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Original article

Coping mechanisms used by persons diagnosed with hepatitis B virus infection at the Tamale Teaching Hospital

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ABSTRACT

Introduction: Infection by hepatitis B virus (HBV) causes mortality, morbidity and financial burden and is thus a major global health problem. The adoption of coping mechanisms is imperative in the successful control and alleviation of the hepatitis B menace in Ghana. Objective: The goal of this study was to assess the coping mechanisms used by persons diagnosed with the hepatitis B virus infection in the Tamale Teaching Hospital. **Methodology:** The specific study design adopted was the descriptive cross sectional design. Clients who were above fifteen years of age in the Tamale teaching hospital were requested to answer the developed research questionnaire. Purposive sampling technique was used in the selection of the study patients who responded to the research questionnaire. **Results:** Majority of the participants knew their status prior to diagnosis but was limited in their extent of understanding on the intricacies of the disease and the organs of the body mostly affected. Respondents preferred to blend the modern orthodox therapy methods with traditional or religious treatment options. Many respondents alter their dietary pattern in other to cope with the disease. Many respondents indicated their diagnoses have brought a lot of stress to them and their immediate families. Majority wished to protect family and friends from getting infected with the disease. **Conclusion:** People who report to the Tamale teaching hospital with hepatitis B virus infection adopt various coping mechanisms including dietary modification and use of social support from the family to live with the disease.

KEYWORDS: Coping, Diagnosis, Disease

INTRODUCTION

Infection by hepatitis B virus causes serious mortality, morbidity and financial burden and is thus a major global health problem. Hepatitis B is one of the most common infectious diseases of the world, infecting two billion people including an estimated 400 million chronically infected cases [1]. How these people cope with the challenge of being diagnosed and how to manage the disease is imperative to the total outcome of the disease. Hepatitis B is a much more severe and longer-lasting disease that affects the liver and a person may live with it for his or her entire life. It may occur as an acute disease, or in about 5 to 10 percent of cases, the illness may become chronic and lead to permanent liver damage [1].

The disease is still one of the most common severe liver infections accounting for about one million annual deaths worldwide despite education and availability of drugs and vaccines [1]

Coping mechanisms are important components of care in patients diagnosed with hepatitis B infection. Coping mechanisms have been shown to mediate stressors and chronic illnesses such as hepatitis and other consequences such as physical and psychological wellbeing [2]. Individuals with chronic infection have a high risk of developing liver cirrhosis and hepatocellular carcinoma [3] and the ability for such persons to cope with this challenge is imperative to their general wellbeing. Understanding coping reaction and strategies and its impact on quality of life is an area of great importance for patients, family members, and physicians. How an individual copes with

specific stressful symptoms of the disease have significant effects on overall function and wellbeing [4].

The factors that influence and can be considered coping mechanisms are varied and strongly interrelated in chronically ill persons.The World Health Organization (WHO) described coping mechanisms by stating that; coping mechanisms are remedial actions undertaken by people whose survival and livelihood are compromised or threatened [5].Coping strategies vary by region, community, social group, household, gender, age, season and time in history [5].They are deeply influenced by the people's previous experience. An important element that can easily be determined by the WHO definition is vulnerability and capacity to cope which is the two facets of the same coin: The more one is vulnerable, the less one has the capacity to cope, and the more one tends to adopt coping mechanisms[6].

As individuals diagnosed with hepatitis B make strides to cope with the disease treatment, the need for a remedy become paramount to the patient, his family, community and the health care delivery system. While various therapy options are available, other extraneous factors influence eventually the place to seek remedy [1][6]. Anecdotal data in Africa suggest that due to people's strong inclination to spirituality and the belief that spirits generally influence health; spiritual healers either as Pastors(Christians), Imams (Muslims) or Herbalist or Traditional medical practitioners are highly patronised. Other people diagnosed with the disease may also seek remedies from road side chemical vendors, quack doctors and other non-accredited pharmaceutical dealers. The general consensus is to seek orthodox medical care services because of the relative lower risk of causing hepatic toxicity and the ability to care for co-morbid conditions, but inherent in it is also the desire to cope with the various treatment methodologies [5].

