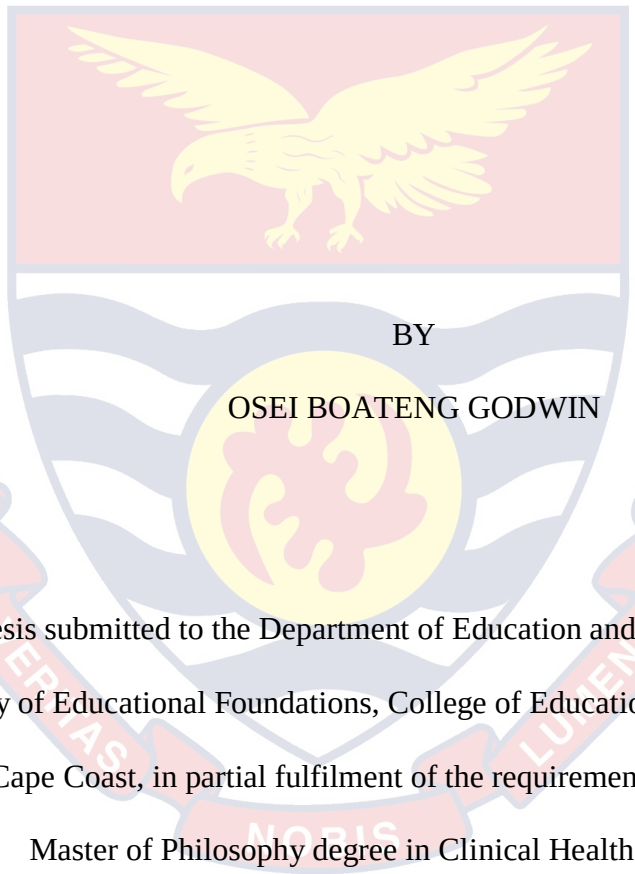

BY

OSEI BOATENG GODWIN

Thesis submitted to the Department of Education and Psychology of the Faculty of Educational Foundations, College of Education Studies, University of Cape Coast, in partial fulfilment of the requirements for the award of Master of Philosophy degree in Clinical Health Psychology.

NOVEMBER 2020

DECLARATION

Candidate's Declaration

I hereby declare that this thesis is the result of my own original research and that no part of it has been presented for another degree in this university elsewhere.

Candidate's Signature .....… Date .....

Name: ……...

Supervisors' Declaration

We hereby declare that the preparation and presentation of the thesis were supervised in accordance with the guidelines on supervision of thesis laid down by the University of Cape Coast.

Principal Supervisor's Signature ..... Date .....

Name: ……

Co-Supervisor's Signature: ..... Date: .....

Name: ……

ABSTRACT

The purpose of this study was to examine the influence of religious coping styles on depression and anxiety levels in persons living with Hepatitis B Virus in the Kumasi Metropolis. One hundred and forty-three Hepatitis B patients were conveniently sampled for the study. Brief RCOPE was used to measure the level of positive and negative religious coping. The Beck Depression Inventory-II (BDI-II) and Beck Anxiety Inventory (BAI) were used respectively to measure the depression and anxiety levels of respondents. Majority of the respondents 80 (55.6%) were females, 45 (31.3%) fellowshipped with Orthodox churches, 47 (32.6%) were Pentecostals, 44 (30.6%) were Muslims, while 8 (5.6%) were Traditionalists. In terms of religious coping, majority of the respondents used positive religious coping. Negative religious coping was positively associated to anxiety and depression, respectively ($b = .43$, $p = .001$, $b = .53$, $p < .001$), but positive religious coping was not linked to anxiety and depression ($b = -.30$, $p = .046$, $b = -.10$ $p = .500$). The findings revealed a statistically significant difference in the religious coping styles with respect to their religious background. Conversely there was no statistically significant difference in religious coping practice with respect to gender. Finally, gender moderated only the relationship between positive religious coping and depression while religious background only moderated the relationship between positive religious coping and anxiety. It is therefore recommended that assessment of religious coping should be integrated into Hepatitis B Virus health care.

KEY WORDS

Kumasi

Hepatitis B patients

Hepatitis B Virus

Psychological Health

Religious Coping

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DEDICATION

To my Family.

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LIST OF ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
anti-HBc	Hepatitis B core Antibody
anti-HBe	Hepatitis B e Antibody
AuAg	Australia Antigen
BAI	Beck Anxiety Inventory
BDI	Beck Depression Inventory -II
BMMRS	The Brief Multidimensional Measure of Religiousness/Spirituality
Brief RCOPE	Brief Religious Coping Scale
BSI	The Brief Symptom Inventory
CDC	Centre for Diseases Control
CES-D	Centre for Epidemiologic Studies Depression Scale
DASS 21	Depression Anxiety, Stress Scale
DSM-IV	Diagnostic and Statistical Manual of Mental Disorders
GBD	Global Burden of Diseases
GMH	General Mental Health scales
HBcAb	Hepatitis B core Antibody
HBeAg	Hepatitis B e Antigen
HBM	Health Belief Model
HBsAg	Hepatitis B surface Antigen
HBV	Hepatitis B Virus
HBV DNA	Hepatitis B virus Deoxyribonucleic acid
HIV	Human Immunodeficiency Virus
IgM	Immunoglobulin M

INSPIRIT	Index of Core Spiritual Experience
IRB	Institutional Review Board
KATH	Komfo Anokye Teaching Hospital
RCOPE	Religious Coping Questionnaire
WHO	World Health Organization

CHAPTER ONE

INTRODUCTION

Background to the Study

The World Health Organization WHO (2017) estimated that 257 million people are living with Hepatitis B virus (HBV) infection. Hepatitis B is medically known as the inflammation of the liver. Globally, the Hepatitis B virus is the tenth leading cause of death Alavian (2010) and about 50% of deaths due to liver cancer were attributed to the infection (Trepo, Chan & Lok, 2014). HBV infection can be acute or chronic for some people. Individuals with acute Hepatitis B virus mostly do not experience any symptoms during the acute infection phase, but some individuals experience symptoms such as yellowing of the skin and eyes, dark urine, extreme fatigue, nausea, vomiting and abdominal pain.

People suffering from acute Hepatitis B, have their immune system usually suppressing the virus, full recovery may occur within a few months. A small number of people affected with acute Hepatitis B develop acute liver failure which can lead to death. Chronic Hepatitis B occurs when one's immune system is not able to get rid of the viruses. Chronic Hepatitis B is a serious disease which can lead to fibrosis, cirrhosis, liver cancer, and finally to death. Chronic HBV increases individuals' risk of progressive liver disease and hepatocellular carcinoma. It is estimated that 10 to 33 % of persons that develop a persistent infection of HBV end up with chronic Hepatitis of which

20 to 50 % may develop liver cirrhosis (Blankson, Wiredu, Adjei & Tettey, 2005).

Sub-Saharan Africa has one of the highest HBV related liver cancer rates in the world. Hepatitis B is transmitted through two forms which are horizontal and vertical. The horizontal transmission occurs through exposure to infected blood transfusion, vaginal and seminal fluids. The horizontal again occurs through the reuse of needles and syringes either in health care settings or among drug users who use these tools. The viruses again can be transmitted during medical, surgical and dental procedures and through tattooing. The vertical transmission occurs when it moves from the mother to the child during pregnancy (Valizadeh, Zamanzadeh, Negarandeh, Zamani & Hamidia, 2016, WHO, 2017).

In Africa, Hepatitis B virus-related cancer is common among males and it is the third most common cancer in females in Africa (Parkin et al., 2008). Hepatitis related hepatocellular carcinoma affects younger individuals in Africa, averagely 33 years, while in the more developed regions in western Europe, it affects the adult population which is averagely 60 years. This postulates that Hepatitis B related hepatocellular carcinoma affects patients in their most productive and reproductive years (Howel, Ladep, Lemoine, Thurs & Taylor-Robinson, 2014). Hepatitis B infection poses a threat and danger to health, developmental and economic parameters on the African continent.

In Ghana, the Hepatitis B virus is a public health concern and a disease that needs greater attention (Owusu-Ansah, 2014). Consequently, Ghana has been mentioned to be part of the areas of the world where the prevalence of chronic HBV infection is high, that is greater than or equal to 8 percent (≥8%)

(Howell, Ladep, Lemoine, Thursz, & Taylor-Robinson, 2014). The national prevalence rate of HBV as determined by Hepatitis B surface antigen (HBsAg) seropositivity was 12.3% (Ofori-Asenso & Agyeman, 2016). The researchers revealed that the HBV prevalence among voluntary blood donors, replacement blood donors and pregnant women were 10.8%, 12.7%, 13.1%, respectively. The Regional prevalence rate for Ashanti, Greater Accra, Eastern, Northern, Central and Brong/Ahafo Regions were 13.1%, 10.6%, 13.6%, 13.1%, 11.5% and 13.7%, respectively. There were no aggregate data for Volta, Western, Upper East and Upper West regions. Higher prevalence of HBV infection was attained for rural (13.3%) compared to urban settings (12.2%). Across the country, the highest HBV infection prevalence rates were recorded in persons within the age group 16–39 years.

Being infected with chronic HBV comes with a lot of several negative impacts on the psychological, emotional and social aspects of the patients' life apart from the known physical effects (Mohammadi, Hassanpour -Dehkordi, & Nikbakhat-Nasrabadial, 2013). Psychological problems such as anxiety and depression are prevalent among patients with chronic HBV infection such that the psychological distress is predominant in their life as compared to psychological distress among healthy individuals (Yu-mei, 2009). Anxiety and depression could develop as a drug side effect in patients using interferon and antiviral therapy (lamivudine, entecavir) for HBV treatment. Depression and anxiety in person living with HBV are mainly also caused by impaired health related quality of life especially social activities and fear of the disease complications (Alian, Masoudzadah, Khoddad, Dadashian, & Mohammadpour, 2013). Chronic stress play role in depression development in hepatitis patients

(Hepatitis B Foundation International, 2006). Studies have recommended the need to consider the psychological health of patients as these findings indicate that patients living with hepatitis B experience various psychological reactions that need to be controlled and managed by themselves or health care providers (Valizadeh et al., 2016).

There is no specific treatment for Hepatitis B virus, chronic Hepatitis is mostly treated with medicines, such as oral antiviral agents. The medicine can reduce the progression of liver cancer and improve long term survival (WHO, 2017). According to the Ghana Statistical Service (2014), Hepatitis B vaccine was added to the Expanded Programme on Immunization in January 2002. The vaccine is administered to children at 6, 10 and 14 weeks after birth. In most health care centres in Ghana, vaccination and testing are done for a fee.

In addition to this effort, patients have managed the situation using religious coping. Religious coping has been found to be used by patients living with Hepatitis B as reported by Ezbarami, Hassani, Tafreshi and Majd (2017) that patients were found asking their transcendent the reasons why they have become victims of the diseases, and some was also found reporting that the disease was a punishment from their transcendent for their wrongdoings.

In Ghana, it was also reported by Adjei, Naab and Donkor (2017) that Hepatitis B patients in the Accra Metropolis were found using different coping skills including religiosity. They did not explain as to whether they used positive or negative coping styles. Another study also conducted at the Tamale Teaching Hospital by Diema, Kombat, Elisha, Najimba and Mogre (2016) on coping mechanisms used by patients diagnosed with Hepatitis B found that the patients employed social support and dietary patterns changes as a method of

coping with the virus but also used modern orthodox therapy with traditional or religious treatment options. From the foregoing, there is little knowledge of how the usage of positive and negative religious coping impact the health of HBV patients in Ghanaian settings. Therefore, it is important to look at the various religious coping styles among HB patients since in Ghana most people hold a strong religious belief. Religion is known to be one of the ways patients use in coping with their diseases. According to Pobee (1992), Ghana is part of the countries rated as religious in the world. Religiosity has been established to play an integral role in coping with chronic diseases (Gordon et al., 2002, Bussing & Koenig, 2010).

Coping is a continuous improvement and life-preserving method for adjusting to ceaseless changes. Coping serves two functions, that is problem-focused coping where the user deals with the problem causing the distress in their life, the other one is regulating the stressful emotion that is emotion-focused coping (Baqutayan, 2015). Studies have proven that most individuals turn to higher power or religion as a way of coping with stress when they are faced with challenges (Thune-Boyle, Keshtgar & Newman, 2006; Oti-Boadi & Asante, 2017).

Religious coping is defined as the effort made by individuals to deal with life stressors in ways that are associated with the divine or imbued with Divine-like qualities (Pargament, 1997). Religious coping is seen as a way to deal with negative emotion and it is pointed out by studies to have a cognitive and behavioural component (Thune-Boyle et al., 2006). Religious coping is grouped into two namely: the positive and negative religious coping strategies (Pargament, 1997). The positive religious coping styles are methods that are

beneficial in the life of people. It involves seeking of God's love, protection, stronger association with a transcendent power/force, seeking help in religious literature, seeking forgiveness, praying for others, or reappraisal of the stressor as a benefit. Negative religious coping is also known as ''spiritual struggle'' and includes tension, conflict, struggle in believing existence of God, doubts, redefining the stressor as God's punishment, or the act of evil spirit (Papnzini, & Bandeira, 2007). The positive and negative religious coping are independent of each other (Pargament, Smith, Koenig & Perez, 1998). Positive outcomes have been reported to be associated with religious coping by many studies (Pargament et al., 1990). For example, it was indicated that usage of positive religious coping methods accounted for less depression among some patients living with breast cancer (Zwingman, Wirtz, Muller, Kober & Murken, 2006). The usage of religious coping again resulted to less depression among diabetic patients (Kilbourne, Cummings & Levine, 2009). Lastly, the usage of the religious coping also contributed to greater physical wellbeing among cancer patients that used higher level of positive religious coping (Sherman, Plante, Simonton, Latif & Anaisie, 2009). Studies also conducted on Hepatitis B in Ghana by Adjei et al. (2017) on the experience of persons living with Hepatitis B, found out that participants employed different coping strategies including religiosity.

Globally, Hepatitis B viral infection continues to be a major challenge and considered as significant public health concern that needs greater attention (Owusu-Ansah, 2014). Despite the introduction of the Hepatitis B vaccine since 1982 and the use of antiviral drugs, it remains a challenge (Locarnini, Hatzakis, Chen & Lok, 2015).

Statement of the Problem

Autopsy in Ghana has indicated that liver cancer and cirrhosis of the liver which are mostly caused by Hepatitis B virus are part of the leading causes of death over the past four decades (Edington, 1957; Wiredu & Armah, 2006). Blankson et.al. (2005) has also established that there is a relationship between cirrhosis of the liver and Hepatitis B virus infection. Treatment of Hepatitis B infection is geared towards the use of antiviral medications for already infected persons (WHO, 2017). Little focus is given to how patients are using religious coping styles/methods to deal with their sickness and how those styles are impacting their psychological health.

Religion is noted to play a significant role in the life of Africans and Ghanaians particularly when dealing with stressful situations (Gyekye, 2003). Therefore, most individuals living with HBV may resort to different religious coping methods in dealing with their condition to improve their psychological health. Hepatitis B virus studies in Ghana over the past year focused on the prevalence of the disease, experiences of patients with the diseases, knowledge, attitude and practice of the diseases with little attention on the use of religious coping styles among patients. For example, a study by Ofori-Asenso and Agyeman in (2016) focused on the prevalence of HBV in Ghana. Another study by Adjei et al. (2017) explored the experiences of persons with Hepatitis B in the Accra Metropolis. Another study also conducted by Diema, Kombat, Laar, Najimba and Mogre (2016) at the Tamale Teaching Hospital on coping mechanisms used by patients diagnosed with HBV. However, these studies did not touch on religious coping styles used by patients with Hepatitis B and how it impacted on their psychological health as this current study seeks to achieve.

There is a gap in literature in this respect which needs to be filled. It was against this background this study sought to examine the influence of religious coping styles on the psychological health of patients living with Hepatitis B.

Purpose of the Study

The main purpose of this study was to determine the influence of religious coping styles on the psychological health of Hepatitis B patients**.** Specifically, the study sought to:

1. Determine the types of religious coping styles used by Hepatitis B patients in the Kumasi Metropolis.
2. Determine the impact of religious coping styles on the psychological health of Hepatitis B patients in Kumasi Metropolis.
3. Ascertain if there is any statistically significant difference in Hepatitis B patient religious coping styles with respect to their religious background.
4. Ascertain if there is any statistically significant difference in Hepatitis B patient religious coping styles with respect to their gender.
5. Determine if religious background will moderate the association between religious coping styles and psychological health
6. Determine if gender will moderate the association between religious coping styles and psychological health.

Research Questions

The study was guided by the following research questions.

1. What are the types of religious coping styles patients with Hepatitis B virus accessing medical care in Kumasi Metropolis use?
2. What impact does the use of religious coping styles have on the psychological health of Hepatitis B patients in Kumasi Metropolis?

Hypotheses

The following hypotheses were tested.

H_0 1: There is no statistically significant difference in the religious coping styles used by Hepatitis B patient with respect to their religious background.

H_1 1: There is a statistically significant difference in religious coping styles used by Hepatitis B patients with respect to their religious background.

H_0 2: There is no statistically significant difference in religious coping styles used by Hepatitis B patients with respect to gender.

H_1 2: There is a statistically significant difference in religious coping styles used by Hepatitis B patients with respect to gender.

H_0 3: Religious background will not moderate the relationship between religious coping styles and psychological health.

H_1 3: Religious background will moderate the relationship between religious coping styles and psychological health.

H_0 4: Gender will not moderate the relationship between religious coping styles and psychological health

H_1 4: Gender will moderate the relationship between religious coping styles and psychological health.

Significance of the Study

The outcome of this study will inform the clinical health psychologists and other health professionals about the influence of religious coping styles on the psychological health of HBV patients in Ghana. The study will add up to literature on religious coping methods among Hepatitis B patients. Findings of the extent to which religious coping impact Hepatitis B patients could help all

stakeholders to put up better strategic planning activities that will meet the needs of Hepatitis B patients.

Delimitation

The study covers only Hepatitis B patients accessing medical care at Komfo Anokye Teaching Hospital (KATH) and South Suntreso Government Hospital in Kumasi Metropolis. KATH and Suntreso Hospital was selected because it has a special clinic designed to attend to the needs of Hepatitis B patients on specific days. Patients from eighteen years and above and willing to participate in the study with no sign of any clinical mental disorder were only be used. The study again was delimited to the Hepatitis B virus alone even though there are several types of Hepatitis such as the A, C, D and E. Coping comes in several forms such as relationship-focused coping, social coping, future-oriented proactive coping and avoidant coping. However, the study looked at the religious coping styles (positive and negative religious coping styles) and not the ones stated above. Hepatitis B patients at times experience psychological conditions such as anxiety, stress, depression, grief stigmatization, shame, blame, denial, but this study was delimited to anxiety and depression.

Limitations

The use of only quantitative method approach in data collection and not adopting a mixed-method approach limited the study's ability in covering a full self-representation of respondent experience, practice and knowledge concerning religious coping, and psychological health. The use of instruments such as Brief RCOPE, which was not developed in the Ghanaian context limited the study's ability to examine fully all the religious coping practice by

patients living with Hepatitis B virus. Lastly, the use of convenient sampling method limited the generalizability of the study to a large population.

Definition of Terms

The following terms have been defined in the context of how they have been used in the study

Psychological Health: This is conceptualized as the generic term for anxiety and depression.

Depression: Is a common and serious medical illness that negatively affects how one feels, thinks and acts.

Anxiety: Is an emotion characterized by feelings of tension, worried thoughts and physical changes like increased blood pressure.

Religious coping: Is the effort made by individuals to deal with life stressors in ways that are associated with the divine.

Negative Religious Coping: They involve doubt, struggling to believe in the existence of God, and tension.

Positive Religious Coping: They are coping methods that are beneficial in the life of people.

Organization of the Study

The study emanates in five chapters. Chapter one the introduction comprises the background to the study, statement of the problem, purpose of the study, research questions/hypothess, significance of the study, delimitation and limitation of the study and definitional issues. Review of related literature which is the Chapter Two captures a summary of the conceptual framework, theoretical review and empirical studies in line with Hepatitis B. Chapter Three, research methods describe the way by which the study is conducted. It

includes the research design, population, the sample and sampling procedure, instruments, pilot testing, ethical issues, data collection procedure and analysis of the collected data. Results and discussions which is Chapter Four gives a vivid evaluation of the results from the analysed data based on the research questions and hypotheses the study intends to answer. The last, which is Chapter Five discusses into detail the overview of the study, conclusion and suggestions which are made for future research.

CHAPTER TWO

LITERATURE REVIEW

Introduction

In this chapter, the researcher discusses relevant theories that seek to explain the influence of religious coping style on the psychological health of Hepatitis B patients. This chapter also contains a review of related studies and conceptual framework.

Theoretical Review

Religious Coping Theory (Pargament, 1997)

Pargament Religious Coping Theory is an approach to understanding why and how people actively seek out a specific religious coping style to deal with their challenges. The theory proposed that religious coping plays multiple roles which include the search for meaning, intimacy with others, identity, control, anxiety reduction, transformation. According to Pargament and Abu-Raiya (2007), religious coping styles are 'ways of understanding and dealing with negative life events in a way that are related to the sacred'. Pargament incorporated that religious coping is a process leading to helpful or harmful outcomes.

The theory indicated that the involvement of religion in coping is because religion is both ''a relatively available part of the orienting system'' and ''a relatively compelling way of coping''. According to Pargament (2011) religion is not simply acting as a defence mechanism, but religion is actively and dynamically involved in every stage of the coping process, helping people

find, maintain and transform significance, as a dynamic process. Religious coping changes with temporal, contextual and circumstantial situations and it involves behaviours, emotions, relationship and cognitions. The theory may add specific qualities to the coping process by its special concern about sacred matters.

According to this theory, people rely on religious beliefs, practices and rituals to understand and deal with life challenge. This in one way or the other impact psychological health of patients in different means. Religious beliefs such as 'I tried to put my plans into action together with God'', 'Sought God's love and care'' "God is directing one's path" and that "He gives His children strength to overcome challenges" as well as "making all things work together for their good" are also indicated to strengthen an individual's sense of control over life events and situations (Smith, 2003).

Religion provides a feeling of hope about the future and the world, which involves a supernatural force such as God, Allah, Krishna etc., they are considered as helpful and loving humans and manages all things which also in turn increases a person's sense of control and gives answers to existential questions (Koenig, 2012, Smith, 2003). Hence, Life challenges and negative events become less painful for religious persons, and this may lead into positive psychological health outcomes. Joon-Jang and Johnson (2004) in their study found that African Americans who were highly religious had more sense of control and social support and this led to reduction in psychological distress compared to their less religious and non-religious counterparts. According to Pargament, religious coping can be positive or negative. The question then is how do Hepatitis B patients in Kumasi metropolis draw on their religious

beliefs and practices to deal with their current situation; are they more likely to use positive styles or negative styles? Does this have beneficial or harmful effects on their psychological health?