The specific coping mechanisms have to deal with bureaucracy in seeking therapy, cost of specific antiviral treatment, stigma, lack of access to facility, delays within the health facilities, lack of specialized care, improper or poorly accepted laboratory results and poor attitude of health care professionals. Persons diagnosed with hepatitis B have to also develop coping mechanisms in order to cope with the various antiviral treatments available such as interferon, Entecavir, Liv.52, lamivudine, Adenovir, Tenofovir and multivitamins of the condition and its challenges such as side effects of the drugs and cost of the medication including its accessibility.

In Ghana, several studies including Dongdem et al and Walana et al have been conducted on knowledge, perception, attitude and practices of people towards hepatitis B virus infection and prevention strategies. How concluding these studies may seem to be, none of these studies have been able to dwell on one of the most intriguing miseries towards the control of endemic hepatitis B in the country and that is the coping mechanisms used by persons living with the disease. Wide spread poverty, illiteracy and religion influence the specific choices of treatment. The combinations of these have made the springing up of various traditional healer camps that remain a safe place for some of these people suffering from hepatitis B infection.

OBJECTIVE

This manuscript assessed coping mechanisms used by persons diagnosed with hepatitis B virus infection at the Tamale Teaching Hospital.

The elementary objectives of this study include:

1. To assess the knowledge level of persons diagnosed with hepatitis B at the Tamale Teaching Hospital.
2. To determine various methods of therapies used by persons diagnosed with hepatitis B infection at the Tamale Teaching Hospital.
3. To explore the lifestyle Modifications used by persons diagnosed with hepatitis B infection.
4. To ascertain whether persons diagnosed with hepatitis B adhere to preventive measures on the mode of transmission of the disease.

MATERIALS AND METHODS

Profile of study site: The Tamale Teaching Hospital is located in the eastern part of the Tamale Metropolis. Geographically, the Metropolis lies between latitude 9º16 and 9º 34 north and longitudes 0º 36 and 0º 57 west. The hospital is the only referral centre for people around the area. It has a bed capacity of four hundred and sixty five (465).The Teaching Hospital serves as a clinical teaching institution for the: Schools of Medicine and Allied Health Sciences, University for Development Studies (SMHS-UDS) –Tamale; Ghana College of Physicians and Surgeons; Nursing and Midwifery Training College (NMTC)–Tamale; Community Health Nursing Training School (CHNTS) – Tamale; Health Assistants Training School (HATS): Damango, Nalerigu, Yendi, Salaga and Kpembe and Health Module of the National Youth Employment Programme (NYEP).

Study Design: A descriptive cross-sectional study design was adopted as data was gotten from participants once.

Target Population: The study population included about five hundred people aged fifteen (15) years and older that were diagnosed with the hepatitis B Virus infection at the Tamale Teaching Hospital. Data was collected over a period of two months thus from April to June 2015. The other populations interviewed were health care providers (nurses and doctors) who are involved in the day to day care of hepatitis B positive people in the hospital.

The target population for the interview sessions was health care professionals who directly work with persons diagnosed with the hepatitis B virus infection in the Tamale Teaching Hospital.

Sample Size Determination: According to the annual report of the Tamale Teaching Hospital, 582 patients in 2013 and 629 patients in 2014 were admitted to the hospital with hepatitis B virus infection. Approximately fifty (50) patients were diagnosed with the disease within a month. Using a margin of error of about 10% with a likely non response rate of 10%, one hundred and twenty (120) participants were selected for the study within the two months. All eligible participants within the period of the study who consented to participation were included. Purposive sampling technique was used to select the study participants.

The goal of purposive sampling was that clients chosen were diagnosed of hepatitis B virus infection and were admitted to the hospital of study. That was the populations that were of interest and which best enabled the researcher (s) to answer the research questions. In addition to these, four nurses and two doctors were interviewed. There was 100% response rate to both the questionnaire and the interview sessions.

Data Collection Methods and Tools: Tools for data collection included semi-structured interviewing questionnaires. The interviewing questionnaire contained five segments that covered the four objectives of the study as thematic areas and demographic characteristics of the study participants.

A semi-structured interview technique was adopted to interview health care providers who are in direct care of persons living with the hepatitis B virus infection. Health care personnel were made to indicate the type of coping mechanisms that are adopted by clients. They also responded to items that pertained to the lifestyle modifications and the treatment options available and are adopted by persons who are diagnosed with the hepatitis B virus infection.

Data Analysis and Presentation: The questionnaire was analysed using Statistical Package for Social Sciences (SPSS), IBM Statistic version 20. It was cross-checked for completeness and entered into the software (SPSS) by the researchers. Analysis was done and the results presented in descriptive statistics. Interviews with health care professionals were transcribed verbatim and analysed manually for themes and patterns according to the objective of the study.

Ethical Approval and Parental Consent: A letter of introduction presenting the researchers with the proposal of the study was submitted to the Research Unit of the Tamale Teaching Hospital. The proposal was reviewed by a committee in this unit and subsequently was approved. The researchers explained to all participants and received informed consent verbally before the administration of the research questionnaire or the commencement of the interview sessions. People who were below the ages of eighteen had their parents or guardians consent for their participation or otherwise in to the study.

RESULTS

Demographic Characteristics of Respondents

This study was conducted on people who were diagnosed with hepatitis B virus infection at the Tamale Teaching Hospital and were admitted to any of the medical wards (male and female medical wards) on account of their diagnosis. As shown in table (1), majority (51%) of the respondents are within the reproductive age group. Large proportions (86%) of the people diagnosed with hepatitis B have not had any formal tertiary education. Also as shown in table (1) 40% of the respondents have not had any form of formal education.

Table 1: distribution of demographic characteristic of respondents

Variables	Responses	Frequency	Percentage
Age	15 – 24	7	6
	25 – 34	43	36
	35- 44	30	25
	45 – 54	31	26
	55- 64	9	7
Sex	Male	62	52
	Female	58	48
Religion	Christian	36	30
	Muslim	72	60
	Traditionalist	12	10
Marital Status	Married	48	40
	Single	43	36
	Divorce	24	20
	Widowed	5	4
Educational status	Primary	31	26

of respondents	Secondary	29	24
	Tertiary	17	14
	Non educated	43	36
Employment status of respondents	Self employed	48	40
	Government worker	24	20
	Trader	17	14
	Unemployed	31	26

Knowledge Level Of Study Subjects on Hepatitis B Infection

Majority (84%) of the patients diagnosed with hepatitis B virus infection knew their hepatitis B virus infection status before they reported to the facility(Tamale Teaching Hospital) for treatment. Determination of hepatitis B virus status was either gotten from the Tamale Teaching Hospital, from other health facilities within the region or within community based health care services(private individuals).Community based health care's services are private health care institutions that are able to counsel and test for virus.

Table 2: Distribution of the knowledge level of the persons diagnose with hepatitis B

Variables	Responses	frequency	percentage
First time diagnosis with the disease	Yes	19	16
	No	101	84
Routine test for hepatitis B infection	Yes	29	24
	No	91	76
Distribution of perception of organ of body infected with hepatitis B infection	Liver	65	54
	Kidney	14	12
	Heart	5	4
	Eyes	5	4
	whole body	31	26
Distribution of perception of presence of treatment to hepatitis B infection	Yes	48	40
	No	72	60
Expectation of source of treatment	Orthodox treatment	40	40
	Spirituality	18	15
	African voodoo	62	65
Distribution of perception of mode of transmission	Blood born	81	68
	Airborn	19	16
	Other body fluids	10	8
	Do not know	10	8

Many (76%) of the people who were admitted to the Tamale Teaching Hospital with hepatitis B infection do not routinely test for the virus (Table 2). A large percentage (67%) diagnosed with hepatitis B infection were within the productive age (15 to 45years for women) as shown in table (2) above. To use effective coping mechanisms, respondents were also expected to indicate if they perceived the hepatitis B virus infection to have any cure; 60% of the patients indicated that the disease has no treatment. Participants that thought there was a cure, expected it from modern orthodox treatment (30%) to mainly spirituality (15%) and African medical voodoo (65%).To effectively control the disease, the spread needs to be curtailed. In order to do this the means of transmission of the disease was ascertained: 68% believed it was blood borne while the remainder indicated sexual transmission and through body fluids.