Health Belief Model

The health belief model is one of the most extensively used theory in promoting health and used in giving health education (Glanz, Rimer & Lewis, 2002). The model was developed in the 1950s. The theory explains why medical screening programs conducted especially tuberculosis and some other immunization programs was not able to achieve it purpose successfully which was to help in detection and prevention of the disease (Hochbaum, 1958; Jantz & Becker, 1984). Public health service conducted a screening and offered free chest X-rays screening for tuberculosis (Gochman, 1997). The service was conducted for free yet the programme was not very successful. The social psychologist who propounded the model found out what influenced the people from not partaking in the program. They theorized that people belief whether they are or not susceptible to disease and their perception of the benefits of trying to avoid it influence their readiness to act. The model has in it the beliefs component, an attitude component and a behaviour component. The belief component relates to what the individual assesses to be the true situation, the attitude aspect relates to how the individuals feel about the situation. These components determine how the individual behaves in a specific situation. The model has been expanded to include new constructs that are cues to action, motivating factors and self-efficacy. Personal beliefs/perceptions about disease and strategies available to decrease its happenings are the main concepts of the health belief model (Hochbaum, 1958).

Six different perceptions that serve the main constructs of the model are perceived seriousness/severity, perceived susceptibility, perceived benefits and perceived barriers, cues to action, modifying behaviours and self-efficacy. Each of these perceptions can be used to explain health behaviour individually or in combination.

Perceived seriousness

This construct speaks to a person's beliefs concerning the degree of seriousness or severity of a disease. The perception of the individual about the seriousness/severity of the disease normally depends on medical information or knowledge, it may also result from the beliefs a person has about the stress/ challenges a disease would create or the effects it would have on his or her life in general (McCormick-Brown, 1999). This indicates that patient's perception of the severity/seriousness of the Hepatitis B Virus may act as an encouraging factor for them to take action to prevent or fight the disease.

Perceived susceptibility

Feeling susceptible to a disease is a motivating factor for one to take preventive action. This construct is one of the most powerful perceptions that encourages persons to adopt healthier behaviours. According to the construct the bigger the perceived risk, the greater the likelihood of putting up behaviours to decrease the risk. This construct is what encourages men who have sex with men to be vaccinated against Hepatitis B (De-wit, Vet, Schutten, & van Steenbergen, 2005) and to use condoms to reduce susceptibility to HIV/ Hepatitis B infection (Belcher, Sternberg, Wolotski, Halkitis, & Hoff, 2005).

The construct prompts individuals to be vaccinated for influenza (Chen, Fox, Cantrell, Stockdale, & Kagawa-Singer, 2007), to prevent skin cancer by

motivating people to use sunscreen, and to floss their teeth to prevent gum disease and tooth loss. It is reasonable that when people perceive they are at risk for a disease, they will probably do something to avoid it from occurring. Unfortunately, the reverse also occurs. People engage in unhealthy behaviours when they believe they are not at risk or have a low risk of susceptibility. This has been found in older adults and HIV prevention behaviours. This is because they do not perceive themselves to be at risk for HIV infection, therefore most of them do not practice safer sex (Rose, 1995; Maes & Louis, 2003). Yep (1993) also reported that Asian American college students view HIV/AIDS as non-Asian problem, this made their perception of susceptibility to HIV/AIDS infection low and not practising safer sex. Person living with HBV infection will be encouraged to take positive actions when they feel susceptible to a disease (liver failure, cirrhosis, and depression). When perceived susceptibility and perceived seriousness/severity are combined it result in perceived threats. Perception of increased susceptibility is associated to healthier behaviours and reduces susceptibility to unhealthy behaviours.

Perceived benefits

They are individual belief of the value or usefulness of new behaviour in decreasing the risk of developing a disease. Individuals will involve in healthier behaviours when they believe that the new behaviour will reduce their possibility of developing a disease. Would people use condoms if they didn't believe it was better for their protection? Would people quit smoking if they didn't believe it was better for a healthy liver? Would people vaccinate themselves against Hepatitis B if they didn't believe it will work? Probably not.

This construct, therefore, plays an important role in the adoption of secondary prevention behaviours, such as screenings. A good example of this is screening for colon cancer, breast cancer, HBV. Individual ability to change a risky behaviour is determined by the perception of the benefits resulting from making the changes despite discovering susceptibility to a health threat. Based on this constructs HBV patients will adopt good behaviour and belief systems that will positively impact their health and not worsen it off, knowing the benefits of these behaviours and beliefs.

Perceived barriers

The fourth construct of health belief model addresses the issue of perceived barriers to change. Since change is not something that comes easily to most individuals, this construct is a person's judgement of the impediments in his or her way in adopting a new behaviour. The most important of all the constructs in determine behaviour change is the perceived barriers (Jantz & Becker, 1984). For a new behaviour to be adopted, a person needs to believe that the benefits of the new behaviour outweigh the dangers of continuing the old behaviour (Centers for Disease Control and Prevention (CDC), 2004). This enables barriers to be overcome and the new behaviour to be adopted. Perceived barriers can include physical deterrents such as distance, money, convenience and physical accessibility. Embarrassment, comprehension, lack of belief in the validity of a threat are all key factors serving as psychological barriers (Rosenstock, Strecher, & Becker, 1988).

Modifying variables

Factors such as culture, education level, past experiences, skills, and motivation modified the model's four major constructs of perception. They are

specific features that influence personal perceptions. For example, if someone is diagnosed with acute Hepatitis B and successfully gets treated, he or she may have a heightened perception of susceptibility because of this experience. They become more conscious of things that can expose them to the disease. Conversely, this experience could also decrease the individual's perception of seriousness because the body's immune system effortlessly treated and cured the disease.

Cues to action

This construct is suggested to influence behaviour. Cues to action are events, people, things that move people to change their behaviour. Examples include illness of a relative, media reports, mass media campaigns, advice from others, reminder postcards from a health care provider, or health warning labels on a product (Ali, 2002; Graham, 2002). For instance, knowing a fellow family member with Hepatitis B is an important cue to action for other family members to check for their status too. Hearing television or radio news stories about foodborne illness and reading the safe handling instructions on packages of raw meat and poultry are cues to action associated with safer food-handling behaviours (Hanson & Benedict, 2002).

Self-efficacy

Self-efficacy as a construct was added to the original model in 1988, according to Rosenstock, Stretchers, and Becker, individuals do not perform new things unless they feel they can do it. If someone perceived that a new behaviour is useful but does not think he or she can do it, chances are that it will not be tried. For instance, women who do not engage in the recommended

levels of weight-bearing exercise tend to have low exercise self-efficacy (Wallace, 2002) as a result, these women do not exercise.

In summary, it is believed that individuals will act to prevent, to screen for or to control ill-health conditions if they perceive themselves susceptible to the condition, if they believe it to have serious effects, if they believe that a series of actions available to them would be beneficial in preventing either their susceptibility to, or severity of the condition and if they believe that the expected barriers of actions are outweighed by its benefits.

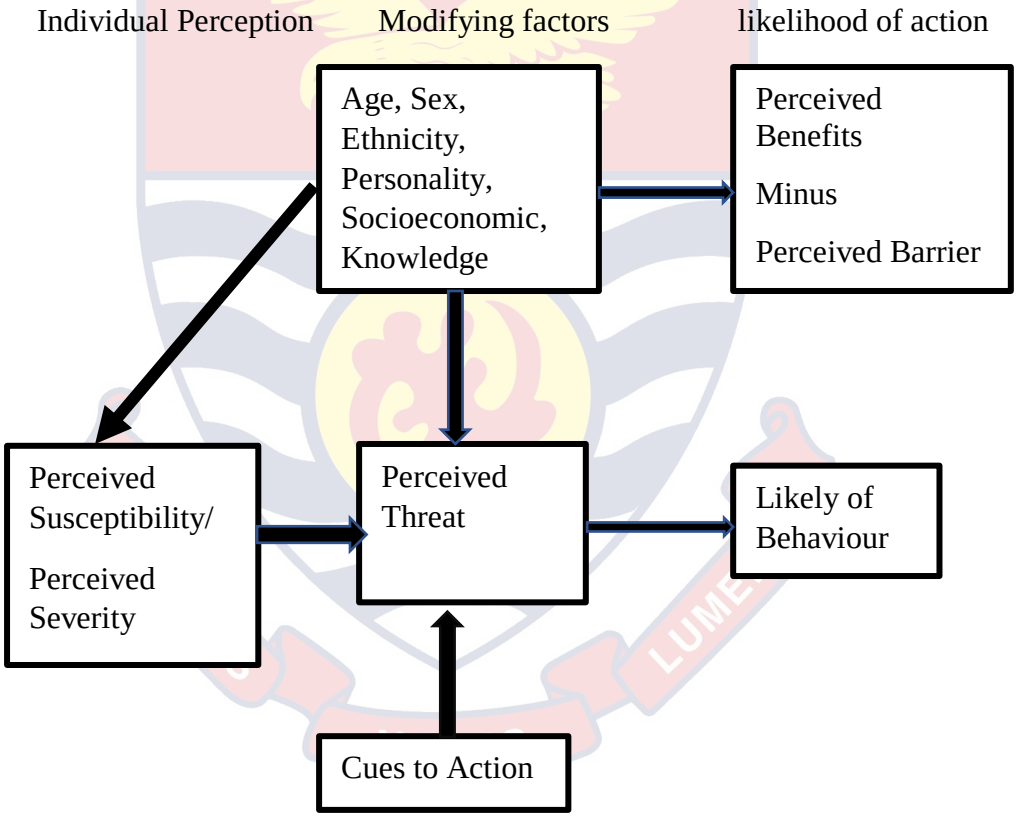

Figure 1- The health belief model (Stretcher & Rosentock,1997)

Conceptual Review

Historical Perspective of Hepatitis B Virus Infection

Hepatitis B is an inflammatory disease that affects the liver, the disease was discovered in 1963 by Dr Baruch Blumberg and co-worker Harvey Alter.

They found a new antigen in several samples of huge serum collection, quite often in Australia Aborigines, because of that they named it Australia Antigen (AuAg) (Blumberg, 2002). The virus was fully described in the 1970s (Gerlich, 2013), in the 1980s came the sequencing of the Hepatitis B viral genome and the first testing of the vaccine. Currently, the continuous discoveries of HBV disease globally have increased our understanding and knowledge of the complexity of this unusual virus. Cirrhosis, hepatic failure and hepatocellular carcinoma are some of the most common negative outcomes of Hepatitis B viral diseases globally**.** HBV infection is a significant health problem and an enormous burden on society. The percentage of people infected varies greatly globally. Health professionals that deal with blood and body fluid must get vaccinated and protect themselves against dangers that they are expose to (Field, 2009; Fry, 2007). Globally chronic HBV continues to account for high morbidity and mortality (Global Burden of Diseases, 2013).

Global Epidemiology of Hepatitis B Virus

Hepatitis B Virus continues to remain a challenge globally. The virus caused 500,000 to 700,000 deaths which is more than the death caused by HIV infection (Global Burden of Disease, 2015). The number of deaths caused by the Hepatitis B virus is rising annually while the number of deaths caused by HIV/AID and tuberculosis decreases (WHO, 2017). An estimated 257 million people worldwide have been infected, the infection is 50 to 100 times highly infectious than HIV (Hepatitis Foundation International, 2006).

The prevalence of the chronic Hepatitis B Virus has been divided into three categories which are the high prevalence (>8% HBsAg) the intermediate (2%–7%) and the low prevalence (2%) (Previsani & Lavanchy, 2002). It also

helps in determining the relative population burden of the consequences of chronic HBV.

Asia Pacific countries and countries within the sub-Saharan Africa regions are found in the high prevalence rate category. In these areas, many Hepatitis B patients are infected during early childhood and at birth (Lavanchy, 2004). Studies have also proven that vertical transmission is high in the Asia Pacific area as compared to Africa. The disease affects most of the women in these areas at their childbearing age (Kramvis & Clements, 2010). North Africa and the Middle East, Eastern and Southern Europe, and some areas of Latin America, and South Asia are categorized to be within the intermediate prevalence rate. In this region, the major route of transmission is horizontal or perinatal (Lavanchy, 2004). Countries such as Australia, Asia, Northern and Western Europe, Japan, North America, and some countries in South America, have low vertical and the horizontal transmission as compared to countries within the higher and the intermediate category. Adolescents and adults are mostly affected in these countries. The major route of transmission here are sexual contact, exposure to infected blood and injecting drugs (MacLachlan & Cowie, 2015).

MacLachlan and Cowie (2015) reported that mortality incidence due to of Hepatitis B was 786,000. Out of this figure they estimated that 132,200 were caused by acute Hepatitis B, 341,400 were also estimated to be caused by liver cancer and 312400 were caused by cirrhosis. According to Kourtis, Bulterys, Hu, and Jamieson (2012), HBV is found to be co-infected in HIV patients and Hepatitis C and D patients because of the similar shared mode of transmission. They reported that between 5 to 10 % of the total population of

HIV patients are living with HBV disease. They again indicated that countries that are classified under the low prevalence rate of Hepatitis B have a similar mode of transmission for HIV and HBV in adult and it is primarily through sexual contact and injecting drugs. Even though the overall prevalence rate co-infection is low but is found in some groups such as men who have sex with men and individuals that use drugs**.** Wu and Liu (2012) also reported in their study that between 7 to 20 million individuals living with Hepatitis C are also thought to be co-infected with Hepatitis B virus.

Hepatitis B Epidemiology in Africa

Hepatitis B virus is high in sub-Saharan Africa, in this region, the transmission of the virus mostly occurs in infants and children. The main routes of the transmission are from mothers to infants, children or infants meeting contaminated blood (Zhang, Zou, & Giulivi, 2001). Hepatitis B disease in sub-Saharan Africa is endemic and its associated disease burden is high. In sub-Saharan Africa, the lifetime risk of Hepatitis B virus is over 60% and more than 8% of the affected population remains chronic and this makes them at risk to liver disease and hepatocellular carcinoma (Howell et al., 2014). Prevalence of Hepatitis B surface antigen (HBsAg) in the general population varies geographically, with the highest rates (8%) measured in West Africa (Ott, Stevens, Groeger & Wiersma, 2012).

In sub-Saharan Africa the Hepatitis B virus infection is estimated to account for 87,890 deaths annually in sub-Saharan, (WHO, 2017). Several reports have shown high occurrences of hepatocellular carcinoma in sub-Saharan Africa. According to the reports, 80% of hepatocellular carcinoma cases are due to Hepatitis B virus infection (Lemoine &Thursz, 2017).

Hepatitis B Epidemiology in Ghana

In Ghana, Hepatitis B is a major concern which needs attention. Ghana is found to be part of the sub-Saharan African countries where the prevalence rate of chronic Hepatitis B is high. Ofori Asenso and Akosua Agyeman (2016) reported that the prevalence rate of HBV is 12.3%, the prevalence rate of the virus among pregnant women is 13.1% which indicates how high the virus is among pregnant women. This justifies the establishment of the national HBV screening program for all pregnant women attending antenatal clinics in Ghana. There are several factors that account for the higher prevalence in the country; scarce information and understanding of the transmission dynamics of the virus is one of the explanations. A study conducted by Mutocheluh and Kwarteng (2015) indicated that in the assessment of 200 barbers in the Kumasi metropolis only 7% of the barbers knew the route of the transmission of the HBV.

Akumiah and Sarfo (2015), reported similar incidence by indicating that barbers in the country only pay attention to the decoration of their shops and not taking into consideration the risks factors that expose customers to the disease. According to Owusu-Ansah (2014), Hepatitis B virus is normally viewed as a sexually transmitted disease in most communities in the country and among health workers, this has then contributed to stigmatization which is preventing infected people from coming to receive treatment in a proper care setting.

A study conducted at the Tamale Teaching Hospital in Ghana on the prevalence of HBV infection among blood donors indicated that voluntary blood donors within the ages of 20-29 years were at higher risks of developing

the infection. Individuals at this age were found to be twice likely to be HBV positive than individuals within the age group of 40-60 years and also found to be 4 more times likely to be positive as compared to the age group of 50-69 years (Dongdem et al., 2012). This study buttresses the findings of Howell et al. (2014) that Hepatitis related hepatocellular carcinoma affects the younger individuals in Africa, averagely 33 years as compared to the western world. Over the years studies in Hepatitis B have shown some patterns that can increase the risk of individuals being affected by the virus in the line of gender. Findings from a study conducted in the Agogo Presbyterian hospital in Asante Akim Ghana revealed that the prevalence rate among 2773 blood donors of the HBV infection among females was (21.4%) and was lower in males (13.2%) in the district (Nkrumah, Owusu, Frempong & Averu, 2011).

Clinical Signs and Symptoms of Hepatitis B

Most individuals do not experience any clinical symptoms and signs during the acute phase however some people will experience symptoms which include extreme fatigue, anorexia, malaise, nausea, vomiting, abdominal pain, jaundice, dark urine, and clay-coloured/light stools. Occasionally, extrahepatic manifestations occur and include skin rashes, arthralgia, and arthritis (Abara, Qaseem, Schillie, McMahon & Harris, 2017).

Mode of Transmission of Hepatitis B Virus

Hepatitis B virus has two modes of transmission which are horizontal and vertical. The horizontal transmission of the virus occurs through exposure to infected blood or organ transplant, infected vaginal and seminal secretion, sexual contact with an infected individual, or the use of a contaminated blade, razor, injecting drugs (Lok & McMahon, 2009). The vertical or perinatal

transmission occurs during childbirth, this is the mother to child transmission. Hepatitis B has been found in saliva, tears, breast milk, sweat, and urine, but there is little proof that people have been infected with HBV through exposure to these fluids where no blood is present, and breastfeeding has shown no evidence in increasing risk of infection among children (Zheng, et.al., 2011).

Diagnosis of Hepatitis B Virus

To determine the presence of the virus the following tests are normally conducted to confirm the presence of the infection in an individual: liver function test, and blood clotting test (Thapa & Walia, 2007). Serologic testing can also be used in checking the presence of the virus in an individual, they include testing for Hepatitis B surface antigen (HBsAg), Hepatitis B e antigen (HBeAg), Hepatitis B e antibody (anti-HBe) and Hepatitis B core antibody (anti-HBc) immunoglobulin M (IgM) and among others. HBsAg is the first marker/serological test during the diagnosis of HBV infection. The occurrence of HBsAg is a suggestion of ongoing HBV infection and signifies the potential to spread the infection. However, HBsAg is undetectable in early and later stages of HBV infection. IgM anti-HBc can be noticed at about 6 weeks after infection and continues for almost 6months. The presence of IgM anti-HBc distinguishes acute or recently acquired infection from chronic infection and is the only serological evidence of HBV infection in the window period (Abara et al., 2017). Chronic HBV infection is the occurrence of HBsAg in the blood for more than six months or the absence of HBcAb in the blood.

Treatment/Management of Hepatitis B

Chronic Hepatitis B can be managed by using the following drugs Adefovir, Tenofovir, Entecavir, and Lamivudine among others. Vaccination is

always encouraged in persons who test negative to the virus. Prophylaxis is given to pregnant women who tested positive for the virus in various health care facilities to avoid mother to child transmission of the virus (WHO, 2015). The main treatment goal is to prevent progression of the disease particularly to cirrhosis, liver failure and hepatocellular carcinoma.

Lamivudine: This drug was approved in 1998, the drug was quite potent and tolerated but did not turn out to be the solution for the treatment of Hepatitis B. The drug is a nucleoside analogue, it needs to be considered when planning HIV/AIDS therapy in HBV co-infected patients. The dosage should be taken depending on the patient kidney functioning status. It should be discontinued when patients are switched to entecavir to decrease risk of entecavir resistance (Lok & McMahon, 2007).

Tenofovir: This drug was approved in 2001 and it was accepted to be good for the treatment of Hepatitis B even though is originally designed as HIV drug, in 2008 it was only approved for HBV. Currently, it is the most widely used drug for the treatment of chronic HBV because it is well-tolerated, and resistance has never been observed (Petersen & Buti, 2012).

Entecavir: The drug was officially approved in 2006 and it was found to be effective than lamivudine. The drug is effective against HBV, the quantity of drug taken depends on the patient's renal functioning strength or weakness, the dosage ranges from 0.25mg daily to 0.5mg (Petersen & Buti, 2012)

Hepatitis B Vaccination

Hepatitis B virus has been a preventable disease for more than 20 years. It is currently the most widely used vaccine globally and is part of the routine vaccination schedule for many of the world's infants and children. It is the

world' first cancer prevention vaccine and the first vaccine to prevent sexually transmitted disease and was introduced in the early 1980's. It was endorsed by the World Health Organization that countries should introduce the vaccination into their immunization program in 1992. The highly endemic areas were expected to do this by the year 1995 and all other countries by the year 1997 (Komatsu, 2014, WHO, 2004). The vaccination is suggested for all individuals especially the unvaccinated infants and unvaccinated adults who all are at risk of the virus infection. The vaccine is usually done before the individual meets the Hepatitis B virus, the vaccination and immune globulin can also be given immediately an individual is exposed to the virus. The vaccine is typically given in three-dose series that is three separate months interval.

The vaccine is noted to give vaccinated individuals who are healthy a protective concentration of anti-HBs (≥10 mIU/ml) in 90-100% of the cases if they followed vaccination schedule properly (Shepard, Simard, Finelli, Fiore & Bell, 2006). Shepard and colleagues again, indicated that Hepatitis B vaccines and Hepatitis B immune globulin are given within 12–24 hours after birth. Three-dose vaccine series are added to complete the vaccination, and this has proven to be 89 to 98% efficient in reducing acute and chronic Hepatitis B infections in newly born babies to positive women.

The vaccine is known to protect individuals vaccinated for at least 10-15 years (Ni et al., 2007), pain at the injected place is most complain side effect of the vaccine. The perfect administration of the vaccine is noted to decrease the prevalence rate of acute Hepatitis B among young adults and adolescents. The vaccine again is reported by WHO (2015) to be safer and 95% efficient in protecting vaccinated infants, children and adults. It has effectively

reduced the infection and other Hepatitis-related diseases. In sub-Saharan Africa, the introduction of the vaccine has brought some positive reductions in the increase rate of the development of the infection. For example, in Senegal, the vaccinations brought a reduction in the infection rates among children from 18.7 to 2.2%, whereas in the Gambia, the introduction of the vaccination led to a reduction in infection rate from 10% to less than 1% (Vildosola, 2000; Alexander & Kowdley, 2006).

In Ghana, Hepatitis vaccination is given at birth. The country introduced the vaccination of babies as part of the Expanded Programme of Immunization in 2002 (Owusu-Ansah, 2014). The country is committed to the provision of the vaccine to all newborn babies but not all Ghanaian children obtain full vaccination against the infection. Inadequate understanding of the importance of the vaccine and access to health care are some challenges that have to hinder the vaccination of all newborn babies.

Screening HBV in Pregnant Women

Screening for Hepatitis B surface-antigen (HBsAg) is very important during pregnancy. It will help in identifying pregnant women that are infected so they can be treated as early as possible. This policy is recommended by the World Health Organization that in countries where HBsAg prevalence is 2% or higher (WHO, 2017). Most countries in sub-Saharan Africa see to it that pregnant women are always screened for HIV but in the case of Hepatitis B surface-antigen, screening is not routinely done. According to Keane, Funk, and Shimakawa (2016), in Sub-Saharan Africa, an estimated 1% of newborn babies annually are infected with Hepatitis B virus. Hence, it is encouraged that Hepatitis B screening should be done for pregnant women during the first

trimester of their pregnancy, pregnant women that are not vaccinated against the virus should be vaccinated to keep them safe and child also protected.