Various Methods of Therapies Used by People with Hepatitis B Infection

People diagnosed with hepatitis B virus infection were divided on which method of treatment was appropriate; hospital or orthodox treatment, herbal treatment, spirituality and the combination of these methods of treatment as shown in table (3).

Table 3: distribution of the various methods of therapy adopted

Variables	Responses	Frequency	percentage
Perception of Treatment options most appropriate	Hospital treatment	22	18
	Herbal treatment	29	24
	Spiritual treatment	7	6
	Combination of more than one above	62	52
Methods of therapy adopted or likely to be adopted	Hospital treatment	24	20
	Herbal treatment	29	24
	Spiritual treatment	5	4
	Combination of two or more options	62	52
Cost of the various methods of treatment	Very costly	53	44
	Costly	38	32
	Moderate	19	16
	Affordable	7	6
	Cheap	3	2
Perception of having the needed resources to attain treatment	Have the needed resources	36	30
	Have challenges with needed resources	72	60
	Have limited resources	12	10

Even among these various indications made on the methods of treatments, those who chose modern orthodox treatment methods still had a wide spectrum of treatment options to choose from: surgery, medical management and/or cold therapy (shown in table three above).Most (58%) of the participants wished they could get antiviral medication that will cure the disease. Of those who wanted antiviral medications, 67% could not afford the cost, 30% did not know where to acquire the drug and the remaining participants believed it was too late for treatment with antiviral drugs. Participants (76%)generally indicated cost of treatment to be expensive while the health care providers indicated patients undergo very rigorous clinical, radiological and laboratory examinations most of which usually are available in private health facilities (as shown in table 3 above).

Lifestyle Modifications Used by Person Diagnosed with Hepatitis B Virus Infection

Table 4: Distribution of the lifestyle modification used by hepatitis B patients

Variables	Responses	Frequency	percentage
Effects of diagnosis on family life	Very distressing	72	60
	Could not go to work	36	30
	Dwindling family resources	5	4
	spousal misunderstanding	7	6
alteration in dieting pattern	Yes	77	64
	No	43	36
How diet is affected by diagnosis	Avoid foods that contain fats and oil	18	15
	Reduced salt intake	54	45
	Eats high fibre vitamin and vegetable diet	48	40
Psychological challenges encountered	Stigma	48	40
	Lack of resources and Family neglect	72	60
Discrimination byfamily members	Yes	101	84
	No	19	16
Challenges faced by patient for the cost of treatment	Yes		70
	No		30
Life style adaptation after diagnosis	Careful in diet	48	40
	Do not use over the counter drugs	17	14
	Altered sexual activity	24	20
	Medical check-ups	31	26

The repercussions of having been diagnosed with the hepatitis B virus infection on family life are huge. Majority (60%) of the respondents indicated that their diagnoses have brought a lot of distress to their family. *"The entire family were worried, and incapacitated following the diagnosis"* a respondent intimated. While some could not go to work due to their diagnoses, some indicated their diagnoses have brought about spousal misunderstanding. A health care provider summarised this by saying, *"families and especially spouses keep arguing as to who brought about the disease in the family*". Participants generally changed their dietary pattern: Patients avoided food that contained oils and fats (15%), reduced salt intake (45%) while others promoted the intake of vitamins / vegetables and fruits, and fiber diets (40%) as shown in table 4.Patients suffering from the disease must undergo regular medical check-ups and follow up care that is imperative to the general ability of the patient to cope. "*To be able to cope with the disease, healthy living with regular exercising is a priority"* a health care worker stated.The psychological challenges faced by persons living with hepatitis B virus infection ranged from patients being stigmatised –psychological trauma (40%) to challenges encountered by patients in purchasing their drugs- economic burden (60%) as shown in table 4. Majority (84%) of the patients were discriminated by the family members upon diagnoses.