HBV positive pregnant women should be referred for additional testing, counselling and proper medical treatment. Pregnant women of childbearing age in the immune tolerant/immune control phase are not eligible for Hepatitis treatment. However, Mother to child transmission risk needs to be considered in pregnant women with high viral loads (HBV-DNA concentration >200000 IU/mL) irrespective of Hepatitis B viral protein (HBeAg) status (Han et al., 2011). A combined treatment for newborn babies with HBV hyperimmune globulin and Hepatitis B virus birth-dose vaccine within 24 hours of delivery prevents mother to child transmission of HBV in 80–95% of cases (Zou, Chen, Duan, Zhang, & Pan, 2012). The HBV hyperimmune globulin is costly and the drug is not easily accessible in most clinics in sub-Saharan Africa. Therefore, the introduction of prophylactic nucleoside analogue antiviral therapy in the third trimester of pregnancy should be considered to reduce the risk of mother to child transmission.

Knowledge on HBV

Hepatitis B virus is a public health concern noted to come with a lot of challenges in terms of treatment. It is reported to come along with social injustice and discrimination against HBV patient in most endemic areas of the world. They are the consequences of poor information, knowledge and myth surrounding the mode of transmission. China is one of the countries found in the areas where the infection is endemic, individuals diagnosed of being HBV positive in China are denied access to work in the food industry. They are also found of forcing individuals to go through a routine pre-employment HBV

testing, individuals that test positive are expelled out of school or work. (CDC, 2006).

Another study conducted in China among some selected number of Health professionals also indicated that the knowledge on the disease was deficient among one-third of the respondents. They did not know that it is common for chronic HBV infection to be asymptomatic or that it can lead to cancer of the liver, cirrhosis and death (Chao, Chang & So, 2010).

A study has also reported that the level of knowledge about the disease in Nigeria among pregnant women was low. Seventy-Six percent of women had inadequate knowledge of HBV infection (Adeyemi, Enabor, Ugwu, Bello, & Olayemi, 2013). Another study conducted in rural Cameroon on knowledge of Hepatitis B Virus, found out that 84% of interviewed, women had low knowledge of the infection (Frambo, Atashili & Ndumbe, 2014).

A study also conducted in the upper west region of Ghana on Hepatitis B virus also reported that there was an extremely low level of knowledge and a noticeable lay misconception about the diseases in the area. The study also found out that there was no access to the infection immunization, testing and treatment (Mkandawire, Richmond, Dixon, Luginaah & Tobias, 2013). Knowledge is mostly acquired through communication and its processes. It is the key to prevention and management of the Hepatitis B virus. Ghanaians' knowledge about the deadly disease is low. Some more research work across the country has given me the impression that most Ghanaians have little or no knowledge or understanding of the importance of their liver condition for good health. This lack of knowledge or awareness is also a contributory factor for the higher prevalence rate of the virus in the country. A study conducted in

the Kintampo municipality on the knowledge and awareness of HBV among pregnant women attending an antenatal clinic in two facilities reported that 41 percent of the 504 women who took part in the studies were aware of Hepatitis B viral infection. This indicates that they have knowledge about the diseases and 33.5% of the women were able to correctly mention the transmission routes of Hepatitis B. The radio was the most (42%) mentioned source of information on the infection and the least source of information were places of worship (2.7%). This suggests a low level of knowledge and awareness of Hepatitis B virus among pregnant women in the municipality as majority of the 504 women had poor knowledge and awareness (Abdulai, Baiden, Adjei & Owusu-Agyei, 2016).

A study conducted by Akumiah and Sarfo (2015) on the level of awareness on viral hepatitis among educated people also indicated that the knowledge of the respondents on viral Hepatitis was desirable. According to the researchers, most of the health professionals and health students showed a satisfactory level of knowledge on viral Hepatitis. However, for accountants, bankers and teacher training students' knowledge on Hepatitis is relatively poor. This indicates that knowledge of the Hepatitis B virus among some Ghanaians very are low even among the elites. World Health Organization has rolled out a lot of strategies in curbing this menace of the Hepatitis B virus. This notwithstanding, these efforts are not yielding the needed result due to factors of inadequate knowledge and awareness of the diseases among social service professionals, adolescents, health care providers, the general public and even policymakers. The little knowledge of the disease serves as a great

challenge in effectively preventing, managing and controlling of the disease in the country.

Attitude towards HBV

Knowledge about Hepatitis B infection is very important, however, having just knowledge of the infection is not adequate to promote a change in the behaviour of people. Knowledge alone does not necessarily influence a person's attitude. People's attitudes, values, beliefs, cultural norms and the influence of family, peers and the media are all significant factors that determine that good or bad behaviours are adopted by a person (Emmons et al., 1986). A study conducted in Malaysia on knowledge, attitudes and practices among patients living with Hepatitis B revealed that most of the patients were worried about the diagnosis and anxious about infecting family members and friends with the virus. One-third of the study participants felt shameful or embarrassed to make their status known to the public. About 11.6% of the selected 483 participants indicated that they would not tell their doctor or dentist about being HBV positive. Most of the participants reported that they will tell their family and friends. Many of the participants also reported changing their lifestyle and habits after being diagnosed positive. Therefore, participants reduced the rate at which they take in alcohol and smoking to prevent more damage to their liver. Most of the participants also reported that they eat healthy food and exercise a lot to keep them healthy (Mohamed et al., 2012).

A study also conducted in Singapore on health-seeking behaviours of those infected with HBV, reported that participants that had a family member who had had HBV-related liver disease or had liver abnormality themselves,

were more likely to seek help. Even though they wanted to find out whether their livers were functioning normally, they were afraid to find out the results of the test. Most of the participants preferred traditional medication such as herbs instead of western medication, which was perceived not to be as effective. It was concluded in the studies that the low compliance to follow-up among the patients was partly due to a widespread perception that there was no efficient treatment to the disease (Tan, Cheah, & Teo, 2005).

Another study conducted in the United States among Vietnamese Americans reported that 17.7% of the 1704 participants indicated a family history of the Hepatitis B Virus infection. Sixty-One-point Six percent (61.6%) of the respondents reported being tested for Hepatitis B despite the large proportion of individual knowledge on the disease. It was only 26.5% who reported being vaccinated against the diseases (Nguyen, Law & Dore, 2008).

In a study on Hepatitis B infection among health workers in Uganda: Evidence of the need for health worker protection by Braka et al. (2006) reported that out of 311 health workers in Uganda 60.1% were found having evidence of previous or present infection of the virus, with 8.7% being chronic carriers and one (0.3%) acutely infected and 36.3% were still susceptible and could benefit from vaccination. Only 5.1% reported having had at least one dose of Hepatitis B vaccine and 3.5% were immune through vaccination. Needlestick injuries reported by 77% of health workers were the most common mode of exposure to blood and body fluids. Based on the findings it indicates that some of the health workers were not vaccinated against the virus even-though they had good knowledge about the virus and its ways of transmission. The researchers again reported that health care workers in their

survey with evidence of the previous infection were not aware of vaccination. Nonetheless, almost all survey participants were willing to be vaccinated when researchers later gave the participants more knowledge of the infection.

The attitude of some Ghanaians is not quite different from the participants seen in some of the studies above. A study conducted in Bantama, Ghana among Health care workers in the South Suntreso Government Hospital indicated that the attitude of some health care workers was poor towards the infection. The study reported that health care workers display a negative attitude and negative practice towards HBV transmission. The findings again, indicated that most workers (79.4%) who sustained needle stick injury refused to test for the virus, the few ones (63.3%) who tested for the virus also did not check for immunity after vaccination (Afihene, Duduyemi, Hannah-Lisa, & Khatib, 2015).

A study carried out in Dunkwa-on-Offin Ghana on the knowledge, attitude and perceptions of senior high school students also revealed that most students display a good knowledge base on HBV infection. Students reported that healthy people must be vaccinated against the infection and knew that people at their age also need vaccination and were willing to be tested. Despite the good knowledge displayed towards HBV infection, but only a few of the students had ever been vaccinated against the virus, which indicated a display of negative attitude towards the infection. The reason stated for not getting HBV vaccination was that most of the students believe they were not at risk of getting Hepatitis B Virus, some also reported that Hepatitis B vaccine is costly (Boakye, 2014).

The Concept of Depression

Depression is a type of mental disorder that is characterised by sleep disturbance (insomnia or increase in sleep) or, changes in appetite (loss or increase in appetite), feeling of sadness, loss of interest in activities previously enjoyed, feelings of hopelessness and worthlessness, loss of energy, slowed movement and speech, difficulty in making decision and poor concentration (DSM-IV, 1994). It is the leading cause of disability globally and is also a major contributor to the overall global burden of disease. More women are affected by depression than men (Noble, 2005). It is estimated by WHO (2018) that over 300 million people are affected by depression globally and close to 1 million lives are lost yearly due to suicide, as a result of severe cases of depression left untreated. A depressive episode can be grouped as mild, moderate, or severe. An individual with a mild depressive episode will have some challenges in continuing with normal work and social activities but may not cease to function completely. During a severe depressive episode, it is very unlikely that the affected individual will be able to continue with social, work, or domestic activities, except to a very limited extent.

The Concept of Anxiety

Anxiety is a common mental illness that is characterised by symptoms such as increased heart rate, sweating, rapid breathing, dry mouth, and a sense of dread, nervousness, fear, apprehension, and worrying (Craske et al. 2009). Moderate anxiety levels are normal and good since it is adaptive in helping us to identify and plan for the future threat. It increases our level of preparedness, help us avoid a potentially dangerous situation and to think through potential problems before they happen. However, when anxiety is so intense and long-

lasting, it impairs a person's daily functioning and become a challenge for the affected person (America Psychiatric Association, 2013). Anxiety disorders, in turn, affect how the sufferer feels, reacts and behaves. The disorders can be mild, moderate and severe. Anxiety can be experienced with long, drawn-out daily symptoms that reduce the quality of life, known as chronic anxiety. It can also be experienced in short spurts with sporadic, stressful panic attacks, known as acute anxiety. Symptoms of anxiety can range in intensity, and frequency, depending on the person (Olatunji, Cisler & Tolin, 2007; Kessler, 2005). While almost everyone has experienced anxiety at some point in their lives, most do not develop long-term problems with anxiety.

Anxiety occurs when a reaction is out of proportion with what might be normally expected in a situation and it is not the same as fear. Fear is a reaction to immediate danger or challenges (America Psychiatric Association, 2013). It is the anticipated aspect of anxiety that is threat or danger, fear and anxiety can be differentiated in four separate domains: duration of emotional experience, temporal focus, a specificity of the threat, and motivated direction. Both fear and anxiety involve a sympathetic nervous system, anxiety often involves moderate arousal but fear may involve a higher arousal level.

The Concept of Coping

Coping has been defined as "continuously changing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person" (Lazarus & Folkman, 1984 p.3). Coping is widely defined as an effort used to reduce distress accompanying negative life experiences (Carver & Vargas, 2011; Lazarus & Folkman, 1984). The methods or styles of coping differ based on

the type of stressor, personality, and individual differences (Carver &Vargas, 2011). There are differences in how people cope with adversity. Folkman and Lazarus have grouped coping strategies into emotional and problem-focused strategies. Emotion-focused coping involves an effort to minimize the negative emotional responses linked with stress such as embarrassment, fear, anxiety, depression, excitement and frustration.

The emotion-focused may be the only realistic option when the source of stressors are not one's control, some emotion-focused techniques includes distraction (keeping yourself busy to take your mind off the situation), eating more, drinking more, meditating and praying for guidance, using drugs and suppressing of negative thought and emotion. The problem-focused coping involves targeting the causes of stressors in a very practical way and deals with the root of the stress, consequently directly reducing the stress. Problem-solving, time management and obtaining social support are also techniques used in problem-focused coping.

Problem-focused coping is considered best compared to the emotion-focused coping since the problem-focused coping deals with the cause of the problem and provides long lasting solution. However, it will be best to use emotion-focused coping in dealing with emotional problems such as loss of loved ones and reported that in relation to health outcome emotion-focused strategies are normally less effective than using problem-focused (McLeod, 2009). Strategies for coping can be categorised into engagement coping and disengagement coping.

Engagement coping refers to the efforts that involve contact with the stressor and with the associated emotion, while disengagement responses refer

to coping efforts to detached one's self from the stressor and the associated emotions (Roussi, Krikeli, Hatzidimitriou & Koutri, 2007). The engagement coping includes strategies such as acceptance (the recognition of the reality of the situation), positive reinterpretation (interpreting the situation in positive terms), planning (contemplating about how to cope with the situation) and seeking social support (seeking help and sympathy).

Disengagement coping includes strategies such as denial (the refusal to believe that the situation exists) and mental disengagement (efforts to distract self from thinking about the situation). According to Kvillemo and Branstorm (2014), literature on engagement strategies do not purpose in changing the stressor itself, but rather enhances adaptation, may be specifically helpful when the chance to exercise direct control may be limited. Coping methods or styles that are suitable in one situation may be maladaptive in response to another situation. For example, humour can be used to offset a stressor, but can also be used as avoidant tactic to delay the processing of difficult thoughts and emotions (Lawrence & Fauerbach, 2003; Amoyal et al., 2011). Thus, it is important to understand coping strategies or styles within the context of the stressor at hand.

Coping strategies are then known to play an important role in emotion regulation (Boden & Baumeister, 1997; McFarland & Buehler, 1997). Stress and coping can be considered to be reciprocals of each other. When the coping is effective, the level of stress tends to be low or less, if an individual has inappropriate coping skills, there is a tendency for stress to be high or continue to increase (Lazarus, 1999; Queen & Queen, 2004). Individuals are believed to

experience the impact of stress when the perceived demands of a situation exceed the perceived resources for coping.

The Concept of Religious Coping

The concept of religion and spirituality and its significance in understanding and managing health is receiving more attention in health sciences research (Harvey & Silverman, 2007; Thune Boyle, Stygall, Keshtgar, & Newman, 2006). Religion is defined as an organised system of beliefs, practices, and symbols designed to facilitate closeness to the Supernatural and to foster an understanding of one's relationship and responsibility to others in living together in a community (Koenig, King, & Carson 2012). Supernatural or the Divine also refer to as God, Allah, a Higher Power among others.

According to Beauregard and Leary (2009), spirituality means any involvement that is thought to bring the experiencer into connection with the divine/transcendent. It is the facet of humanity that denotes the way people seek and express meaning and purpose and the way they experience their connectedness to the moment, self, others, nature, and the significant or sacred (Puchalski et al., 2009). It is more of personal practice or experience and has to do with having a sense of peace and purpose. Religion and spirituality share a common denominator which is the transcendent factor, beliefs, values and among others.

Pargament (1997) describes coping as an effort to find answers to challenges that arise in life. Individuals can use religion for this purpose, and it is known as religious coping. Religious coping plays an important role such as helping the individual to discover meaning, to gain control, to acquire comfort by closeness to God or the transcendent, to achieve closeness with others and

to transform life (Pargament, Koenig, & Perez, 2000). Religious coping can be seen as a strategy because it may involve engagement efforts to process and adapt to the threat. Religious beliefs may also serve as a framework within which the individual can appraise and process the threat, thus facilitating meaning-making and increasing hope and one's sense of well-being (Ai, Park, & Huang, Rodgers, & Tice, 2007; Pargament, Feuille, & Burdzy, 2011; Park, 2007). Health research about religion/spirituality reports that many people depend on religion, spirituality, and faith to cope with illness, and that use of these coping techniques is associated to less depression (Koenig, McCullough & Larson, 2001).

Positive and negative religious coping are identified as two functions of religious coping (Pargament & Abu Raiya, 2007; Pargament et al., 2011; Pargament, Smith, Koenig, & Perez, 1998). Positive religious coping indicates "a secure relationship with the supernatural, a sense of spiritual connectedness with others, and a benevolent world view, forgiveness, religious purification while negative religious coping "suggests underlying spiritual tensions and struggles with oneself, with others, and with the divine," (Pargament et al., 2011 p.51).

The positive religious coping involves working with a transcendent as a partner, with the hope that the transcendent will help to provide comfort, guidance, and strength to cope with stress or challenging situations. Negative religious coping may be more dangerous, frightening or disturbing, it increases stressors through beliefs of being abandoned by the Divine or the transcendent and the church, belief of being punished by God for sinful behaviours. Positive religious coping, results in removing stress related to declining physical health,

while negative religious coping increase stress. At the same time, religious beliefs may serve as a framework within which the individual can appraise and process the threat, therefore facilitating meaning-making and increasing hope and one's sense of well-being (Ai, Park, Huang, Rodgers & Tice et al., 2007; Pargament et al., 2011; Park, 2007). Positive religious coping is also shown to be a significant coping tool to deal with psychological distress and finding a sense of purpose in life after being diagnosed with a terminal disease (Lee & Nezu, 2012). The negative religious coping is also noted to promote a positive resilient relationship with God and allow patients to question and complain to their transcendent, and generally seen as spiritual maturity and flexibility in usage of religious coping strategies (Abu-Raiya, Pargament & Exline, 2012).

The role that religious resources play will place a demand on the individual religious coping style. Coping style is a persistent way/method of responding to problem situations. Pargament (1997), proposed the combined religious moderator-deterrent model. This model propagates that, religious coping serves a moderating factor that protects religious people from the harm of stress as their stress levels rise. Religious coping is an effective determinant of more favourable outcomes no matter how intense stress is, because of this it serves as a prevention function.

Prevalence of positive and negative religious coping

The Positive Religious Coping subscale measures efforts to sustain a positive connection with God, collaborate with God, find positive meaning in the stressor, and let go of negative emotions. The Negative Religious Coping subscale assesses perceptions of a disturbed or conflictual relationship with God, loss of faith in God's power and belief that the devil caused the stressor.

It has been noted recently to be used in most research work. Cummings and Pargament (2010), in their meta-analysis study among persons with medical conditions, stated that mostly patient samples make use of positive religious coping strategies more often than negative religious coping strategies.

A study conducted on positive and negative religious coping and well-being in women with breast cancer patients by Hebert, Zdaniuk, Schulz, and Scheier (2009) found that the percentage of respondents who used positive religious coping (partnering with God or looking to God for strength, support, or guidance) was 76%. Negative religious coping (feeling abandoned by or anger at God) was much less prevalent; 15% of respondents reported feeling abandoned by or angry at God. The study used one hundred ninety-eight respondents with stage I or II and 86 respondents with stage IV breast cancer. Religious coping was measured with Pargament RCOPE and respondent's depression was also measured by using the 10-item version of the Center for Epidemiologic Studies Depression Scale (CES-D). It is likely that findings of the current study may depict the result of this prior study due to similarity in methodology and may also slightly differ due to the difference in sample size and the difference in the tool both studies used in measuring depression.

Another study on spirituality and religion in patients with HIV/AIDS interviewed four-hundred and fifty patients. The Brief RCOPE scale was used to measure positive and negative religious coping. The findings of the study revealed that three hundred thirty-nine (75%) patients living with HIV/AIDS adopted positive religious coping often than negative religious coping (Cotton et al., 2006). Though the study used different medical condition, the result of this study is most likely to record similar findings since they are all chronic

diseases and used a similar instrument and methodology (cross-sectional and quantitative). The result of the current study may also differ from cotton and colleagues' study because of the difference in the sample size. According to Exline, Kaplan and Grubs (2012), most users fail to report much information on their negative religious practices. They reported that most individuals think that showing anger towards God is morally wrong. This finding buttresses the report of Exline and Grubs (2011). They also reported that most people are unwilling to report their negative religious practice thinking that they will receive a stigmatizing report from others.

Religious Coping and Religious Background

Religious involvement or religious background of an individual is very important. It provides the user resources for coping with stressors associated with illness and these resources increase the frequency of positive emotions such as hope, optimism, increase in wellbeing and comfort, acceptance, and strength. It reduces the likelihood of stressors causing emotional disturbance such as depression, anxiety and suicide. Religious involvement allows the user to use religion as coping tool or strategy to fight stressors concerning health and life challenges, helps individuals in their pursuit of the meaning of life (Koenig 2012; Siegel, Anderman & Schrimshaw, 2001). Individuals who are involved in religious activities are noted to have better psychological health such as less depression, less anxiety, lower stress and more positive emotions since their religious involvement allows them to use religion as coping factor. It helps them to cope well with the diseases and prevents negative events linked with a physical health issue with meaning and purpose. It was indicated

in the studies again that medical patients adopt religious beliefs to cope with their illness and other stressful life changes (Koenig, 2012).

A meta-analysis study conducted by Bonelli, Dew, Koenig, Rosmarin, and Vasegh (2012) on the relationships between religious involvement and depressive symptoms during the last 50 years (1962 to 2011). They found out that the Pentecostals experience a high rate of depression than other religious affiliation and that may warrant their more usage of religious coping and more dependency on religion. Also, research conducted by Quayesi-Amakye (2013) presented that Ghanaian Pentecostals recognize the spiritual origins of certain illnesses that they also acknowledge to curing the disease's psychological and medical aspect. Some Pentecostal churches offer free medical counselling and advisory services to their members and it is noted that such services guide beneficiaries in the implementation of suitable health practices. This indicates that most Pentecostals in the current study are most likely to adopt religious coping in dealing with their psychological health since they have a diverse belief about health. Chatters, Taylors, Jackson and Lincoln (2008) also support the assertion that Pentecostals are likely to use religious coping because they also found in their study that Pentecostals use more of religious coping than Baptist.

Studies have indicated that less depressive symptoms, less emotional distress and good psychological adjustment are found in religious individuals (Hood, Hill, & Spilka, 2009). Individuals with good religious background can develop good meaning or understanding towards stressful situation since their religious background/affiliation serves as a better coping tool (Park, 2005). As a meaningful coping tool, religion leads to a stress-related growth, including

closeness to God, growth of faith and active involvement in religious activities. According to Koenig (2012), numerous pieces of research indicate that more religious individuals have improved mental health and adapt more quickly to health challenges as compared to persons who have no religious involvement or background.

A significant inverse relationship was also reported for coronary heart disease patients which indicates that patients with coronary heart disease who were highly religious have a better illness experience as compared to those with less religious involvement or background (Berntson, Norman, Hawkley, & Cacioppo, 2008; Burazeri, Goda, & Kark, 2008). This shows that religious background and coping plays an important role in the recovery, maintenance and prevention of illness.

Another study conducted by Tix and Frazier (1998) on the effects of religious coping styles, the potential moderation of such effects by religious affiliation and the potential mediation of such effects by various factors (cognitive restructuring, social support, perceived control). The study recruited patients and significant others coping with the stress of kidney transplant surgery. Carver, religious coping scale and Pargament RCOPE scale were used to assess respondents religious coping. The study showed that the use of religious coping was largely linked to better adjustment both concurrently and overtime in both patients and significant others. These associations were moderated by religious affiliation, to the extent that religious coping was more effective in promoting adjustment for Protestants than for Catholics. They indicated that the differential effectiveness of religious coping in Catholics and Protestants may be due to the 'fit' between the use of certain religious coping

activities. Protestants were more intrinsically religious, but the Catholics hold onto their religion to actively alleviate/promote guilt reduction through active confession and atonements. This result is most likely to be demonstrated in the current study due to similar methodology employed in both study, which is cross-sectional and quantitative approach, but it may also slightly differ from findings because of its long years of research.

Religious Coping and Depression

There are little or few works of literature involving studies concerning psychological disorders such as depression among HBV patients specifically, but some studies have been able to indicate that depression is highly common in patients living with chronic HBV (Enescu, Mitrut, Balasoiu, Turculeanu, & Enescu, 2014). It has also been established that there are higher prevalence rates of depression among chronic Hepatitis B patients (Alian et al., 2013). There is also a dearth of literature on the relationship between religious coping and depression among Hepatitis B patients, but there are several works of literature on the relationship between religious coping and depression in other chronic illness such as cancer and hemodialysis and other more.