Preventive Measures and Mode of Transmission of Hepatitis B Virus Infection

On perception of patients diagnosed with the hepatitis B virus infection on the mode of transmission, the responses were varied and ranged from eating with an infected person (16%) and sexual activity representing (46%). The rest of the responses were that, when in contact with body fluids of the infected person (18%), kissing (12%) and 8% believed that the disease is airborne and can be gotten when you sleep with an infected person in the same room as depicted in

table 5. As part of the coping mechanisms to be used by an infected person, sufferers of the infection must protect self, family and friends from getting infected. Majority (70%) of respondents did not consciously protect their family members from the hepatitis B virus infection while only 4% sometimes consciously did, 26% do consciously protect their family members and friends from contracting the disease as shown in table 5. Various means used to protect self and family from the disease, responses ranged from; 24% indicating avoiding sharing of household utensils, 26% mentioning protective sex, whiles 16% indicated regular medical check-ups, the remaining 34% believed in doing all the above.

Table 5: Distribution of preventive measures and mode of transmission

Variables	Responses	Frequency	percentage
Perception of mode of transmission	Eating with an infected person	19	16
	Sexual activity	55	46
	Contact with body fluids	22	18
	Kissing	14	12
	Airborn	10	8
Protection of Family Members and Friends from the Infection	Yes	31	26
	Sometimes do	5	4
	No	84	70
Measures of preventing family members from the infection	Avoid sharing household utensils	29	24
	Protective sex	31	26
	Regular check up	19	16
	Do all the above	41	34

DISCUSSION

This manuscript determined the coping mechanisms used by hepatitis B patients admitted to the Tamale Teaching Hospital. Many developing countries often face significant health and hygiene challenges that predispose to the transmission of hepatitis viruses [7]. Hepatitis B patients presented to the hospital with advanced diseased state: i.e. cirrhosis, hepatoma or ascites and in some cases, a combination of these complications. Contributing factors leading to late presentation included: ignorance, poverty, lack of easy accessibility to healthcare centres, lack of trained personnel and diagnostic facilities, un-affordability of expensive drugs and consultations from quacks and traditional healers.

Many people are living with the disease within the communities and will only report to the health facility during only acute illnesses. The finding deviates from that which was espoused by Theobald stating that about a third of Ghanaians living with viral hepatitis B are unaware of their status and is not receiving care and treatment for the condition. In Ghana, hepatitis B is the leading cause of infectious death, claiming the lives of thousands of Ghanaians each year [7].

This study was conducted on ill persons and on those currently seeking remedy: Theobald conducted his study on normal healthy population. This probably will be responsible for the discrepancy in the research findings that portrayed the level of knowledge and awareness of respondents on their hepatitis B virus status. The age distribution of the people with hepatitis B virus infection is in consonance to Dongdem et al among blood donors at the Tamale Teaching Hospital. They identified the age group with the highest number of donors (53.47%) was 20-29 years which also constituted the highest number of positive cases for hepatitis B (69.35% of all positive cases) among voluntary donors[8].

As Africa medical health care system may be limited both in access and quality, the strong reliance of patients on African traditional medicine could be inimical to the progress made towards supporting their recovery. Herbs of unknown proportions and compositions are used in this method of therapy and are likely to be hepato-toxic. Hepatitis B virus infection is blood borne and transmitted through other body fluids; the specific knowledge of the people suffering from the disease generally influences the choices they make towards the spread of the disease both within their families and the general population.

The mode of transmission of the virus relative to people's perception determines the very coping mechanisms that are likely to be adopted and the means they are likely to use to prevent the spread of the disease. The appropriateness of treatment and the perception of the client and family on which specific method of treatment is most appropriate influence the choice of treatment and prognosis. Zaigham and Adeel reported that though modern orthodox method of treatment is the most recommended, inherent in it are diverse forms of therapies where decisions have to be made as to which form ought to be adopted. The choice of any form of these treatment options are highly influenced by the person's past experience, believes and the support systems that are available to the individual [9]. Cost and access to antiviral medications remain a major challenge to people who are diagnosed with viral infection in the Northern Region and therefore leave them with very minimal ability to cope with the disease.