In a study conducted by Fatemeh (2013) at Birjand and Mashhad in Iran, on the relationship between religious coping and depression in cancer patients, the study indicated that the degree of depression was higher among cancer patients who had an avoidant strategy (negative religious coping). The religious coping method of relationship with God was effective in reducing depression. The rate of depression was lower among patients whose families had a better attitude toward religion. The study was a descriptive-correlational and was conducted in three different hospitals in the city with a sample size of

150 cancer patients. Only patients with a confirmed diagnosis of cancer were included. Patients with a family history of psychological disorders such as schizophrenia and mood disorders were not included in the study. Pargament's questionnaire for the evaluation of religious coping and the Beck depression inventory were used to solicit information from participants. This indicates that Hepatitis B patients who use religious coping in the current study are most likely to show the same results. The degree of depression could be higher among Hepatitis B patients who use negative religious coping as was depicted in Fatemeh's study. The opposite would be for Hepatitis B patients that used positive religious coping. They would have low level of depression as it was also shown in cancer patients that used the religious coping method of having a relationship with God. The study could also deviate from the findings of Fatemeh's since there are differences in methodology in terms of the study area and the number of hospitals that were used.

Certain aspects of religious coping were more helpful in reducing poor mental health (for example, depression) than others. A study conducted by Olson, Trevino, Geske and Vanderpool (2012), indicated that the use of positive religious coping was reported as a predictor of better mental health whereas negative religious coping as a disturbing factor or predictor of poorer mental health. Olson and colleagues recruited 123 patients with little or no financial resources who presented themselves for mental care at the community health centre. The negative impact of negative religious coping on mental health outcomes was more robust than the positive impact of positive religious coping. This indicates that negative religious coping may have a

more damaging impact on mental health outcomes compared with positive religious coping.

The participants recruited by Olson and colleagues comprised patients going through economic stress and had to cope with their diseases. Patients who were found using positive religious coping were reported to experience good mental health outcome and vice versa for the patients that used negative religious coping. It may be argued that dealing with economic challenges may not be as serious as dealing with a chronic illness such as Hepatitis B. It is uncertain as to whether religious coping can impact the mental health of such individuals who have to deal with their illness for the rest of their lives.

The findings of Olson and colleagues were consistent with the findings of Fatemeh's indicating that avoidant strategy (negative religious coping) was linked with increased depression, while religious coping of getting closer to God indicates less depression. This also buttresses that individuals living with Hepatitis B using positive religious coping can have a reduction in depression and vice versa.

Another study conducted by Ramirez et al. (2012) also revealed that hemodialysis patients consistently use both positive and negative religious coping to deal with their renal disease. They also established that there was a relationship between religious coping and either depression but also indicated specifically that positive religious coping was not linked with psychological distress. This also shows that positive religious coping has a lot of beneficial effect on patients in regulating their psychological distress.

Another study conducted by Santos et al. (2017) among renal diseases patients undergoing hemodialysis aimed to evaluate the associations between

religious coping style and both quality of life and depression of the renal disease patients. The result of the study indicated that positive religious coping scores were negatively linked with depression scores and were an independent protective factor for depression. A positive association was identified between negative religious coping and mental health. Sample of 161 renal disease patients was used and religious coping styles were assessed with the Religious Coping Questionnaire (RCOPE). Depression was also evaluated using the Center for Epidemiologic. The result of this study buttresses the findings of Ramirez et al. (2012) that positive religious coping is not associated with poor psychological health such as depression and anxiety. Findings in both studies are most likely to be recorded in the current study due to the similarities in the methodology (quantitative)

Lastly, in a qualitative study that aimed at assessing the interactive effects of coping strategies and psychological stress, anxiety and depression symptoms among Chinese patients living with Type-2 diabetes by Zhang et al. (2009). Zhang and colleagues found out that there was a relationship between psychological stress, and anxiety and depression. They reported that negative coping style increased the level of anxiety and depression among the patients whereas, active coping style reduced the risk of depressive symptoms among participants. The outcome of the study revealed that certain coping styles might moderate the association of psychological stress with anxiety and depressive symptoms in patients with Type-2 diabetes. Even though the study, in general, did not use religious coping to measure the participants coping styles, the findings reported gave an insight into how positive coping and negative coping can predict anxiety and depression among HBV patients. This

predicts that Hepatitis B patients who will employ positive religious coping are more likely to have a reduced depressive symptom since positive religious coping is more correlated to active coping, and vice versa for patients that will employ the negative religious coping method. The result of this current study may appear to be like the above result or may differ slightly due to differences in methodology and study area.

Religious Coping and Anxiety

Anxiety is known as emotions that regularly occurs; it can be seen throughout all human cultures. Some of the actual most prominent medical and public health problems like anxiety disorders are based on the pathology of feelings (Damasio & Carvalho, 2013). Several studies have indicated that there is a relationship between the use of religious coping and anxiety level existing among Hepatitis B patients for example, a study conducted by Oti-Boadi and Asante (2017) on psychological health and religious coping of Ghanaian women with infertility, indicated that psychological distress such as anxiety is found in women with infertility. The anxiety increases with ageing and duration of infertility. They reported that negative religious coping was significantly and positively associated with psychological distress. There were also positive links existing between positive religious coping and anxiety and not depression. This then indicates that there could be a positive relationship between HBV patients who use positive religious coping and their anxiety levels and there could also be a positive significant association between HBV patients who use negative religious coping and their anxiety level. There can still be differences that will come as a result of the difference among the methodology such as, study area, using a different instrument to assess the

anxiety and depression among patients (The Brief Symptom Inventory-BSI) and the number of hospitals used for the study. Despite the difference, both studies share some similarities such as being conducted in the same country, using descriptive analysis and also using the same instruments for measuring the religious coping style that is Brief RCOPE, this makes it likely that such results can be seen among Hepatitis B patients using religious coping.

In a study on mental health in hypertension: assessing symptoms of anxiety, depression and stress on anti-hypertensive medication adherence, the researchers Kretchy, Owusu-Daaku and Danquah (2014) reported that hypertensive patients who adopted spirituality showed a significant association with lower levels of anxiety and depression. The study employed DASS 21 to measure the depression and anxiety levels of 400 hypertensive patients and a ten-item Spiritual Perspective Scale in the collection of data relating to the participants' religiosity/spirituality.

The researchers concluded that these strong spiritual attributes may have helped patients to cope better with their emotional problems of having a chronic condition like hypertension. Even though the study used a scale that did not indicate to us whether the participants used positive religious coping or negative religious coping, they reported that greater spiritual well-being is linked with fewer symptoms of anxiety and depression. Despite the difference in methodology in terms of samples size and difference in scales, and the difference in study area, this finding is most likely to be reported among Hepatitis B patients that will adopt positive religious coping, since positive religious coping gives the user a greater spiritual well-being and connotes more to strong spiritual attributes (praying, hope optimism and among others).

Hepatitis B patients who adopt negative religious coping method are also most likely to have increased anxiety levels since the negative religious coping scale is noted as spiritual struggling with the transcendent which does not promote greater spiritual wellbeing.

Religious Coping and Gender

Gender represents the socially constructed features of women and men in terms of norms, roles and relationships of and between groups of women and men. Gender varies from one society to another society. When individuals or groups do not fit established gender norms, they often face stigmatization, discrimination or social exclusion all of which adversely affect health (WHO, 2018). Gender norms, roles and relations impact an individual's susceptibility to different health conditions and diseases and affect their enjoyment of good mental, physical health and wellbeing. They also have a bearing on people's access to and uptake of health services and on the health outcomes they experience throughout the life-course. Gender differences within religion have been established by some studies and it was known that women are generally found to be more religious than men (Francis, 1997; Gallup & Lindsay, 1999).

Hayes (1996), established that men generally are more inclined to change their religious denomination than women and according to Maselko and Kubzansky (2006), women were found reporting a higher rate of personal private prayer and they also found that gender may modify the relationship between health and religion. The World Values Survey (2006), has also established that women attend church frequently than men. The perception individuals hold concerning the image of their transcendent influence them in all manner of endeavours.

Both sexes seem to have different images of God. For example, Nelsen, cheek Jr and Au (1985), reported that on three images of God (God as a King, God as a healer and as relational) women scored higher only on the image of God as Healer but was not so among men. This indicates that Hepatitis B patients that actively take part or involved themselves in their religious beliefs are also more likely to assume this picture of God being a healer, especially among women as compared to men. Ozorak (1996), found that women have a more positive image, emphasizing a personal relationship with a loving God, while men hold a more controlling God-image, and focus on God's power and judgment.

A study conducted on gender and racial differences in stress, coping, and health-related quality of life in chronic kidney disease by Gemmell et al. (2016). They reported that women with chronic kidney disease tended to use religious coping more often than men. The researchers recruited 182 patients and used the Brief RCOPE scale in measuring their religious coping. It is most likely that similar results will be found among HBV patients that use religious coping concerning their gender because of their similarity in methodology and instrument used. Notwithstanding it can also differ because of the difference in sample size.

Reid-Arndt, Smith, Yoon & Johnstone (2011) also sought to identify gender differences among medical patients for their religious beliefs/practices and their associations with health. They reported that there were no gender differences found in the endorsement of spiritual experiences, religious practices, or congregational support. They used 168 diverse medical patients (traumatic brain injury (TBI), stroke, spinal cord injury, and cancer). The Brief

Multidimensional Measure of Religiousness/Spirituality (BMMRS), and the general mental health (GMH) scales to measure their religious practices and their mental health. The current study may also record similar findings due to gender difference in religion established some researchers in their study, for example, Kubzansky and Maselko (2006) established a difference in gender in terms of religion. Notwithstanding the result of this current study may also deviate from the findings of Reid-Arndt and colleagues' study due to the difference in the research instruments, and the and wide variety of selected patients

Another study by Park et al. (2017), studied the positive and negative religious/spiritual coping and combat exposure as predictors of posttraumatic stress and perceived growth in veterans. They found out that there was no difference among gender concerning their endorsement or usage of negative religious coping. Six hundred and thirty participants were used. Negative religious coping was inversely allied with posttraumatic growth and positively with posttraumatic stress disorder, while positive coping was related only to posttraumatic growth. This study also buttresses Reid-Arndt and colleagues' study that reported no gender difference in religious coping usage. This finding may be demonstrated in the current study despite the difference in instrument and sample size because some study has also established that there are no gender differences in images (healer, provider and more) of God (Krejci, 1998). According to Krause, Pargament, Hill and Ironson (2018), gender is noted to be one of the several social factors that have been shown to influence the relationship between religion and health.

A study also examined whether personal beliefs and direct coping mediate the association between spirituality and depressive symptoms in a school-based sample of adolescents and whether gender, race, or grade level moderate this model. They reported that the model was moderated by gender. The study used Index of Core Spiritual Experience (INSPIRIT) in measuring spirituality in their work (Perez, Little & Henrich, 2008). The result of this study may slightly differ from the findings of current study due to difference in the measuring instrument and its longitudinal nature. Notwithstanding it is still likely that current work may see gender to moderate the relationship between religious coping and psychological health once it has been found in moderating religious coping in previous research work.

Lastly, Prati and Pietrantoni (2009) studied the role of optimism, social support, and coping strategies in contributing to posttraumatic growth. Results from 103 studies (meta-analyses) showed that all three systems of variables yielded noteworthy effect sizes. Religious coping and positive reappraisal coping produced the largest effect sizes. Gender was found to be a significant moderator of religious coping and posttraumatic growth.

Conceptual Framework

This study conceptualizes the influence of religious coping style on the psychological health of Hepatitis B patients. The infection will lead to distorted or irrational thinking pattern among infected patients which can result into varied levels of depression and anxiety. Depression and anxiety in persons living with Hepatitis B requires an effective coping mechanism to manage. In this model, the usage of religious coping styles (positive and negative) have proven to influence respondent's depression and anxiety. The

relationship existing between religious coping and psychological health was influenced by the moderating variables that are religious background and gender. Specifically, patients religious background (Pentecostals) influenced on the relationship between positive religious coping and anxiety and gender (females) as a moderating variable was also noted to influence the relationship between positive religious coping and depression.

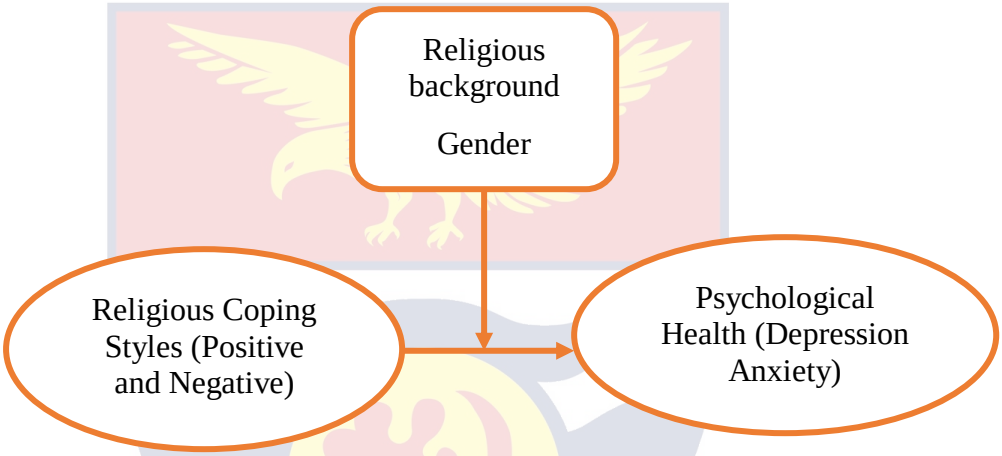

Figure 2: Conceptual framework
Source: Osei (2019).

Chapter Summary

This chapter has reviewed concepts related to issues on Religious coping influence on the psychological health of Hepatitis B patients under three main headings that is the conceptual framework, theoretical framework and empirical review. Under the theoretical framework, Pargament Religious coping theory and Health Belief Model had been considered. The conceptual framework was also considered the explanations of the various concepts and their interplay. The empirical review also considered studies conducted in the following religious coping and religious background, religious coping and anxiety, religious coping and depression religious coping and gender.

CHAPTER THREE

RESEARCH METHODS

Introduction

This chapter presents an outline of the research methods used in the study. It deals with the research design, research approach, population, sample and sampling procedure, study area, ethical considerations and its implications, research instrument, data collection procedures and methods of data analysis.

Research Design

Research design is the researcher's total way of answering the research question or testing the research hypothesis (Polit, Beck & Hungler, 2001; Polit & Beck, 2012). The design gives an overall background for carrying out research based on the objectives of a study that a researcher decides to adopt. The study sought to investigate out the influence of religious coping methods on the psychological health of Hepatitis B patients. This study was based on quantitative survey research. Quantitative research is used to quantify the problem by way of generating numerical data or data that can be transformed into useable statistics. It is used to quantify attitude, opinions, behaviour and other defined variables and generalising results from a larger population. The advantages of quantitative survey design include:

1. It gives accurate quantitative, numerical data
2. It helps obtain data that allow the quantitative prediction to be made
3. It helps study large numbers of people. A descriptive survey design was considered most appropriate for this work because interpretations can

be made, and the results can be generalised.

According to Creswell (2014), the quantitative research approach tests a theory by identifying the narrow hypothesis and gather data to validate or disprove the hypotheses, as well as analysing the information using statistical procedures and hypothesis testing.

Study Area

Kumasi Metropolis is one of the thirty administrative districts of the Ashanti Region. It is the second most populous city of Ghana next to Accra and has a land size area of approximately 214.3 square kilometres with a total population of 1,730, 249 representing 36.2 percent of the total population of the Ashanti Region (Ghana Statistical Service, 2014). Kumasi Metropolis is divided into nine sub-metropolitan areas such as Suame, Kwadaso, Old Tafo, Nhyiaso, Subin, Asokwa, Oforikrom, Bantama, Manhyia. The Metropolis has diverse ethnic groups and the largest of it are the Asante (80.7%), followed by the Mole Dagbon (8.7%) and Ewe (3.6%). Almost all the other ethnic groups in Ghana reside in the Metropolis. The major occupation in the Metropolis is manufacturing and trading, and Twi is the widely spoken language in the Metropolis. From the 2010 Population and Housing Census, four out of every five people are Christians (84.5%) and 11.2% belongs to the Islam religion and 1.1% belongs to traditionalist and other religion. There are 826,479 males representing (47.8%) and 903,779 females representing (52.2%) in the Metropolis. A greater portion of the total population is found in the productive labour force that is 15-64 years that is constituting 63.3% (1,095,190), the population of 65years and older also is 3.6% (61,457) and the remaining 33.2 % belongs to the age group of 0-14 years (Ghana Statistical Service, 2014). The

Metropolis has many health facilities that provide health care services to its inhabitants such as Atonsu-Agogo Hospital, Suntreso Government Hospital, and Tafo Government Hospital. The biggest of such facility is the Komfo Anokye Teaching Hospital (KATH) which is a modern teaching hospital widely used ‘by inhabitants and others from different regions.

Population

The target population of the study was all Hepatitis B patients in the Kumasi Metropolis. The study’s accessible population consisted of patients in Komfo Anokye Teaching Hospital and South Suntreso Government Hospital who were 18 years and above. A demographic sheet was used to collect participants’ data thus age, gender, religious affiliation/background.

Sample and Sampling Procedure

A sample is a set of individuals selected from a population and usually intended to represent the population in a research study (Gravetter & Forzano, 2009). A total population of 250 from both hospitals of which 180 from Komfo Anokye Teaching Hospital and 70 from South Suntreso Hospital. Using Krejcie and Morgan’s (1970) table for determining sample size 152 respondents selected as the sample size. A proportionate stratified sampling was used to select 109 participants from Komfo Anokye Teaching Hospital and 43 participants from South Suntreso Hospital. Proportionate Stratified sampling is a type of probability sampling technique that gives a proportional representative of participants based on some features or variables available (Deng, Reeves, Jacobs, Birbeck, & Kothari, 2006). It was used to share respondents across the two hospitals.

Formulae: Sample size = size of entire sample/ population size × layer size.

Population size-250

Sample size-152.

Layer size- 180 KATH, 70-South hospital.

KATH [152 ÷ 250] × 180 = 0.608 × 180 = 109 participants

South hospital [152 ÷ 250] × 70 = 0.608 × 70 = 43 participants

Purposive sampling and convenience sampling techniques were also used for sampling respondents for the study. Convenience sampling is a type of sampling technique where participants are selected primarily because of their accessibility and proximity to the researcher. In convenience sampling, the participants selected are those that meet the set down criteria, such as accessibility, geographical proximity, availability at a given time or the willingness to participate (Dornyei, 2007). The assumption associated with convenience sampling is that the members of the target population are homogenous.

Purposive sampling was used to select only HBV patients that belong to a particular religious group in both hospitals (Etikan, Musa, & Alkassim, 2016). Convenience sampling and purposive sampling were considered appropriate because of the respondents' features in the study. HBV patients access medical care at KATH once in a week. In most cases, patients at Suntreso did not want to spend much time at the HBV clinic due to perceived stigmatization from other patients and not many of them came to the HBV clinic on a given day, hence it became difficult to randomly select them for the

study. Therefore, respondents who were available and met the set down criteria of inclusion and willingly opted to be part of study were used.

Inclusion Criteria

Inclusion criteria for the study were:

(a) Hepatitis B patients diagnosed for at least 6 months.

(b) The patients must be 18 years and above.

(c) Belong to a specific religious group; Orthodox, Pentecostals, Islam and traditionalist/others.

(d) Must be willing to participate in the study with no sign of any severe mental disorder.

Exclusion Criteria

The exclusion criteria for the study were:

(a) Hepatitis B patients diagnosed less than 6 months also patients below 18 years (b) Patients who do not belong to any set of religion.

(c) Patients that are clinically severe mental disorder.

Research Instruments

The instruments used for the study include Brief Religious Cope (Brief RCOPE) by Pargament, Koenig and Perez (2000), Beck Depression Inventory-II (BDI-II) by Beck, Steer and Brown in 1996 and Beck Anxiety Inventory (BAI) by Beck, Epstein, Brown and Steer (1988).

Brief RCOPE

The Brief RCOPE (Pargament, Koenig, & Perez, 2000) is a 14-item measure of religious coping with major life stressors. In literature, it is rated as one of the best measures of religious coping. It has helped in adding up more knowledge about the several functions religion plays in the process of dealing

with challenges, crisis, and trauma and life difficulties. The scale was designed out of the Pargament (1997) program theory and research on religious coping. It was developed to give researchers and practitioners with an effective and efficient measure of religious coping. The factor analysis of the shortened scale of the full RCOPE revealed a two-factor solution which is negative and positive items. The Brief RCOPE has seven items on each of the positive and negative subscale that measures religious coping.

The positive religious coping taps into a sense of spiritual connectedness with the transcendent force (God, Allah), a reliable relationship with an affectionate God and a belief that life has greater kind meaning, the negative religious coping is evident by signs of struggles within oneself, with God and with others, spiritual tension, conflict, as manifested by negative reappraisal of God powers (example, feeling rejected or punished by God), demonic reappraisal (example, feeling that the devil is involved in the trauma, stressors), spiritual questioning, doubting etc. The scale has good inter-item reliability with a Cronbach's alpha of $\alpha = 0.65 - 0.80$ as seen in their original study. The scale has a high Cronbach's alpha of $\alpha = 0.92$ and $\alpha = 0.82$ for positive and negative religious respectively (Pargament, Koenig & Perez, 2000). Also, numerous empirical studies (Example, Sherman, Simonton, Latif, Spohn, & Tricot, 2005; Cole, 2005) depict the internal consistency of the positive and negative subscales of the Brief RCOPE to be good. For example the positive religious coping includes items such as looking for stronger connection with God, forgiveness of sins and relying on God's strength and negative religious coping styles also includes items such as I decided the devil made this happened, wondered what I did for God to punish me. The items on

both scales are rated on a four-point Likert scale type ranging from 0 (not at all) to 3 (a great deal).

Beck Depression Inventory -II (BDI-II)

The Beck Depression Inventory-II is a revised edition of the original 21-items of the old Beck Depression Inventory, it is a self-report instrument designed to assess the presence and severity of symptoms of depression as listed in the Diagnostic and Statistical Manual of Mental Disorders Fourth Edition (DSM-IV; 1994). The Beck Depression Inventory-II was developed by Beck, Steer and Brown in 1996. Each of the 21-items is on a four-point Likert scale type ranging from 0 (absence of symptoms) to 3 (most severe symptoms) to assess symptom severity during the past week. Items 16 and 18 have seven options to indicate either an increase or decrease of appetite and sleep. A total score of 0-13 is considered minimal range, a total score of 14-19 is mild, a total score from 20-28 is moderate, and 29-63 is severe. The scale has a high Cronbach's alpha of $\alpha = 0.80$, the scale construct validity has been established, and it can differentiate depressed from non-depressed patients.

Beck Anxiety Inventory (BAI)

Beck Anxiety Inventory (BAI) was published in 1988 by Beck, Epstein, Brown and Steer. The questionnaire consisted of 21 items with a Likert scale ranging from 0 (absence of symptoms) to 3 (most severe symptoms). The instrument is a self-report scale that measures the presence and severity of anxiety. A total score of 0 to 21 is classified as low anxiety, 22 to 35 as moderate anxiety, 36 and above as severe anxiety. The scale has a high Cronbach's alpha of $\alpha = 0.92$, the validity of the scale has been established in several studies.

Pre-Test of Instrument

A pilot-test of the adopted instruments was done before the commencement of the current study. Although, the adopted instruments have been indicated to have good stable psychometric properties, but they were pilot tested in our settings to determine it practicability and suitability as the need arise. The pilot-test involving 20 HBV patients was carried out at Power clinic at Aputuagya, Bosomtwe District in Ashanti region. The Cronbach alpha was run for each of the scales. The Cronbach alpha for the Brief RCOPE that is positive and negative religious coping was $\alpha = 0.86$ and $\alpha = 0.85$, respectively. Beck Anxiety Inventory reports a Cronbach value of $\alpha = .82$, Beck Depression Inventory has a Cronbach value $\alpha = .83$. The instruments were considered reliable and appropriate to collect the relevant data to answer the hypotheses.

Ethical Consideration

A letter of introduction was attained from the Department of Education and Psychology and was sent to the Chief Executive Officer of the Komfo Anokye Teaching Hospital and South Suntreso Government Hospital to introduce the researcher to the hospitals (Appendix B). Permission was given by a Committee on Human Research, Publication and Ethics (CHRP), Kwame Nkrumah University of Science and Technology, School of Medical Sciences and the Komfo Anokye Teaching Hospital (KATH) to allow the study to be conducted in their facilities (Appendices C & D & E). This was done after they had examined the proposal to access any possible risks or threat to patients associated with the study. Approval to conduct the study was also sought from the University of Cape Coast Institutional Review Board (IRB)

Graduate School for Ethical Clearance to conduct the study (Appendix F). Ethical clearance was checked to ensure that the study did not violate the privacy and rights of Hepatitis B patients.

Data Collection Procedure

The researcher had the opportunity to clearly explain to the patients the rationale and the objectives of the study after being introduced by the hospital assigned supervisors (corroborators). Participants that met the criteria of inclusion and voluntarily agreed to be part of the study were recruited. Their confidentiality was assured and written informed consent was obtained from them to indicate their acceptance to truly join the study (Appendix A). The questionnaires (Appendix A) were administered under the supervision of the researcher and other trained research assistants. Good relation was established with participants to create a conducive environment before administering the questionnaires to them. A total of 144 out of 152 patients from both hospitals voluntarily took part in the study within a period of four months from May to August 2019. Participants who could not read or write were assisted by the research team. Collected questionnaires were securely stored and later sorted out for analysis.

Data Processing and Analysis

Using the Statistical Package for the Social Science (SPSS version 21) data entry was done. After entry, data cleaning was performed to check for errors. Descriptive and inferential statistics were conducted to check for the means, maximum and minimum range and missing data for all variables. Means and standard deviation were used to examine data on research question one. The Brief RCOPE items were scored from 0 to 3 to represent "a great

deal of use to somewhat", respectively. A criterion mean of 1.5, which is the midpoint of the responses (0+1+2+3)/4, was used as the basis for judgment of the responses. Items with mean scores above 1.5 indicated a great deal of use of items, whereas items with mean scores below 1.5 also indicated somewhat use for items.

Multivariate Multiple regression analysis was used to analyse research question two to determine the effect of religious coping on respondent's psychological health. The Multivariate Analysis of Variance (MANOVA) was used to examine research hypothesis one to test if there are differences in religious coping styles with respect to respondents' religious background. Data on research hypothesis two was analysed by using Multivariate Analysis of Variance (MANOVA) to examine if there are differences in religious coping styles with respect to respondents' gender. Lastly, Hypothesis three and four were analysed using Moderation Analysis with PROCESS by Hayes to determine whether gender and religious background could moderate the relationship between religious coping and psychological health, respectively.

Chapter Summary

This chapter described the research methodology used for this study. A descriptive cross-sectional survey was employed to determine the influence of the two religious coping styles on HBV patients in the two selected hospitals. Under the instrumentation, Brief RCOPE, Beck Depression Inventory-II and Beck Anxiety Inventory were used and they were pilot-tested. Descriptive statistics and parametric test tools such as multivariate multiple regression and multivariate analysis of variance were used in testing research questions and hypotheses.

CHAPTER FOUR

RESULTS AND DISCUSSION

The main purpose of this study is to determine the influence of religious coping methods/styles on the psychological health of Hepatitis B patients. This chapter presents the results of the data collected from the field, and discussions of the results. The study intended to use a sample of 152 respondents, however, at the end of the data collection, 144 questionnaires were deemed appropriate, and this constitutes a response rate of 94.1%. The chapter is organized into two parts. The first part presents the results of the study, while the second part discusses the results.

Demographic Characteristics of Respondents

This section presents the demographic characteristics of respondents. The demographic information covered in this study includes gender, religious background and age. Details of the demographic information are presented in Table 1 and 2.

Table 1- *Demographic Characteristics of Respondents (n = 144)*

Variable	Frequency	Percentage (%)
Gender		
Male	64	44.4
Female	80	55.6
Religious background		
Orthodox	45	31.3
Pentecostal	47	32.6
Islamic	44	30.6
Traditionalist	8	5.6

Source: Field survey (2019)

As presented in Table 1, majority 80 (55.6%) of the respondents were females, 45 (31.3%) fellowshipped with Orthodox churches, 47 (32.6%) were Pentecostals, 44 (30.6%) were Muslims, while 8 (5.6%) were Traditionalists.

Table 2- *Distribution of respondents by Age*

Variables	**Frequency**	**Percentages**
Females		
Less than 20	1	1.3
20-29	13	16.3
30-39	25	31.3
40-49	22	27.5
50-59	12	15.0
60-69	6	7.5
70-79	1	1.3
Total	**80**	**100.0**
Males		
Less than 20	1	1.6
20-29	11	17.2
30-39	21	32.8
40-49	21	32.8
50-59	7	10.9
60-69	3	4.7
Total	64	100.0

Source: Field Survey (2019)

As presented in Table 2, in terms of female, majority of respondents were within the age groups of 30 and 39 years (32.8%) and in terms of male respondents', majority of them were within the age groups of 30 and 39 years (31.3%). The mean age of respondents was 40.5 years, with a standard deviation of 11.1.

Main Results

This section presents the main results. The results are presented in the order of the research questions and hypotheses.

Research Question 1

What are the types of religious coping styles/methods patients with Hepatitis B virus accessing medical care in Kumasi Metropolis make use of?

This research question sought to examine the types of religious coping methods among patients with Hepatitis B virus. Respondents were asked to respond to a 14-item on religious coping practices. A mean of 1.5 was used as the basis for decision which is the midpoint of the responses (0+1+2+3)/4. Mean scores above 1.5 depict endorsements of 'a great deal' whereas mean scores below 1.5 depict endorsements of 'somewhat' for the items. The responses of respondents are shown in Tables 3 and 4.

Table 3- *Positive Religious Coping*

Statements	*M*	*SD*
I looked for a stronger connection with God	2.28	.75
I asked forgiveness for my sins.	2.26	.85
I tried to see how God might be trying to strengthen me in this situation.	2.23	.79
I tried to put my plans into action together with God	2.13	.82
I sought for God's love and care	2.17	.78
I sought help from God in letting go of my anger.	1.95	.98
I focused on religion to stop worrying about my problems.	1.98	.83
Mean of means	*2.14*	*.83*

Source: Field work (2019)

As shown in Table 3, respondents showed a great deal of stronger connection with God (*M* = 2.28, *SD* = .75), forgiveness of sins (*M* = 2.26, *SD* = .85), saw what God might be trying to strengthen them in their situation (*M* = 2.23, *SD* = .79). Respondents also sought for God's love and care (*M* = 2.17, *SD* = .78), they sought God in letting go their anger (*M* = 1.95, *SD* = .98), and they focused on religion to stop worrying about problems (*M* = 1.98, *SD* = .83).

In all, it can be said that respondents sought connectedness with a Supreme being as a way of coping with their condition (*M* = 2.14, *SD* = .78).

Table 4- *Negative Religious Coping*

Statements	*M*	*SD*
I questioned God's love for me.	.66	.98
I wondered whether God had abandoned me.	.57	.91
I decided the devil made this happened.	.63	.99
I wondered what I did for God to punish me.	.78	1.02
I questioned the power of God.	.33	.74
I felt punished by God for my lack of devotion.	.90	1.16
I wondered whether my church had abandoned me.	1.14	1.18
Mean of means	*.72*	*1.00*

Source: Field work (2019)

From Table 4, respondents to a little extent: questioned God's love for them (*M* = .66, *SD* = .98), wondered whether God had abandoned them (*M* = .57, *SD* = .91), decided the devil made their condition happened (*M* = .63, *SD* = .99), wondered whether their churches have abandoned them (*M* = 1.14, *SD* = 1.18). In all, respondents did not blame/struggle with the Supreme for their condition (*M* = .72, *SD* = 1.00). Based on the results in Tables 2 and 3, it can be said that respondents frequently used more positive religious coping styles, they least used the negative religious coping styles.

Preliminary Analysis

This section presents results on the distributions of the various variables: positive religious coping, negative religious coping, depression, and anxiety. The normality assumption was tested using the normal Q-Q plot. Details of the distributions are presented in Figures 3 to 6.

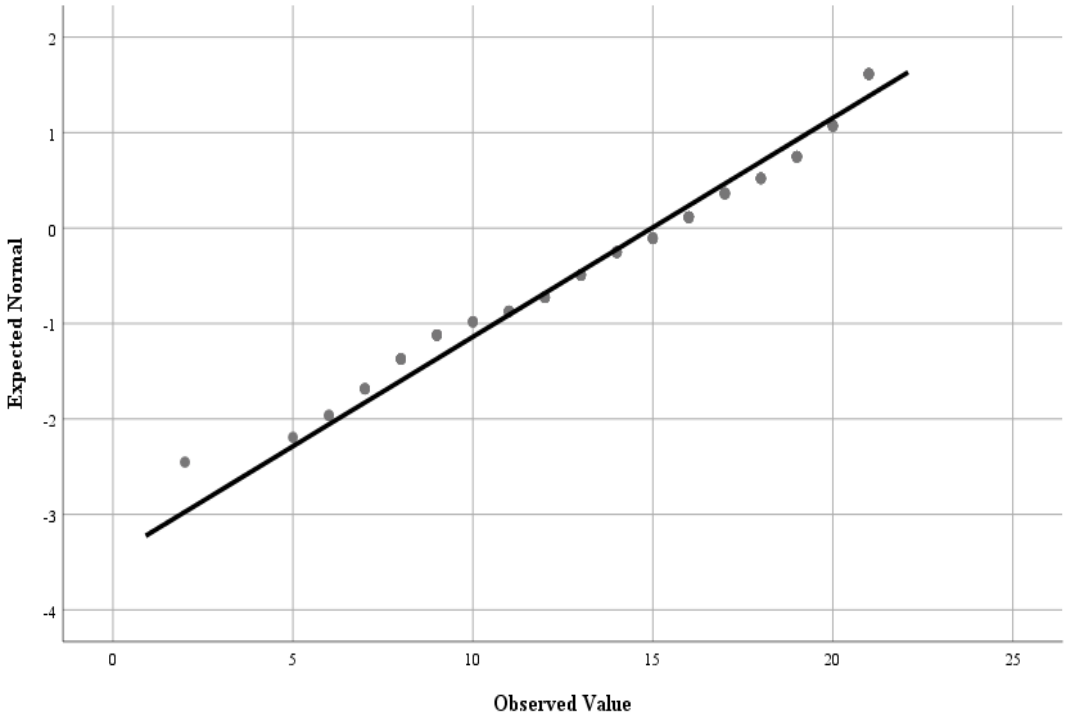

Figure 3- Normal Q-Q plot for positive coping

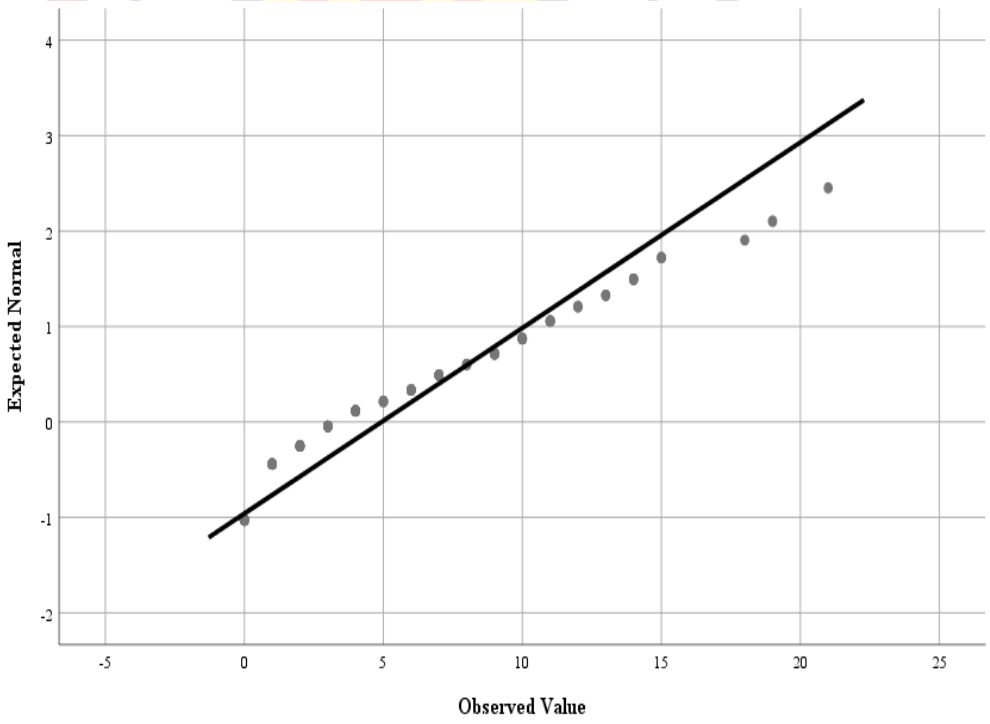

Figure 4- Normal Q-Q plot for negative coping

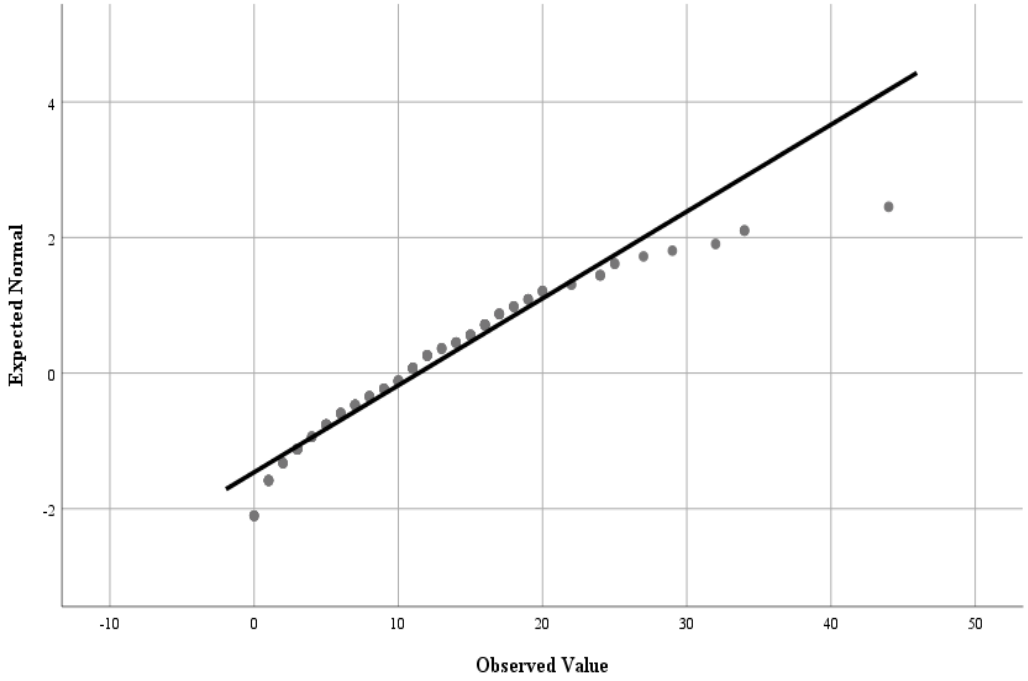

Figure 5- Normal Q-Q plot for depression

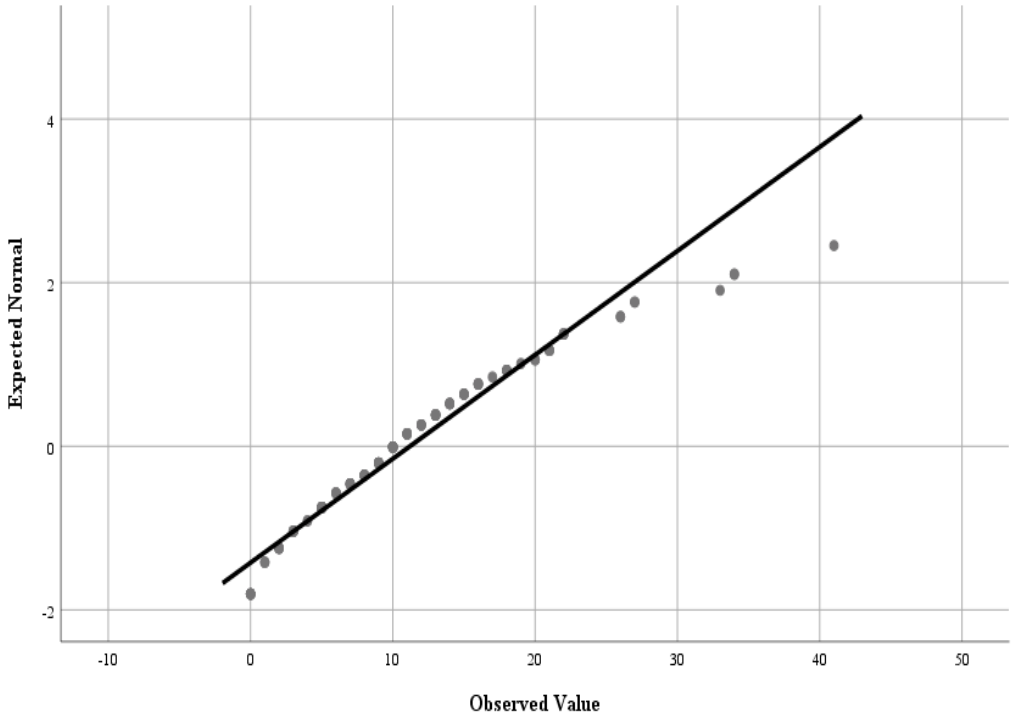

Figure 6- Normal Q-Q plot for anxiety

From Figures 3 to 6, for each variable, all the scores were very close to the straight line, and this indicates that the distributions were normal hence the parametric tests can be performed, wherever necessary.

Research Question 2

What impact does the use of religious coping styles have on psychological health of Hepatitis B patients in Kumasi Metropolis?

This research question aimed to determine the impact of religious coping on the psychological health of Hepatitis B patients. Data collected on this research question was tested using multivariate multiple linear regression analysis. The predictor variables were the dimensions of religious coping (negative religious coping and positive religious coping) using Brief RCOPE. The criterion variables were depression and anxiety which were measured using Beck's Depression Inventory (BDI-II) and Beck Anxiety Inventory (BAI) respectively. All the variables were measured on continuous basis. The results are presented in Tables 5 to 7.

Table 5- *Multivariate Model*

Effect	Test	Value	F	df1	df2	Sig.	Partial Eta Squared
Intercept	Pillai's Trace	.197	16.657*	2	136	.000	.197
	Wilks' Lambda	.803	16.657*	2	136	.000	.197
	Hotelling's Trace	.245	16.657*	2	136	.000	.197
	Roy's Largest Root	.245	16.657*	2	136	.000	.197
Positive coping	Pillai's Trace	.032	2.237*	2	136	.111	.032
	Wilks' Lambda	.968	2.237*	2	136	.111	.032
	Hotelling's Trace	.033	2.237*	2	136	.111	.032
	Roy's Largest Root	.033	2.237*	2	136	.111	.032
Negative coping	Pillai's Trace	.132	10.329*	2	136	.000	.132
	Wilks' Lambda	.868	10.329*	2	136	.000	.132
	Hotelling's Trace	.152	10.329*	2	136	.000	.132
	Roy's Largest Root	.152	10.329*	2	136	.000	.132

Source: Field work (2019); *Significant, $p < .05$

From Table 5, the multivariate test containing the positive religious coping as well as depression and anxiety was not statistically significant, Wilk's Lambda (Λ) = .97, $F(2, 136) = 2.37$, $p = .111$, partial eta squared = .03. The result implies that 3% of the variance in depression and anxiety was explained by positive religious coping. The multivariate model containing the negative religious coping as well as depression and anxiety was statistically significant, Wilk's Lambda (Λ) = .87, $F(2, 136) = 10.33$, $p < .001$, partial eta squared = .13. This result implies that negative coping explains 13% of the variance in depression and anxiety combined. Table 6 presents the univariate model using Bonferroni's alpha adjustment of .025.

Table 6- *Univariate Model*

Source	Dependent Variable	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	Depression[a]	2	551.785	10.273	.000	.130
	Anxiety[b]	2	509.417	9.190	.000	.118
Intercept	Depression	1	992.378	18.477	.000	.119
	Anxiety	1	1741.315	31.414	.000	.187
Positive coping	Depression	1	24.606	.458	.500	.003
	Anxiety	1	233.794	4.218	.042	.030
Negative coping	Depression	1	1025.483	19.093*	.000	.122
	Anxiety	1	675.918	12.194*	.001	.082
Error	Depression	137	53.710			
	Anxiety	137	55.432			
Total	Depression	140				
	Anxiety	140				

Source: Field work (2019); *Significant, $p < .025$
a. R Squared = .130 (Adjusted R Squared = .118)
b. R Squared = .118 (Adjusted R Squared = .105)

As indicated Table 6, in terms of positive religious coping, the model for both depression $F(1, 137) = .46$, $p = .500$, partial eta squared = .003; and anxiety, $F(1, 137) = 4.22$, $p = .042$, partial eta squared = .03, were not statistically significant. However, in terms of negative coping, the model for both depression $F(1, 137) = 19.09$, $p < .001$, partial eta squared = .12; and anxiety, $F(1, 137) = 12.19$, $p = .001$, partial eta squared = .08, were statistically significant. Table 7 presents the regression coefficients of the predictors.

Table 7- *Parameter Estimates for Positive and Negative Coping*

Dependent Variable	Parameter	*B*	Std. Error	*T*	Sig.
Depression	Intercept	10.236	2.381	4.298	.000
	Positive coping	-.097	.144	-.677	.500
	Negative coping	.532*	.122	4.370	.000
Anxiety	Intercept	13.560	2.419	5.605	.000
	Positive coping	-.299	.146	-2.054	.042
	Negative coping	.432*	.124	3.492	.001

Source: Field work (2019); *Significant, $p < .025$

As presented in Table 7, positive religious coping, though negative, does not significantly predict depression among Hepatitis B patients, $b = -.10$, $p = .500$. Negative religious coping, however, was a significant positive predictor of depression, $b = .53$, $p < .001$. The results imply that a unit increase in negative coping would lead to .53 increase in depression. This means that as respondents blame God for their condition, their level of depression increases. This suggests that their depression deteriorates when they begin to struggle with God for t heir condition.

The result further showed no significant influence of positive religious coping on the level of anxiety among Hepatitis B patients, $b = -.30$, $p = .042$.