The cost of hepatitis B treatment is high due to the co-morbidities that are associated with the disease and the specific need to buy antiviral drugs for definitive treatment. The specific liver supportive enzymes and vitamins to be taken during the acute phase of the treatment are also exorbitant. According to Zaigham and Adeel, newly diagnosed hepatitis B virus infected individuals should be evaluated by relevant history, identifying risk factors and appropriate physical examination. Laboratory tests should include complete blood counts, liver panel, α fetoprotein, HBeAg, anti-HBe antibody status and HBV DNA levels [9].

Every patient should have an ultrasound examination of the liver. Analyzing the cost of therapy to persons with hepatitis and its associated complications, other factors identified are: medication costs incurred by patients with HBV infections to include costs for prescription, non-prescription and complementary medications related to their antiviral treatment, to the management of adverse effects and to any co-morbid conditions. Faced with financial constraints, patients may adopt a range of coping strategies to deal with the out-of-pocket expenses required to access essential medications. Such coping strategies might lead to a lack of persistence and adherence with medication use, poor health outcomes and higher overall health care cost.In conformity to the findings of Dongdem et al: Carriers of hepatitis B face many psychological, emotional, social and economic challenges when diagnosed with the condition due to ignorance or inadequate levels of knowledge.

Living with hepatitis B involves some minor lifestyle changes that can be wonderfully beneficial to the person's entire body and mind in addition to the liver. The liver is a major organ of metabolism and is responsible for removing toxins in the body from the food we eat. One of the safest dietary practices for someone diagnosed with hepatitis B infection is to reduce or avoid additional toxins such as alcohol, avoid smoking and reduce the level of fatty or oily food intake. Persons living with the disease have to eat a well-balanced diet that includes a variety of foods to meet the body's need for energy, growth and repair.Social support systems are beneficial to the psychological management of the person living with a chronic illness.

According to Connor, positive emotion-focused mechanisms, such as seeking social support, and positive re-appraisal, are associated with beneficial outcomes[10].The way a person copes is influenced by his or her resources, which include health and energy, existential beliefs, or general beliefs about control, commitments, which have a motivational property that can help, continue coping efforts, problem solving skills, social skills, social support, and material resources.

The route of transmission identified is in support of the finding of Okwesili et al that stated as many routes may act as conduits of the hepatitis B virus into the human liver, blood transfusion remains a substantial source of hepatitis B virus infection [11]. Also Nkrumah found that horizontal transmission of HBV and hepatitis C virus (HCV) have been related to age, socio-economic conditions, socio-professional status and risky behaviours such as sharing of bath towels, chewing gum, partially eaten candies, or dental cleaning materials, as well as biting fingernails in conjunction with scratching the backs of carriers.

The idea of protecting self and family is also as envisaged by Dongdem et al that socio-cultural factors play an instrumental role in influencing the decisions of people in the transmission of the hepatitis B virus infection in the Northern Region of Ghana. This influences largely people's choices made as to how they protect their individual family members from the hepatitis B virus infection. The report of Dongdem et al revealed that one of the most social challenge persons diagnosed with hepatitis B battle with is sexual activity. Many persons with hepatitis B are fearful of engaging in sexual activities once diagnosed with the virus because they are concerned passing the virus onto their partners and as a result many marriages and relationships are broken. However, research shows that sexual activity can benefit one's immune system. Sexual activity triggers the release of endorphin, which helps create a more positive attitude. It also helps one to forget about his or her problems. That is, sexual activity can go a long way to enhance the healing process and creating an environment for a better functioning of one's immune system [7].

CONCLUSION

The findings of this study identified that people who reported to the hospital with the hepatitis B virus infection knew so but only reported with complications and co morbidity. People living with hepatitis B virus infection adopt several mechanisms and strategies to cope with the virus and the diagnosis. Important strategies are dietary modifications and social support systems available in the family.

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