In contrast, negative religious coping was a significant positive predictor of anxiety among Hepatitis B patients, b = .43, p = .001. The result means that a unit increase in negative religious coping would lead to .43 increase in anxiety. The implication of this result is that as respondents blame and attribute their condition to God, they become more anxious, and this deteriorates their psychological health.

In all, it can be said that negative religious coping significantly predicts psychological health among Hepatitis B patients. Positive religious coping, on the other hand, does not predict psychological health.

Hypothesis 1

H_0: There is no statistically significant difference in the religious coping styles used by Hepatitis B patient with respect to their religious background.

H_1: There is a statistically significant difference in religious coping styles used by Hepatitis B patients with respect to their religious background.

This hypothesis sought to determine whether HBV patients would differ in the extent to which they use religious coping. To test this hypothesis, one-way multivariate analysis of variance (one-way MANOVA) was used. The predictor variable was religious background, which had four levels: Orthodox, Pentecostal, Islamic, and Traditionalist. The criterion variables were positive religious coping and negative religious coping, which were measured on continuous basis. The results are presented in Tables 8 to 11.

The result of the Box's M plot showed a statistically significant covariance matrices of the dependent variables, M = 20.20, F(9, 4484.43) = 2.13, p = .024. This implies that the covariance is not equal, hence a violation

of the assumption. Having violated this assumption, Pillai's Trace instead of Wilk's Lambda test was performed. Table 8 presents the multivariate test.

Table 8- *Multivariate Test for differences in Religious Coping in terms of Religious Background*

Effect		Value	F	df1	df2	Sig.	Partial Eta Squared
Intercept	Pillai's Trace	.901	622.466	2	137	.000	.901
	Wilks' Lambda	.099	622.466	2	137	.000	.901
	Hotelling's Trace	9.087	622.466	2	137	.000	.901
	Roy's Largest Root	9.087	622.466	2	137	.000	.901
Religious background	Pillai's Trace	.234	6.085*	6	276	.000	.117
	Wilks' Lambda	.774	6.233	6	274	.000	.120
	Hotelling's Trace	.281	6.380	6	272	.000	.123
	Roy's Largest Root	.239	10.986	3	138	.000	.193

Source: Field work (2019); *Significant, $p < .05$

From Table 8, there is a statistically significant difference on the combined religious coping: positive religious coping and negative religious coping based on religious background, Pillai's Trace V = .234, $F(2, 6) = 6.09$, $p < .001$, partial eta squared = .12. The result implies that 12% of the variances in the combined religious coping was explained by religious background. Table 9 presents the results on the univariate tests using Bonferroni's alpha adjustment of .025.

Table 9- *Pillai's Trace Univariate Test for differences in Religious Coping in terms of Religious Background*

Source	Dependent Variable	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected	Positive coping	3	85.787	4.885	.003	.096
Model	Negative coping	3	152.947	6.423	.000	.123
Intercept	Positive coping	1	17275.715	983.691	.000	.877
	Negative coping	1	2563.673	107.66	.000	.438
Religious	Positive coping	3	85.787	4.885*	.003	.096
coping	Negative coping	3	152.947	6.423*	.000	.123
Error	Positive coping	138	17.562			
	Negative coping	138	23.813			
Total	Positive coping	142				
	Negative coping	142				

Source: Field work (2019); *Significant, $p < .025$

From Table 9, there is a statistically significant difference in positive religious coping in terms religious background, $F(3, 138) = 4.89$, $p = .003$, partial eta squared = .10. The result implies that religious background explained 10% of the variance in positive religious coping. Similarly, there is a significant difference in negative religious coping in terms religious background, $F(3, 138) = 6.42$, $p < .001$, partial eta squared = .12. Religious background explained 12% of the variance in negative religious coping. The results on positive and negative religious coping were followed using Games-Howell multiple comparisons with Bonferroni's alpha adjustment of .025. Table 10 presents the multiple comparisons.

Table 10- *Multiple Comparisons on Religious Coping (Games-Howell)*

Dependent Variable	(I) Religion	(J) Religion	Mean Difference (I-J)	Std. Error	Sig.
Positive coping	Orthodox	Pentecostal	-.89	.87	.733
		Islamic	1.92	.93	.173
		Traditionalist	3.39	2.24	.473
	Pentecostal	Orthodox	.89	.87	.733
		Islamic	2.81*	.80	.004
		Traditionalist	4.28	2.19	.283
	Islamic	Orthodox	-1.92	.93	.173
		Pentecostal	-2.81*	.80	.004
		Traditionalist	1.47	2.22	.909
	Traditionalist	Orthodox	-3.39	2.24	.473
		Pentecostal	-4.28	2.19	.283
		Islamic	-1.47	2.22	.909
Negative coping	Orthodox	Pentecostal	-.55	1.08	.956
		Islamic	3.34*	.97	.005
		Traditionalist	-2.01	2.86	.894
	Pentecostal	Orthodox	.55	1.08	.956
		Islamic	3.89*	.91	.000
		Traditionalist	-1.45	2.85	.954
	Islamic	Orthodox	-3.34*	.97	.005
		Pentecostal	-3.89*	.91	.000
		Traditionalist	-5.34	2.80	.302
	Traditionalist	Orthodox	2.01	2.86	.894
		Pentecostal	1.45	2.85	.954
		Islamic	5.34	2.80	.302

Source: Field work (2019); *Significant, $p < .025$

From Table 10, in terms of positive coping, there is a statistically significant difference between respondents from only Pentecostal and Islam ($p = .004$). However, there is no statistically significant difference among the other religious groups ($p > .05$). In terms of negative religious coping, there is a significant difference between Orthodox and Islam ($p = .005$) and Pentecostal and Islamic ($p < .001$).

Table 11- *Descriptive Statistics based on Religious Background*

Religious coping	Religion	Mean	Std. Deviation
Positive coping	Orthodox	15.52	4.57
	Pentecostal	16.40	3.54
	Islamic	13.59	4.08
	Traditionalist	12.13	6.03
Negative coping	Orthodox	5.74	5.24
	Pentecostal	6.30	5.01
	Islamic	2.41	3.56
	Traditionalist	7.75	7.78

Source: Field work (2019)

As shown in Table 11, it can be concluded that Pentecostals (M = 16.40, SD = 3.54) use more of positive religious coping than Muslims (M = 13.59, SD = 4.08). All the other religious groups equally used positive religious coping. It can be concluded that Pentecostals (M = 6.30, SD = 5.01) use more of negative religious coping than Muslims (M = 2.41, SD = 3.60). Similarly, Orthodox (M = 5.74, SD = 5.24) use more of negative religious coping than Muslims (M = 2.41, SD = 3.60). All the other religious groups, however, equally use negative religious coping.

Based on the results of this study, the null hypothesis that: "There is no statistically significant difference in the religious coping methods used by Hepatitis B patient with respect to their religious background" is rejected in favour of its alternative hypothesis.

Hypothesis 2

H_0: There is no statistically significant difference in religious coping styles used by Hepatitis B patients with respect to gender.

H_1: There is a statistically significant difference religious coping styles used by Hepatitis B patients with respect to gender.

The aim of this hypothesis was to test gender differences in the use of religious coping among patients living with HBV. One-way MANOVA was performed to test data collected on this hypothesis. The criterion variables were the two dimensions of religious coping: positive religious coping and negative religious coping. The predictor variable was gender, which has to levels: male and female. Results of this hypothesis are presented in Tables 12 to 14.

The Box's M test for covariance-variance matrices was not statistically significant, M = .56, $F(3, 3121384.63) = .18$, $p = .907$. This means the covariance-variance matrices are equal. Wilk's Lambda test for multivariate was then performed. The results are presented in Table 12.

Table 12- *Multivariate Test for differences in Religious Coping in terms of Gender*

Effect	Test	Value	F	df1	df2	Sig.	Partial Eta Squared
Intercept	Pillai's Trace	.932	953.331	2	139	.000	.932
	Wilks' Lambda	.068	953.331	2	139	.000	.932
	Hotelling's Trace	13.717	953.331	2	139	.000	.932
	Roy's Largest Root	13.717	953.331	2	139	.000	.932
Gender	Pillai's Trace	.027	1.949	2	139	.146	.027
	Wilks' Lambda	.973	1.949	2	139	.146	.027
	Hotelling's Trace	.028	1.949	2	139	.146	.027
	Roy's Largest Root	.028	1.949	2	139	.146	.027

Source: Field work (2019)

The results in Table 12 show no statistically significant difference on the combined religious coping on the basis of gender, Wilk's Lambda (Λ) = .97, $F(2, 139) = 1.95$, $p = .146$, partial eta squared = .03. This result implies that gender explained 3% of the variances in the combined religious coping. Using the Bonferroni's alpha of .025, the results on the univariate tests are presented in Table 13.

Table 13- *Univariate Test for Gender Differences in Religious Coping*

Source	Dependent Variable	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected	Positive coping	1	53.701	2.862	.093	.020
Model	Negative coping	1	18.524	.696	.406	.005
Intercept	Positive coping	1	31196.236	1662.383	.000	.922
	Negative coping	1	3438.524	129.182	.000	.480
Gender	Positive coping	1	53.701	2.862	.093	.020
	Negative coping	1	18.524	.696	.406	.005
Error	Positive coping	140	18.766			
	Negative coping	140	26.618			
Total	Positive coping	142				
	Negative coping	142				
Corrected	Positive coping	141				
Total	Negative coping	141				

a. R Squared = .020 (Adjusted R Squared = .013)
b. R Squared = .005 (Adjusted R Squared = -.002)
Source: Field work (2019)

As indicated in Table 13, there was no significant gender differences in the use of positive religious coping, $F(1, 140) = 2.86$, $p = .093$, partial eta squared = .02. The result implies that gender explained 2% of the variance in the use of positive religious coping among Hepatitis B patients. In a similar way, there was no significant gender difference in the use of negative religious

copings among Hepatitis B patients, $F(1, 140) = 2.86$, $p = .406$, partial eta squared = .01. The implication of the result is that, gender explains 1% of the variances in negative religious coping. Table 14 presents the descriptive statistics of respondents based on gender.

Table 14- *Descriptive Statistics based on Gender*

Religious coping	Gender	Mean	Std. Deviation
Positive coping	Male	14.32	4.32
	Female	15.56	4.34
Negative coping	Male	4.60	4.89
	Female	5.33	5.36

Source: Field work (2019)

From Table 14, it can be concluded that male ($M = 14.32$, $SD = 4.32$) and female ($M = 15.56$, $SD = 4.34$) equally use positive religious coping mechanisms. Similarly, male ($M = 4.60$, $SD = 4.98$) and female ($M = 5.33$, $SD = 5.36$) equally use negative religious coping.

Based on the result, I failed to reject the null hypothesis that: "There is no statistically significant difference in religious coping methods/styles used by Hepatitis B patients with respect to gender." This implies that Hepatitis B patients, irrespective of whether male or female, equally use both negative and positive religious coping.

Hypothesis 3

H_0: *Religious background will not moderate the relationship between religious coping and psychological health.*

H_1: *Religious background will moderate the relationship between religious coping and psychological health.*

The hypothesis sought to determine whether the relationship between religious coping and psychological health would be moderated by religious background of respondents. The hypothesis was tested using moderation analysis with PROCESS by Hayes, specifically, 5000 bootstrap samples was used for percentile bootstrap confidence intervals at 95% level of confidence. The predictor variable was religious coping, which has two dimensions: positive and negative coping. The criterion variable was psychological health that is depression and anxiety. The moderator variable, religious background was categorical with four levels: Orthodox, Pentecostal/Charismatic, Islam, and Traditionalist. The moderator variable was dummy coded. The results are presented in Tables 15 to 18.

Table 15- *Moderation Effect of Religious Background on the Relationship between Positive Religious Coping and Depression*

			Boot95%CI		Model Summary				
	B	*BootSE*	*LLCI*	*ULCI*	R^2	*F*	df1	df2	*p*
Constant	10.58	25.29	-13.47	52.95	.09	1.91	7	134	.073
X on Y	.45	1.55	-2.40	2.60					
W1 on Y	-.91	25.55	-43.05	23.11					
W2 on Y	11.56	26.80	-30.30	40.84					
W3 on Y	6.00	25.55	-36.10	30.03					
X*W1 on Y	-.47	1.57	-2.60	2.34					
X*W2 on Y	-1.03	1.63	-3.27	1.72					
X*W3 on Y	-.80	1.56	-2.92	1.96					
Unconditional interaction					ΔR^2	*F*	df1	df2	*P*
X*W					.027	1.33	3	134	.268

X- Positive religious coping; Y- Depression; W – Religious background; W1 – Islam; W2 – Pentecostal; W3 – Orthodox; Comparison group – Traditionalist

From Table 15, the model containing the predictor variable, the moderator variables, and the interaction terms was not statistically significant, $F(7, 134) = 1.91$, $p = .073$, $R^2 = .09$. It was further revealed that interaction between Islam and positive religious coping compared with Traditionalist was not a significant predictor of depression, b = -.47, *Boot95%CI* (-2.60, 2.34); interaction between Pentecostal and positive religious coping compared with Traditionalist was not a significant predictor of depression, b = -1.03, *Boot95%CI* (-3.27, 1.72); and lastly, interaction between Orthodox and positive religious coping compared with that of Traditionalist was not a significant predictor of depression, b = -.80, *Boot95%CI* (-2.92, 1.96). The result further showed that the interaction term contributed .03 (ΔR^2) additionally to the model, but this was not statistically significant ($p = .268$).

In effect, religious background did not significantly moderate the relationship between positive religious coping and depression. The moderation effect of negative religious coping was also determined and presented in Table 16.

Table 16- *Moderation Effect of Religious Background on the Relationship between Negative Religious Coping and Depression*

			Boot95%CI		Model Summary				
	B	*BootSE*	*LLCI*	*ULCI*	R^2	*F*	df1	df2	*P*
Constant	9.30	4.70	4.28	18.19	.19	4.43	7	133	<.001
X on Y	.86	.65	.29	3.31					
W1 on Y	.30	4.81	-8.98	5.78					
W2 on Y	1.44	5.16	-8.51	8.64					
W3 on Y	-2.56	4.84	-11.96	3.10					
X*W1 on Y	-.94	.73	-3.18	.13					
X*W2 on Y	-.55	.70	-2.84	.22					
X*W3 on Y	-.07	.67	-2.41	.63					
Unconditional interaction					ΔR^2	*F*	df1	df2	*P*
X*W					.05	2.48	3	133	.064

X- Negative religious coping; Y- Depression; W – Religious background; W1 – Islam; W2 – Pentecostal; W3 – Orthodox; Comparison group – Traditionalist

As presented in Table 16, the overall model containing the predictor variable, the moderator variables, and the interaction terms was statistically significant, $F(7, 133) = 4.43$, $p < .001$, $R^2 = .19$. The results further revealed that interaction between Islam and negative religious coping compared with Traditionalist was not a significant predictor of depression, b = -.94, *Boot95%CI* (-3.18, .13); interaction between Pentecostal and negative religious coping compared with Traditionalist was not a significant predictor of depression, b = -.55, *Boot95%CI* (-2.83, .22); and lastly, interaction between Orthodox and negative religious coping compared with that of Traditionalist was not a significant predictor of depression, b = -.07, *Boot95%CI* (-2.41, .63). The result further showed that the interaction term contributed .05 (ΔR^2) additionally to the model, but this was not statistically significant ($p = .064$).

From these results, religious background was not a significant moderator of the effect of negative religious coping on depression. The moderation effect of religious background on the relationship between religious coping and anxiety were examined. Tables 17and 18 present the results.

Table 17- *Moderation Effect of Religious Background on the Relationship between Positive Religious Coping and Anxiety*

			Boot95%CI		Model Summary				
	B	*BootSE*	*LLCI*	*ULCI*	R^2	*F*	df1	df2	*p*
Constant	11.25	31.83	-4.00	22.28	.12	2.68	7	136	.012
X on Y	.13	1.90	-.77	1.70					
W1 on Y	3.36	32.20	-15.27	18.79					
W2 on Y	21.10	32.37	4.13	38.72					
W3 on Y	1.88	32.01	-12.40	17.48					
X*W1 on Y	-.42	1.93	-2.13	.99					
X*W2 on Y	-1.37*	1.92	-3.11	-.11					
X*W3 on Y	-.30	1.91	-1.94	.86					
Conditional interaction					ΔR^2	*F*	df1	df2	*p*
X*W					.06	3.16	3	136	.027

X- Positive religious coping; Y- Anxiety; W – Religious background; W1 – Islam; W2 – Pentecostal; W3 – Orthodox; Comparison group – Traditionalist; *Significant, $p < .05$ level

As presented in Table 17, the model containing the predictor, the moderator variables, and the interaction terms was statistically significant, $F(7, 136) = 2.68$, $p = .012$, $R^2 = .12$. It was further found that interaction between Islam and positive religious coping compared with Traditionalist was not a significant predictor of anxiety, b = -.42, *Boot95%CI* (-2.13, .99); interaction between Pentecostal and positive religious coping compared with Traditionalist was a significant predictor of anxiety, b = -1.37, *Boot95%CI* (-3.11, -.11); and lastly, interaction between Orthodox and positive religious coping compared with that of Traditionalist was not a significant predictor of anxiety, b = -.30, *Boot95%CI* (-1.94, .86). The result further showed that the interaction term contributed .06 (ΔR^2) additionally to the model ($p = .027$).

Following the moderation effect of Pentecostals as a religious group on the relationship between positive religious coping and anxiety. The interaction was probed using the pick-a-point approach as shown in Figure 7.

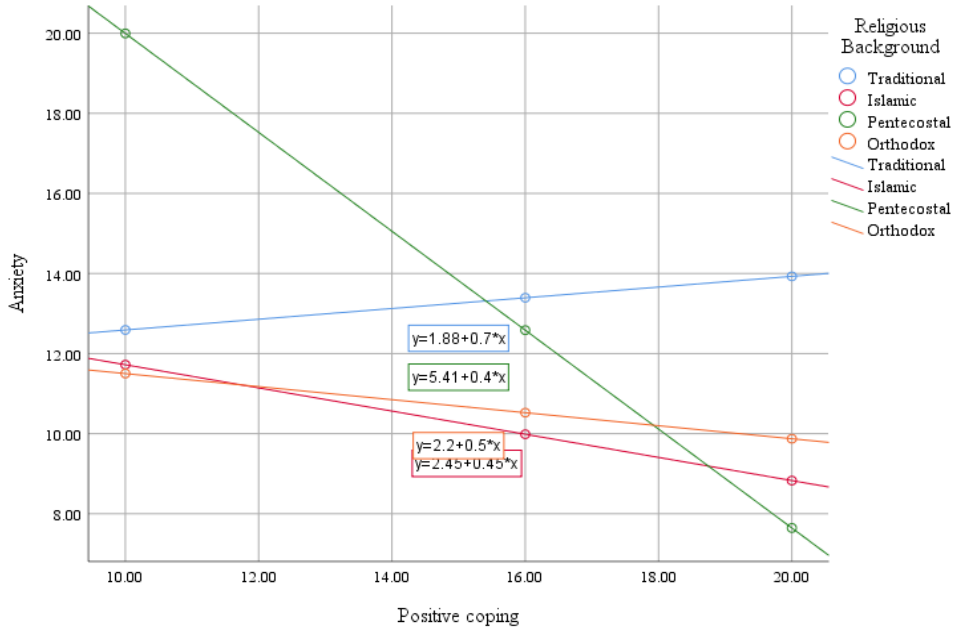

Figure 7- Moderation effect of religious background on the relationship between positive religious coping and anxiety

From Figure 7, first, the relationship between positive religious coping and anxiety was very strong for Pentecostal than for Traditionalist. In addition, the relationship between positive religious coping and anxiety was negative for Pentecostals, but positive for Traditionalist. This implies that as the positive coping for Pentecostals increases from 10 to 20, their level of anxiety also decreases from 20 to a little below 8. However, in the case of Traditionalist increases from 10 to 20, their level of anxiety rather increases from a little above 12 to 14. It can therefore be said that, as Pentecostals get a strong connection with God, their level of anxiety reduces, while as Traditionalists get a stronger connection with God, their level of anxiety increases. In effect, religious background moderates the relationship between positive religious coping and anxiety. The effect of negative religious coping on anxiety as moderated by religious background are presented in Table 18.

Table 18- *Moderation Effect of Religious Background on the Relationship between Negative Religious Coping and Anxiety*

			Boot95%CI		Model Summary				
	B	*BootSE*	*LLCI*	*ULCI*	R^2	*F*	df1	df2	*p*
Constant	10.87	6.24	3.50	21.53	.10	2.16	7	135	.041
X on Y	.26	.78	-.98	2.58					
W1 on Y	-.76	6.36	-11.95	6.95					
W2 on Y	-1.65	6.42	-12.97	6.21					
W3 on Y	-3.94	6.39	-14.86	4.09					
X*W1 on Y	-.02	.90	-2.18	1.82					
X*W2 on Y	.20	.81	-2.07	1.43					
X*W3 on Y	.38	.81	-1.83	1.58					
Unconditional interaction					ΔR^2	*F*	df1	df2	*p*
X*W					.01	.47	3	135	.702

X- Negative religious coping; Y- Anxiety; W – Religious background; W1 – Islam; W2 – Pentecostal; W3 – Orthodox; Comparison group – Traditionalist

As shown in Table 18, the model containing the predictor, the moderator variables, and the interaction terms was statistically significant, $F(7, 135) = 2.16$, $p = .041$, $R^2 = .10$. The result further revealed that interaction between Islam and negative religious coping compared with Traditionalist was not a significant predictor of anxiety, b = -.02, *Boot95%CI* (-2.18, 1.82); interaction between Pentecostal and negative religious coping compared with Traditionalist was not a significant predictor of anxiety, b = .20, *Boot95%CI* (-2.07, 1.43); and lastly, interaction between Orthodox and negative religious coping compared with that of Traditionalist was not a significant predictor of anxiety, b = .38, *Boot95%CI* (-1.83, 1.58). The result further showed that the interaction term contributed .01 (ΔR^2) additionally to the model ($p = .702$). This result implies that religious background was not a significant moderator of the effect of negative religious coping on anxiety.

Summing up the results in Tables 15 to 18, it can be said that religious background moderates only the relationship between positive religious coping and anxiety but not depression. It does not also moderate the relationship between negative religious coping and depression or anxiety. Based on this result, the null hypothesis that "Religious background will not moderate the relationship between religious coping and psychological health," was rejected in favour of its alternative hypothesis.

Hypothesis 4

H_0: *Gender will not moderate the relationship between religious coping and psychological health.*

H_1: *Gender will moderate the relationship between religious coping and psychological health.*

The aim of this hypothesis was to determine the moderation role of gender in the relationship between religious coping and psychological health. The hypothesis was tested using moderation analysis with PROCESS by Hayes specifically, 5000 bootstrap samples was used for percentile bootstrap confidence intervals at 95% level of confidence. The predictor variable was religious coping, which has two dimensions: positive and negative coping. The criterion variable was psychological health that is depression and anxiety. The moderator variable was gender, which had two levels that is male and female. The moderator variable was dummy coded, where male was used as the reference group. The results are presented in Tables 19 to 22.

Table 19- *Moderation Effect of Gender on the Relationship between Positive Religious Coping and Depression*

			Boot95%CI		Model Summary				
	B	*BootSE*	*LLCI*	*ULCI*	R^2	*F*	df1	df2	*p*
Constant	8.76	3.61	1.49	15.41	.04	1.86	3	138	.140
X on Y	.17	.23	-.26	.65					
W1 on Y	9.66*	4.75	.995	19.77					
X*W1 on Y	-.62*	.29	-1.23	-.08					
Conditional interaction					ΔR^2	*F*	df1	df2	*p*
X*W					.03*	4.16	1	138	.043

X- Positive religious coping; Y- Depression; W – Gender; W1 – Female; Comparison group – Male; *Significant, $p < .05$ level

The model containing the predictor, the moderator variables, and the interaction terms was not statistically significant, $F(3, 138) = 1.86$, $p = .140$, $R^2 = .04$ (see Table 19). It was further found that interaction between female and positive religious coping compared with male was a significant predictor of depression, b = -.62, *Boot95%CI* (-1.23, -.08). The result further showed that the interaction term contributed .03 (ΔR^2) additionally to the model ($p = .043$). The interaction effect was probed using the pick-a-point approach. Figure 8 presents the nature of the interaction.

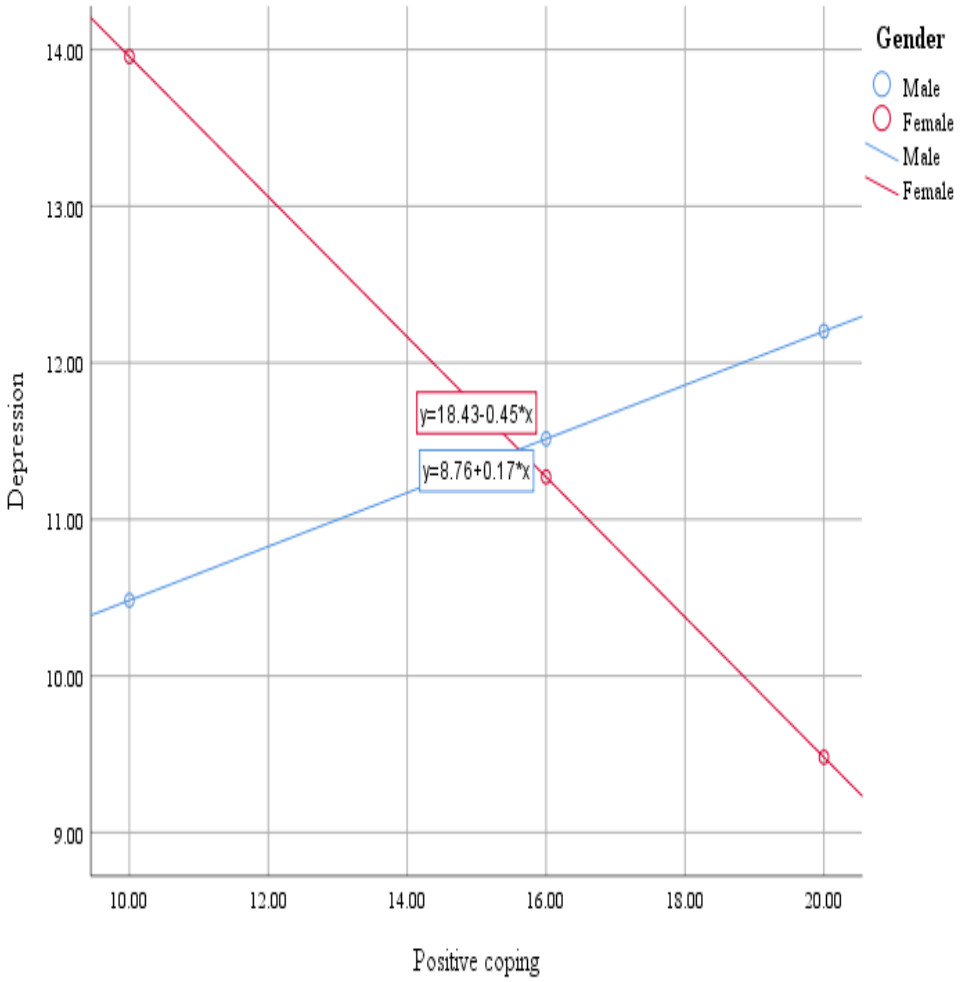

Figure 8- Moderation effect of gender on the relationship between positive religious coping and depression

As depicted in Figure 8, the relationship between positive coping and depression was negative for females, but positive for males. This implies that, males are more likely to suffer depression than their female counterparts when both use positive religious coping styles. Based on this result, it can be said that gender moderates the relationship between positive religious coping and depression.

The relationship between negative religious coping and depression was explored, while gender moderated. Details of the results are presented in Table 20.

Table 20- *Moderation Effect of Gender on the Relationship between Negative Religious Coping and Depression*

			Boot95%CI		Model Summary				
	B	*BootSE*	*LLCI*	*ULCI*	R^2	*F*	df1	df2	*p*
Constant	9.85	1.20	7.62	12.35	.14	7.68	3	137	<.001
X on Y	.31	.18	-.07	.65					
W1 on Y	-1.99	1.43	-4.91	.71					
X*W1 on Y	.39	.24	-.08	.87					
Unconditional interaction					ΔR^2	*F*	df1	df2	*p*
X*W					.02	2.53	1	137	.114

X- Negative religious coping; Y- Depression; W – Gender; W1 – Female; Comparison group – Male

As shown in Table 20, the model containing the predictor, the moderator variables, and the interaction terms was statistically significant, $F(3, 137) = 7.68$, $p < .001$, $R^2 = .14$. The result further indicated that interaction between female and negative religious coping compared with male was not a significant predictor of depression, b = .39, *Boot95%CI* (-.08, .87). The result further showed that the interaction term contributed .02 (ΔR^2) additionally to the model ($p = .114$). Based the foregoing result, it can be concluded that gender does not significantly moderate the relationship between negative religious coping and depression.

The relationship between positive religious coping and anxiety was explored while gender was moderated. Details of the results are presented in Table 21.

Table 21- *Moderation Effect of Gender on the Relationship between Positive Religious Coping and Anxiety*

			Boot95%CI		Model Summary				
	B	*BootSE*	*LLCI*	*ULCI*	R^2	*F*	df1	df2	*p*
Constant	13.07	2.98	7.35	19.29	.06	2.87	3	140	.039
X on Y	-.10	.22	-.54	.33					
W1 on Y	6.62	4.62	-2.15	15.61					
X*W1 on Y	-.46	.30	-1.04	.11					
Unconditional interaction					ΔR^2	*F*	df1	df2	*p*
X*W					.02	2.38	1	140	.125

X- Positive religious coping; Y- Anxiety; W – Gender; W1 – Female; Comparison group – Male

From Table 21, the model containing the predictor, the moderator variable, and the interaction terms was statistically significant, $F(3, 140) = 2.87$, $p = .039$, $R^2 = .06$. It was further found that interaction between female and positive religious coping compared with male was not a significant predictor of anxiety, b = -.46, *Boot95%CI* (-1.04, .11). The result further showed that the interaction term contributed .02 (ΔR^2) additionally to the model ($p = .125$). This result implies that gender did not significantly moderate the relationship between positive religious coping and anxiety. The relationship between negative religious coping and anxiety was explored while gender was moderated. The details of the results are presented in Table 22.

Table 22- *Moderation Effect of Gender on the Relationship between Negative Religious Coping and Anxiety*

			Boot95%CI		Model Summary				
	B	*BootSE*	*LLCI*	*ULCI*	R^2	*F*	df1	df2	*p*
Constant	10.73	1.28	8.27	13.34	.11	5.55	3	139	.001
X on Y	.19	.16	-.13	.50					
W1 on Y	-3.08*	1.55	-6.18	-.10					
X*W1 on Y	.43	.23	-.01	.90					
Unconditional interaction					ΔR^2	*F*	df1	df2	*p*
X*W					.02	2.97	1	139	.086

X- Negative religious coping; Y- Anxiety; W – Gender; W1 – Female; Comparison group – Male; *Significant, $p < .05$ level

As shown in Table 22, the model containing the predictor, the moderator variable, and the interaction term was statistically significant, $F(3, 139) = 5.55$, $p = .001$, $R^2 = .11$. The results further showed that interaction between females and negative religious coping compared with males was not a significant predictor of anxiety, b = -.43, *Boot95%CI* (-.01, .90). The interaction term contributed .02 (ΔR^2) additionally to the model ($p = .086$). The result implies that gender did not significantly moderate the relationship between negative religious coping and anxiety.

Summing up the results in Tables 19 to 22, it can be said that gender significantly moderated only on the relationship between positive religious coping and depression but not on anxiety. Gender does not also moderate the relationship between negative coping and psychological health (depression and anxiety).

Discussion of Research Findings

The findings are discussed in relation to the following objectives.

1. The types of religious coping styles HBV patients use.
2. Impact of religious coping styles on the psychological health of HBV patients.
3. Differences in religious coping styles used by HBV patients with respect to religious background.
4. Differences in religious coping styles used by HBV patients with respect to gender.
5. Religious background as a moderator between religious coping and psychological health.
6. Gender as a moderator between religious coping and psychological.

The types of Religious Coping Styles Patients with HBV use

The result of research question one shows that majority of respondents used more frequently positive religious coping practice than the negative religious coping practices. Respondents showed a great deal of stronger connection with God (*M* = 2.28, *SD* = .75), saw how God might be trying to do strengthen them in their situation (*M* = 2.23, *SD* = .79), they sought God in letting go of their anger (*M* = 1.95, *SD* = .98), and they focused on religion to stop worrying about problems (*M* = 1.98, *SD* = .83). This suggests that most HBV patients are coping well with their condition using the appropriate religious coping style.

Although most studies (example, Olson et al., 2012; Ramirez et al., 2012) using Brief RCOPE do not indicate the prevalence rate of the usage of positive and negative religious coping, the current study finding corroborates with the study of Cummings and Pargament (2010). Findings from their work revealed that generally, patients' samples make use of positive religious coping style frequently than negative religious coping. The study again was found to be consistent with the findings of Ai et al. (2010). They reported that patients used negative religious coping styles to a lesser extent than positive religious coping. This suggests that patients used both styles but use more of the positive religious coping and less of negative religious coping and it was similarly demonstrated among respondents of the current study.

The current finding again is in line with the outcome of the study of Cotton et al. (2006). They found that 339 out of 400 HIV/AIDS patients used positive religious coping more often than negative religious coping. Patients specifically endorsed a great deal use of the following items within the

positive religious coping "looked for a stronger connection with God, sought God's love and care and try to see how God can strengthen them in their situation". In the negative religious coping, most patients also used a great deal of items which included "I decided the devil made this happened and I wondered whether God had abandoned me". These choices of patients in the previous study in terms of items within the positive and negative religious coping similarly reflect the choices of respondents in the current study.

The current study is also compatible with the findings of Hebert, et al. (2009). Seventy-Six percent of the selected cancer sample used positive religious coping and 15% used negative religious coping. Most participants were seen using positive religious coping in this study because it serves as a good coping mechanism to deal with psychological distress and help patients to find a sense of purpose in life after being diagnosed with a terminal disease (Lee & Nezu, 2012).

Again, most respondents frequently used positive religious coping which in turn promote their psychological health and this finding agrees with the study of Cotton et al. (2006) which revealed that the usage of positive religious coping promotes and enhances good psychological wellbeing, and it also buttresses the study of Pargament (2011) who reported that positive religious coping help reduce psychosomatic symptoms and promotes greater spiritual growth after dealing with the stressors.

Most patients were hardly seen reporting on their negative religious coping practices which turns to suggest low endorsement of this form of religious coping style. This finding was demonstrated in the work of Exline et al. (2012). They indicated that most people fail to report on their negative

religious coping styles since most respondents saw it as morally wrong to struggle with God.

Impact of Religious Coping Styles on Psychological Health of HBV Patients

Findings of research question two revealed that negative religious coping was a positive predictor of anxiety and depression respectively (b = .43, p = .001, b = .53, p <.001) but positive religious coping was not a predictor of anxiety and depression respectively (b = -.30, p = .042, b = -.10 p = .500) among respondents. This implies that the more respondents continue to struggle with the Supernatural for their condition, their level of depression and anxiety increases. This again suggests that respondents' psychological health deteriorates when they use more of the negative religious coping styles. Further, it can affect their health adversely and disturb their medical treatment and finally increases mortality (Pargament, Koenig, Tarakeshwar, & Hahn, 2001; Koenig, 2012).

The finding of the current study echoes similar findings recorded by Fatemeh (2013). Their study revealed that cancer patients who used negative religious coping had their level of depression increased, suggesting that positive religious coping has a higher efficacy in reducing depression since patients that employed that technique got their level of depression decrease. Olson et al. (2012) findings that positive religious coping was a good predictor of better mental health and negative religious coping as a disturbing factor for mental health buttresses the findings of current study which indicated that positive religious coping was negatively associated with depression and anxiety but negative religious coping was a predictor of poor mental health

(depression and anxiety).

Similarly, the current result is compatible with the finding of Santos, et al. (2017) among renal diseases patients. Positive religious coping was found to be higher among non-depressed patients than depressed patients. This suggests that depression is correlated to negative religious coping and not positive religious coping. Notwithstanding, similar findings have been demonstrated in the study of Ramirez et al. (2012). In their study, negative religious coping was independently associated with higher levels of both anxiety and depressive symptoms while greater use of positive religious coping was found to be associated with better psychological health (depression and anxiety).

Differences in the Religious Coping Methods used by HBV Patient with respect to their Religious Background

Results from hypothesis one indicate that there was a significant difference in the religious coping methods used by Hepatitis B patient with respect to their religious background. It was revealed that Pentecostals (M = 16.40, SD = 3.54) use more of positive religious coping than Muslims (M = 13.59, SD = 4.08) and again Pentecostals (M = 6.30, SD = 5.01) use more of negative religious coping than Muslims (M = 2.41, SD = 3.60). Similarly, Orthodox (M = 5.74, SD = 5.24) use more of negative religious coping than Muslims (M = 2.41, SD = 3.60). All the other religious groups, however, used negative and positive religious coping in a way. This implies that irrespective of the respondents' religious background, they employed religion as a tool to cope with their condition. The Orthodox unlike the Pentecostals used more of negative religious coping purposely because of their less involvement in

religious services/activities, reading of religious materials, praying less, their expression of low level of religiosity which was not so among Pentecostals that used more of positive religious coping (Taylor, chatters, Mattis & Joe, 2010).

The result of the current finding is compatible with the study of Quayesi-Amakye (2013). The study indicated that Ghanaian Pentecostals recognize the spiritual roots of certain diseases that they also recognize to heal the psychological and medical aspect of the diseases. Some Pentecostal churches give their members free medical counselling and advisory services, and it is observed that such services help to guide beneficiaries in the adoption of proper and appropriate health measures. This may account for the reasons why most HBV patients who are Pentecostals were seen using more of both religious coping styles than their counterparts from other religious affiliation. It also implies that the spiritual needs of respondents are met by the usage of religious coping. This is because religion provides resources to cope with the stress that can boost the frequency of favourable feelings and reduce the probability of emotional disorders such as depression and anxiety disorder (Koenig, 2012).

Pentecostals were seen more of using positive religious coping which in turn promote good psychological health (depression and anxiety) as revealed. This confirmed the findings of Newport, Agrawal and Witters (2010). They discovered a link between high religious involvement (praying, attending church, and other more) and low levels of negative emotions (depression and anxiety) which tends to imply that they will use more of religious coping tools. Newport et al. (2010) established that high religious

people often tend to use religion as a coping tool to deal with distress. Less depressive symptoms, less emotional distress and good psychological adjustment are also found in individuals who are religious (Hood, Hill, & Spilka, 2009). This also implies that similar results may be recorded for all HBV respondents from a different religious background (Islam, Orthodox and others) that also used positive religious coping. The high usage of positive religious coping by Pentecostals than Muslim is also supported by Bonelli et al. (2012). They reported that Pentecostals experience a high degree of depression than other religious affiliation. The Pentecostals experience more depression may be due to people with emotional problems self-selecting themselves into Pentecostals groups because of the latter's strong focus on overcoming emotional problems (Sethi & Seligman, 1993, as cited by Bonelli, Dew, Koenig, Rosmarin & Vasegh, 2012). This explained why most Pentecostals adopted more usage of both religious coping styles than other religious affiliation groups in other to help them deal with their psychological distress.

The results are consistent again with the findings of Chatters et al. (2008). They reported that Pentecostals used more of religious coping than Baptists (orthodox). This is because persons with a good religious background can develop good meaning or understanding towards stressful situation since their religious background serves as a better coping tool and enhances good psychological adjustment (Hood, Hill & Spilka, 2009; Park, 2005). Chatters and colleagues explained that Pentecostals attend religious services, read more of religious materials and prayed more frequently and also expressed higher level of religiosity than Baptist as a religious group. Pentecostals again may be

seen using more of positive and negative religious coping than Muslims in this study because Gallup poll data (Newport, 2006) has established that Pentecostals generally are engaged in a high level of religious participation (praying, reading of religious materials/literature, meditations and fasting). Religious involvement allows the user the opportunity to use religion as a coping tool or strategy to fight stressors in relation to health and challenges, helps individuals in their pursuit of the meaning of life (Koenig 2012; Siegel, Anderman & Schrimshaw, 2001).

Differences in Religious Coping Styles used by HBV Patients with respect to Gender

The results from hypothesis two revealed that there was no statistical significant difference in religious coping styles used by HBV patients with respect to gender. This implies that HBV patients, irrespective of whether male or female, equally use both negative and positive religious coping. The results although indicated no significant difference, similar findings were demonstrated in some studies. For instance, Ried-Arndt, et al. (2011) reported that there was no gender difference found in the usage of religious coping and this is found to be compatible with current findings which indicates that there was no gender difference in religious coping styles. This suggests that HBV patients were willing to use religious coping to deal with their psychological distress despite the differences that have been established within religion that women are usually found to be more religious than men and most likely to use religious coping differently (Francis, 1997; Gallup & Lindsay, 1999).

The findings again were found to be consistent with the work of Park, et al. (2017). They found that there was no difference between gender with

respect to their endorsement of positive and negative religious coping. This finding is noteworthy when considered in the context of previous research because despite its ability to buttress some other findings it also deviates from some findings that revealed that women use more religious coping than men (Gemmell et al., 2016, Maselko & Kubzansky 2006; World Values Survey, 2006; Ozorak, 1996). A possible explanation for these inconsistencies is that the other studies that revealed that there were differences had primarily used participants with no major health conditions, where the current study used a sample of individuals with chronic diseases. The difference in sample size also contributed to the discrepancy recorded in the usage of the religious coping tool with respect to their gender differences.

Religious Background as a Moderator between Religious Coping and Psychological health

Results from this hypothesis revealed that religious background moderated the relationship between religious coping and psychological health. It was further revealed that religious background moderated only the relationship between positive religious coping and anxiety and not on depression. This means that, as Pentecostals get a strong connection with God, their level of anxiety reduces, while as Traditionalists/others get a stronger connection with God, their level of anxiety increases following the significant interaction between Pentecostal and positive religious coping compared with Traditionalist/other as a significant predictor of anxiety. It was revealed that religious background was not a significant moderator of negative religious coping on anxiety and depression.

Despite its limited moderating role, it was found to be consistent with the

findings of Tix and Fraizer (1998). They found out that religious affiliation/religious background moderated the use of religious coping and psychological health (anxiety, depression, hostility) such that religious coping was more effective in promoting adjustment for stressful life events. The moderating role was effective for Protestants in Tix and Fraizer study and so it was for this current study. In the current study, religious background moderated only the relationship between religious coping (positive religious) and anxiety but in Tix and Fraizer study it was reported to moderate all the psychological distress (depression and anxiety and hostility), this discrepancy may be due to differences in the instruments used in measuring both religious coping (adapted Carver and Pargament religious coping tool) and psychological health (Brief Symptoms Inventory). Religious background is therefore noted to be one of the social factors that can moderate the relationship between religious coping and psychological health, this finding buttresses the results of Chatters et.al. (2008) they indicated that individuals without religious background are less likely to endorse religious coping. Pentecostals as a religious affiliation was seen to moderate the relationship between religious coping and psychological health because they are found to experience a high rate of psychological distress than other religious affiliation. They therefore draw more strength from their religious background as Pentecostals to deal with their mental health issues (Bonelli, Dew, Koenig, Rosmanin & Vasegh, 2012; Dein & Littlewood, 2008).

Religious affiliation allows the user to use religion as a coping tool or strategy to fight stressors in relation to health and life challenges. It also helps individuals in their pursuit of meaning of life (Koenig 2012). This supports

the findings of the current study where Pentecostals patients who used positive religious coping were able to cope well with their level of anxiety as compared to their counterparts from traditionalists/other religion. This suggests that HBV patients who are Pentecostals should be encouraged to use more positive religious coping in dealing with their anxiety. Other religious affiliation similarly can be encouraged to learn to draw more strength from their religion in dealing with their anxiety, because it is established that individuals with a good religious background can develop good meaning or understanding towards stressful situation since their religious background serves as a better coping tool (Park, 2005).

Gender as a moderator between religious coping and psychological health

Results from the fourth hypothesis revealed that gender significantly moderated the relationship between positive religious coping and depression. It further revealed that gender moderated only positive religious coping and depression and not anxiety. Gender was not a significant moderator on negative religious coping and anxiety or depression. The relationship between positive coping and depression was negative for females but positive for males. The current finding is in line with previous research conducted by Krause et al. (2018). They reported that gender is one of several social factors that have been shown to influence the relationship between religion and health and it was so for this study where gender was found to influence the relationship between females and depression and that of males and depression. The results of the current findings supported the findings of Perez, et al. (2008). They found out that gender moderated the relationship between spirituality and depressive symptoms among students. The current study findings indicated

that gender moderated only positive religious coping and depression and not anxiety as well as negative religious coping and psychological health (anxiety and depression). Perez and colleagues did not indicate which of the religious coping styles that gender moderated on its relationship with their psychological distress variables within their work. This discrepancy may be due to differences in the research tools employed in both studies. Perez and colleagues used the Index of Core Spiritual Experiences (INSPIRIT) in measuring spirituality in their work, while the current work used Brief RCOPE. The Index of Core Spiritual Experiences is a 7-item scale measuring the occurrence of experiences that convinces a person God exists and evoke feelings of closeness with God and including the perception that God dwells within. While the Brief RCOPE is a 14-item scale measuring religious coping with major life stressors.

Prati and Pietrantoni's (2009) findings that gender was a significant moderator for religious coping and posttraumatic growth was also found to corroborate with current findings. Prati and Pietrantoni reported that religious coping was more beneficial for women as it was for females in this current study. The more connected they get to God and seek His love, the more their level of depression goes down. On the other hand, for males, as they use more of positive religious coping, their level of depression to some extent increases. This may be due to differences in how both sexes view God. Females view God as a healer and hold a positive image about God, but men focus on God's power and judgement which in turn may affect them even though using positive religious coping (Ozorak, 1996).

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This chapter involves the summary, conclusion and recommendation in relation to the findings of the study.

Summary

This study examined the influence of religious coping styles (positive and negative) on the psychological health (anxiety and depression) of individuals living with Hepatitis B virus in Kumasi Metropolis. The research employed the descriptive cross-sectional survey. Two hospitals (Komfo Anokye Teaching Hospital and South Suntreso Government Hospital) were selected for this research and stratified sampling was used to share among the two hospitals 110 for Komfo Anokye and 43 for South Suntreso Hospital. A sample size of 144 was finally used across the two hospitals using the purposive and convenience sampling method. The Brief RCOPE scale was used to collect data on the of positive and negative religious coping styles and the Beck Depression Inventory-II and Beck Anxiety Inventory were also used in measuring participants levels of depression and anxiety respectively.

Key Findings

Various findings either confirmed or deviated from the various literature reviews conducted in this research. Key findings in the research included:

a. It was realized that respondents use more of positive religious coping practices frequently including looking for a stronger connection with

God, forgiveness of sins, saw how God will strengthen them in their situation. Sought God's love and care, they sought help from God in letting go their anger and they focused on religion to stop worrying about their problems.

b. In all, it was found that negative religious coping inversely affected the psychological health (depression and Anxiety) of respondents as it positively predicted poor psychological health. Positive religious coping also affected respondent's psychological health by decreasing their level of depression and anxiety as it was negatively associated with poor psychological health.

c. It was discovered that Pentecostals use more of positive religious coping than Muslims. All the other religious groups equally used positive religious coping. It was also revealed that Pentecostals use more of negative religious coping than Muslims. Similarly, Orthodox also used more of negative religious coping than Muslims. All the other religious groups, however, also use some form of negative religious coping.

d. Gender did not significantly indicate difference in religious coping method used by Hepatitis B patients. It was found that male and female equally use positive religious coping mechanisms. Similarly, male and female equally use negative religious coping.

e. Religious background significantly moderated the relationship between religious coping and psychological health. It was further revealed that religious background moderates only the relationship between positive religious coping and anxiety. It however does not moderate

the other relationships. That is positive religious coping and depression, negative religious coping and depression or anxiety.

f. It was revealed that gender moderated the relationship between positive religious coping and depression. The relationship between positive coping and depression was negative for females but positive for males. It however does not moderate the other relationship. That is positive religious coping and anxiety, negative religious coping and depression or anxiety.

Conclusions

It has been evident that people living with HBV exhibits high level of depression and anxiety. Religious coping plays a cardinal role in dealing with life challenges associated with living with HBV. The type of religious coping adopted by person living with Hepatitis B virus is associated with the level of depression and anxiety they will experience. The usage of positive religious coping style (partnering with God, looking for strong connection with God, searching for meaning and purpose form the supernatural, looking at how God will strengthen the user) were seen contributing to very good psychological health of person living with Hepatitis B virus in this study. The reappraising of the stressors to be a punishment from the supernatural, reappraising the stressor to be caused by evil spirits, blaming the supernatural, and struggling with the supernatural was seen leading to poor psychological health (depression and anxiety) of patients living with Hepatitis B Virus. Therefore, to achieve ideal Hepatitis B care, all HBV patients should pay good attention to the type of religious coping styles they adopt to cope with the psychological distress.

To sum it up, the findings of the study serve as the basis for future studies as there are no studies conducted in our Ghanaian context focusing solely on the influence of religious coping on the psychological health of HBV patients.

Recommendations

Based on the findings and implications drawn from the study, it is recommended that:

1. Health care professionals attending to health needs of HBV patients should always inquire/assess the religious beliefs and the type of religious coping style their patients adopt to cope with their condition. This will help them to know and understand their coping tools and its impact on their treatment, and psychological health.
2. Professionals in the Health sector should be encouraged to make referrals to the appropriate professionals especially to clinical health psychologist, counsellors, pastors and other paraprofessionals. This will help HBV patients who use negative religious coping styles to deal with their psychological health and to receive proper treatment such as psychotherapy, counselling, psychoeducation and other more.
3. Professionals who work with HBV patients should encourage them to adopt the rightful and appropriate religious coping styles in dealing with their condition in order to promote good mental and physical health. Clinical health psychologists, counsellors and other paraprofessionals should always acknowledge and integrate religious coping strategies into psychotherapy and counselling.

4. The Ministry of Health and Ghana health service should make provisions for counselling (pretest and post counselling) for HBV patients in all health care centres.

Suggestions for Further Research

1. It is recommended that the study should be replicated in another metropolis in different regions of the country with increase sample size to observe possible changes or similarity of findings.
2. Gender and religious background were found to be moderating the relationship between religious coping and psychological health. It may be expedient to research into social support and age, educational level as other specific factors that may influence the usage of religious coping.
3. A similar study should be conducted among HBV patients receiving health care from traditional healers or herbal medicine. This can help us to compare the type of religious coping styles adopted by patients using orthodox medicines and those using herbal medicine.
4. Questionnaire was the only instrument used in soliciting information from respondents. Going forward, interview guide should be employed to cater for information that the questionnaire could not cover to give as more understanding of the phenomenon.

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APPENDICES

APPENDIX A

QUESTIONNAIRES

UNIVERSITY OF CAPE COAST

DEPARTMENT OF EDUCATION AND PSYCHOLOGY

INFORMED CONSENT FORM

Participant Information Leaflet and Consent Form

Title: Influence of Religious Coping Styles on the Psychological Health of Hepatitis B Patients in Kumasi Metropolis.

Principal Investigator: Godwin Osei Boateng

Address: University of Cape Coast

General Information about Research

Religion plays significant role in the life of Africans and Ghanaians especially when dealing with challenging/stressful situations. It is noted to be one the ways some Hepatitis B patients cope their stress. Studies have revealed that Psychological problems such as anxiety and depression are prevalent among patients with chronic HBV infection. Hence this study involves a research to assess the influence of religious coping styles on the psychological health of Hepatitis B patients in some selected hospitals in the Kumasi Metropolis.

Purpose(s) of research:

The main purpose of this study is to determine the influence of religious coping methods/styles on the psychological health of Hepatitis B patients. Specifically, the study intends to:

1. Determine the types of religious coping methods/styles used by Hepatitis B patients in the Kumasi Metropolis.

2. Ascertain if there is any statistically significant difference in Hepatitis B patient religious coping style with respect to their religious background.
3. Ascertain if there is any statistically significant difference in Hepatitis B patient religious coping style with respect to their gender.
4. Determine if religious background will moderate the association between religious coping styles and psychological health.
5. Determine if gender will moderate the association between religious coping styles and psychological health

Procedure of the research

The participants that will meet the criteria of inclusion and will agree to be part of the study will be recruited by convenience sampling method. Participants will be informed about the purpose and the objectives of the studies and their confidentiality will be assured. The participants will be asked to give their consent to indicate their acceptance to truly join the study, if they agree they will be given the consent forms to sign. The questionnaires will be administered under the supervision of the researcher and other trained research assistants.

Risk(s):

There will not be any possible risks for participants.

Possible Benefits

The findings of the study will help the stakeholders to put up better strategic planning activities that will meet the needs of Hepatitis B patients.

Confidentiality

The researcher will protect all information about the participant. No name will be recorded. Data collected cannot be linked to them in anyway. Participants will not be named in any reports or journal or magazine.

Voluntary Participation and Right to Leave the Research

Your participation in this research is voluntary and participant are not under obligation to.

Alternatives to participation

Your decision not to participate will not affect your treatment in this hospital in any way.

Withdrawal from the research

Participants may choose to withdraw from the research at any time without having to explain yourself. May also choose not to answer any question you find uncomfortable or private.

Consequence of Withdrawal:

There will be no penalties, loss of benefit or care to you if you choose to withdraw from the study. Please note however, that some of the information that may have been obtained from you without identifiers (name etc), before you chose to withdraw, may have been modified or used in analysis reports. These cannot be removed anymore. We do promise to make good faith effort to comply with your wishes as much as practicable.

Compensation

There will be no compensation package either in cash or kind available for participants.

Contacts for Additional Information

The following people can be contacted for further information about the research. Godwin Osei Boateng 0554466805 and Prof. Emmanuel Kofi Gyimah 0205176009, Mr. J. K. Ofusuhene-Mensah 0246155822.

CONSENT FORM

Statement of person obtaining informed consent:

I have fully explained this research to _____ and have given sufficient information about the study, including that on procedures, risks and benefits, to enable the prospective participant make an informed decision to or not to participate.

DATE: _____NAME: _____

Statement of person giving consent:

I have read the information on this study and have had it translated into a language I understand. I have also talked it over with the interviewer to my satisfaction. I understand that my participation is voluntary (not compulsory).

I know enough about the purpose, methods, risks and benefits of the research study to decide that I want to take part in it.

I understand that I may freely stop being part of this study at any time without having to explain myself _____

I have received a copy of this information leaflet and consent form to keep for myself.

NAME: _____

DATE: _____SIGNATURE/THUMB PRINT: _____

Statement of person witnessing consent (Process for Non-Literate Participants):

I _____ (Name of Witness) certify that information given to _____ (Name of Participant), in the local language, is a true reflection of what l have read from the study Participant Information Leaflet, attached.

WITNESS' SIGNATURE _____

Section A: Demographic

Gender: Male ( ) Female ( )

Religion: Orthodox ( ) Pentecostal ( ) Islamic( ) Traditionalist/other

Age…….

Occupation……

Section B

The questions in this section seek to assess how you have been coping with any stressful situations in your life since you were diagnosed with Hepatitis B Virus. **Please choose by ticking (√) the most appropriate response**

S/N		Not at all	Somewhat	Quite a bit	A great deal
		0	1	2	3
5	I looked for a stronger connection with God	**0**	**1**	**2**	**3**
6	I sought Gods love and care	**0**	**1**	**2**	**3**
7	I sought help from God in	**0**	**1**	**2**	**3**

	letting go of my anger.				
8	I tried to put my plans into action together with God	**0**	**1**	**2**	**3**
9	I tried to see how God might be trying to strengthen me in this situation.	**0**	**1**	**2**	**3**
10	I asked forgiveness for my sins.	**0**	**1**	**2**	**3**
11	I focused on religion to stop worrying about my problems.	**0**	**1**	**2**	**3**
12	I wondered whether God had abandoned me.	**0**	**1**	**2**	**3**
13	I felt punished by God for my lack of devotion.	**0**	**1**	**2**	**3**
14	I wondered what I did for God to punish me.	**0**	**1**	**2**	**3**
15	I questioned Gods love for me.	**0**	**1**	**2**	**3**
16	I wondered whether my church had abandoned me.	**0**	**1**	**2**	**3**
17	I decided the devil made this happened.	**0**	**1**	**2**	**3**
18	I questioned the power of God.	**0**	**1**	**2**	**3**

Section B:

Please choose by **Circling** the number beside the statement you have picked. If several statements in the group seem to apply equally well, circle the highest number for that group.

19.

0 I do not feel sad.

1 I feel sad much of the time.

2 I am sad all the time.

3 I am so sad or unhappy that I can't stand it.

20.

0 I am not discouraged about my future.

1 I feel more discouraged about my future than I used to.

2 I do not expect things to work out for me.

3 I feel my future is hopeless and will only get worse.

21.

0 I do not feel like a failure.

1 I have failed more than I should have.

2 As I look back, I see a lot of failures.

3 I feel I am a total failure as a person.

22.

0 I get as much pleasure as I ever did from the things I enjoy.

1 I don't enjoy things as much as I used to.

2 I get very little pleasure from the things I used to enjoy.

3 I can't get any pleasure from the things I used to enjoy.

23.

0 I don't feel particularly guilty.

1 I feel guilty over many things have done or should have done.

2 I feel quite guilty most of the time.

3 I feel guilty all the time.

24.

0 I don't feel I am being punished.

1 I feel I may be punished.

2 I expect to be punished.

3 I feel I am being punished.

25.

0 I feel the same about myself as ever.

1 I have lost confidence in myself.

2 I am disappointed in myself.

3 I dislike myself.

26.

0 I don't criticize or blame myself more than usual.

1 I am more critical of myself than I used to be.

2 I criticize myself for all of my faults.

3 I blame myself for everything bad that happens.

27.

0 I don't have any thoughts of killing myself.

1 I have thoughts of killing myself, but I would not carry them out

2 I would like to kill myself.

3 I would kill myself if I had the chance

28.

0 I don't cry any more than I used to.

1 I cry more than I used to.

2 I cry over every little thing.

3 I feel like crying, but I can't.

29.

0 I am no more restless or wound up than usual.

1 I feel more restless or wound up than usual.

2 I am so restless or agitated, it's hard to stay still.

3 I am so restless or agitated that I must keep moving or doing something.

30.

0 I have not lost interest in other people or activities.

1 I am less interested in other people or things than before.

2 I have lost most of my interest in other people or things.

3 It's hard to get interested in anything.

31.

0 I make decisions about as well as ever.

1 I find it more difficult to make decisions than usual.

2 I have much greater difficulty in making decisions than I use to

3 I have trouble making any decisions.

32.

0 I do not feel I am worthless.

1 I don't consider myself as worthwhile and useful as I used to.

2 I feel more worthless as compared to others.

3 I feel utterly worthless.

33.

0 I have as much energy as ever.

1 I have less energy than I used to have.

2 I don't have enough energy to do very much.

3 I don't have enough energy to do anything.

34.

1a I sleep somewhat more than usual.

1b I sleep somewhat less than usual.

2a I sleep a lot more than usual.

2b I sleep a lot less than usual.

3a I sleep most of the day.

3b I wake up 1-2 hours early and can't get back to sleep.

35.

0 I am not more irritable than usual.

1 I am more irritable than usual.

2 I am much more irritable than usual.

3 I am irritable all the time.

36.

0 I have not experienced any change in my appetite.

1a My appetite is somewhat less than usual.

1b My appetite is somewhat greater than usual.

2a My appetite is much less than before.

2b **My** appetite is much greater than usual.

3a **I** have no appetite at all.

3b **I** crave food all the time.

37.

0 I can concentrate as well as ever.

1 I can't concentrate as well as usual.

2 It's hard to keep my mind on anything for very long.

3 I find I can't concentrate on anything.

38.

0 I am no more tired or fatigued than usual.

1 I get more tired or fatigued more easily than usual.

2 I am too tired or fatigued to do a lot of the things I used to do.

3 I am too tired or fatigued to do most of the things I used to do.

39.

0 I have not noticed any recent change in my interest in sex.

1 I am less interested in sex than I used to be.

2 I am much less interested in sex now.

3 I have lost interest in sex completely.

Section C:

Please choose by **ticking (√)** the most appropriate response in the box beside the reply that is closest to how you have been feeling in the past months. Don't take too long over you replies: your immediate is best. **Not at a**

S/N	ITEMS	**Not at All**	**Mildly**	**Moderately**	**Severely**
		0	1	2	3
40	Numbness or tingling	0	1	2	3
41	Feeling hot	0	1	2	3
42	Wobbliness in leg	0	1	2	3
43	Unable to relax	0	1	2	3
44	Fear of worst happening	0	1	2	3
45	Dizzy or lightheaded	0	1	2	3
46	Heart pounding / racing	0	1	2	3
47	Unsteady	0	1	2	3
48	Terrified or afraid	0	1	2	3
49	Nervous	0	1	2	3
50	Feeling of choking	0	1	2	3
51	Hands trembling	0	1	2	3
52	Shaky / unsteady	0	1	2	3
53	Fear of losing control	0	1	2	3
54	Difficulty in breathing	0	1	2	3
55	Fear of dying	0	1	2	3
56	Scared	0	1	2	3
57	Indigestion	0	1	2	3
58	Faint / lightheaded	0	1	2	3
59	Face flushed	0	1	2	3
60	Sweat (not due to heat)	0	1	2	3

APPENDIX B

UCC INTRODUCTORY LETTER

UNIVERSITY OF CAPE COAST
COLLEGE OF EDUCATION STUDIES
FACULTY OF EDUCATIONAL FOUNDATIONS
DEPARTMENT OF EDUCATION AND PSYCHOLOGY

Telephone: 233-3321-32440/4 & 32480/3
Direct: 033 20 91697
Fax: 03321-30184
Telex: 2552, UCC, GH.
Telegram & Cables: University, Cape Coast
Email: edufound@ucc.edu.gh

UNIVERSITY POST OFFICE
CAPE COAST, GHANA

Our Ref:

Your Ref:

20th March, 2019

TO WHOM IT MAY CONCERN

Dear Sir/Madam,

THESIS WORK
LETTER OF INTRODUCTION: OSEI, GODWIN BOATENG

We introduce to you Mr. Godwin Boateng Osei, a student from the University of Cape Coast, Department of Education and Psychology. He is pursuing a Master of Philosophy degree in Clinical Health Psychology and is currently at the thesis stage.

Mr. Godwin Boateng Osei is researching on the topic: **"Influence of Religious Coping styles on the Psychological Health of Hepatitis B patients.**

He has opted to collect data at your institution/establishment for the Thesis work. We would be most grateful if you could provide him the opportunity for the study. Any information provided is purely for academic purposes and would be treated as strictly confidential.

Thank you.

Yours faithfully,

Gloria Sagoe
Chief Administrative Assistant
For: **HEAD**

APPENDICIX C

CERTIFICATE OF REGISTRATION FROM KATH

KOMFO ANOKYE TEACHING HOSPITAL

RESEARCH AND DEVELOPMENT UNIT (R & D)

CERTIFICATE OF REGISTRATION

REG. NO: RD/CR19/108

This is to certify that

Prof/Dr/Mrs/Mr/Ms. Osei Boateng Godwin

has registered his/her proposed study titled ....Influence of Religious Coping Styles on the Psychological Health of Hepatitis B patients in Kumasi Metropolis.

..... with the Research and Development Unit.

Date: 02-May-2019

Name of issuing officer

Mr. Isaac Boakye

Signature

K/17/0694146

*Receipt number must tally with pay-in slip from the bank

Note

This certificate does not constitute ethical clearance for the conduct of the study but proof of registration of study with KATH. Ethical clearance from the Committee of Human Research, Publications and Ethics (CHRPE) is required to conduct the study in KATH. Copies of all relevant regulatory approvals including CHRPE must be submitted to the R&D Unit prior to commencement of the study.

Version RD/REG-01 ST JUNE, 2018

Please note: All previous versions of the certificate of registration becomes obsolete

Form expires 30TH JUNE, 2019

APPENDIX D

APPROVAL FROM KATH

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY
COLLEGE OF HEALTH SCIENCES
SCHOOL OF MEDICAL SCIENCES / KOMFO ANOKYE TEACHING HOSPITAL
COMMITTEE ON HUMAN RESEARCH, PUBLICATION AND ETHICS

Our Ref: CHRPE/AP/373/19

4th June, 2019.

Mr. Godwin Boateng Osei
Department of Psychology
and Education
University of Cape Coast
CAPE COAST.

Dear Sir,

LETTER OF APPROVAL

Protocol Title: *"Influence of Religious Coping Styles on the Psychological Health of Hepatitis B Patients in Kumasi."*

Proposed Site: *Hepatitis B Clinic, Komfo Anokye Teaching Hospital and Suntreso Government Hospital.*

Sponsor: *Principal Investigator.*

Your submission to the Committee on Human Research, Publications and Ethics on the above-named protocol refers.

The Committee reviewed the following documents:

- A notification letter of 2nd May, 2019 from the Komfo Anokye Teaching Hospital (study site) indicating approval for the conduct of the study at the Hospital.
- A notification letter of 4th October, 2018 from the Department of Education and Psychology, UCC seeking permission to conduct the study at Suntreso Government Hospital (study site) and it was approved.
- A Completed CHRPE Application Form.
- Participant Information Leaflet and Consent Form.
- Research Protocol.
- Questionnaire.

The Committee has considered the ethical merit of your submission and approved the protocol. The approval is for a fixed period of one year, beginning 4th June, 2019 to 3rd June, 2020 renewable thereafter. The Committee may however, suspend or withdraw ethical approval at any time if your study is found to contravene the approved protocol.

Data gathered for the study should be used for the approved purposes only. Permission should be sought from the Committee if any amendment to the protocol or use, other than submitted, is made of your research data.

The Committee should be notified of the actual start date of the project and would expect a report on your study, annually or at the close of the project, whichever one comes first. It should also be informed of any publication arising from the study.

Thank you, Sir, for your application.

Yours faithfully,

Osomfo Prof. Sir J. W. Acheampong MD, FWACP
Chairman

Room 7 Block J, School of Medical Sciences, KNUST, University Post Office, Kumasi, Ghana
Phone: +233 3220 63248 Mobile: +233 20 5453785 Email: chrpe.knust.kath@gmail.com / chrpe@knust.edu.gh

UNIVERSITY OF CAPE COAST
COLLEGE OF EDUCATION STUDIES
FACULTY OF EDUCATIONAL FOUNDATIONS
DEPARTMENT OF EDUCATION AND PSYCHOLOGY

Telephone: 233-3321-32440/4 & 32480/3
Direct: 033 20 91697
Fax: 03321-30184
Telex: 2552, UCC, GH.
Telegram & Cables: University, Cape Coast
Email: edufound@ucc.edu.gh

UNIVERSITY POST OFFICE
CAPE COAST, GHANA

4th October, 2018

Our Ref:

Your Ref:

SUNTRESO GOVT HOSPITAL
RECEIVED
29 OCT 2018
GHANA HEALTH SERVICE

TO WHOM IT MAY CONCERN

Dear Sir/Madam,

THESIS WORK
LETTER OF INTRODUCTION: MR. OSEI BOATENG GODWIN

We introduce to you Mr. Osei Boateng, a student from the University of Cape Coast, Department of Education and Psychology. He is pursuing Master of Philosophy degree in Clinical Health Psychology and is currently at the thesis stage.

Mr. Osei Boateng is researching on the topic:

"Influence of Religious Coping Styles on the psychological Health of Hepatitis B Patients".

He has opted to collect data at your institution/establishment for the Thesis work. We would be most grateful if you could provide him the opportunity for the study. Any information provided would be treated as strictly confidential.

Thank you.

Yours faithfully,

Theophilus Amuzu Fiadzomor (Mr.)
Senior Administrative Assistant
For: HEAD

31/10/18

31/10/18
The bearer has been given the green light to commence his data collection. Pls assist him in any way you can.

DR. GERTRUDE ACQUAH-HAGAN
(SPECIALIST FAMILY PHYS.
SUNTRESO GOVT. HOSPITAL
KUMASI

APPENDIX F

UCC ETHICAL CLEARANCE

UNIVERSITY OF CAPE COAST
COLLEGE OF EDUCATION STUDIES
ETHICAL REVIEW BOARD

UNIVERSITY POST OFFICE
CAPE COAST, GHANA

Our Ref: CES-Erb/ucc-edu/V3/19-09 Date: March 4, 2019

Your Ref: .....

Chairman, CES-ERB
Prof. J. A. Omotosho
jomotosho@ucc.edu.gh
0243784739

Vice-Chairman, CES-ERB
Prof. K. Edjah
kedjah@ucc.edu.gh
0244742357

Secretary, CES-ERB
Prof. Linda Dzama Forde
lforde@ucc.edu.gh
0244786680

Dear Sir/Madam,

ETHICAL REQUIREMENTS CLEARANCE FOR RESEARCH STUDY

The bearer, Godwin Osei Boateng., Reg. No. EF/CHP/17/0013 is an M.Phil. / Ph.D. student in the Department of Education and Psychology in the College of Education Studies, University of Cape Coast, Cape Coast, Ghana. He / ~~She~~ wishes to undertake a research study on the topic:

Influence of religious coping on the psychological health of Hepatitis B patients in Kumasi.

The Ethical Review Board (ERB) of the College of Education Studies (CES) has assessed his/~~her~~ proposal and confirm that the proposal satisfies the College's ethical requirements for the conduct of the study.

In view of the above, the researcher has been cleared and given approval to commence his/~~her~~ study. The ERB would be grateful if you would give him/her the necessary assistance to facilitate the conduct of the said research.

Thank you.
Yours faithfully,

Prof. Linda Dzama Forde
(Secretary, CES-ERB)