IRA-International Journal of Applied Sciences
ISSN 2455-4499; Vol.04, Issue 03 (2016)
Institute of Research Advances
Pg. no. 490-505
http://research-advances.org/index.php/IRAJAS

Assessment of Knowledge, Attitude and Practice towards Hepatitis B among two rural communities of the Anglophone regions in Cameroon

Lem Edith Abongwa[1], Nyuydzedze Stanley Sunjo[1] & Ndifor Glory Afah[2]
[1] University of Bamenda**,** Faculty of Science, Department of Biological Sciences, PO Box 39,Bambili, NW. Region, Cameroon.

[2] St Louis University Institute of Health And Biomedical Sciences. Bamenda, N. W. Region**,** Cameroon**.**

Type of Review: Peer Reviewed.
DOI: http://dx.doi.org/10.21013/jas.v4.n3.p13

How to cite this paper:
Abongwa, L., Sunjo, N., & Afah, N. (2016). Assessment of Knowledge, Attitude and Practice towards Hepatitis B among two rural communities of the Anglophone regions in Cameroon. *IRA-International Journal of Applied Sciences* (ISSN 2455-4499), 4(3), 490-505. doi:http://dx.doi.org/10.21013/jas.v4.n3.p13

ABSTRACT

Viral hepatitis, especially those caused by hepatitis B virus (HBV), represents a worldwide significant cause of morbidity and mortality affecting about 2 billion people worldwide. Prevention against hepatitis B (HB) is proportional to the knowledge, attitude and practice (KAP) of the people. This study seeks to assess the KAP towards HB in two rural areas of the Anglophone regions in Cameroon from the May 2014 of January 2015 using pre-designed and pre-tested, semi- structured questionnaire. Any correct or positive answers was given one point and zero for a no or negative answer. The response rate was 612 (87.4%). This study revealed that mean (SD) KAP was 14.4(3.7%), 4.7(1.1%) and 3.8(1.2%) respectively. Thus majority of the respondents had low knowledge 354(57.9%), high positive attitude 334(54.6%) and low poor practice 149(24.3%) regarding HB. Excellent knowledge was expressed only by 38(6.2%) respondents. A univariate analysis of Knowledge, showed a significant difference ($p<0.05$) in place, sex, age group, occupation, level of education and monthly income while for attitude a significant difference ($p<0.05$) was seen only in place and for practices a significant difference ($p<0.05$) was seen in the place, marital status, occupation, level of education and monthly income. A linear correlation revealed a non significant positive correlation between knowledge and attitude ($r=-0.003$, $p = 0.12$), a significantly positive correlation between knowledge and practice ($r =0.28$, $p = 0.00$) and a significantly positive correlation in attitude and Practice ($r =0.27$, $p = 0.00$).

Key words: Hepatitis B, Knowledge, Attitude and Practice

Introduction

Hepatitis B virus (HBV) infection is a major health problem worldwide owing to its high prevalence and significant morbidity and mortality [1]. Hepatitis B (HB) is a potentially life-threatening liver infection caused by the hepatitis B virus [2] and can cause chronic infection that is responsible for about 80% of all cases of cirrhosis and liver cancer [3].

About 2 billion people worldwide have been infected with the virus and about 240 million people are chronically infected as defined by HB surface antigen positive and more than 780,000 people die every year due to complications of HB [1]. This high prevalence rate with its consequences make HBV infection a disease of major public health importance worldwide **[1,**4].

HBV is transmitted by percutaneous injuries or per mucosal exposure to infectious blood and blood products and can survive outside the body for at least 7 days making it 50 to 100 times more infectious than HIV [5, 6]. In Cameroon, recent studies reported HBV prevalence rates as high as 10.1- 12.1% among blood donors in hospital blood banks [7] and 7.7% among pregnant women **[8]**. In neighboring Nigeria HBV prevalence ranges from 9-39% [3, 9] while in Asia it ranges from 5-10% in the adult population [6, 10]. As such the prevalence of HBV infection varies, depending on a number of factors which includes the geographical region, host factors as well as environmental and behavioral factors [3, 11].

Prevention is the only safe strategy against high prevalence of any disease [12]. Although HBV is preventable [12] and has a vaccine that has proven to be effective in control of HBV infection, the prevalence of the disease is high especially in sub Saharan countries [3, 6, 7, 12]. This probably is due to lack of information about the disease [10, 13, 14]. Studies by [2] state that prevention against any disease is proportional to knowledge, attitude and practice (KAP) of the thus KAP survey is a quantitative method that uses predefined questions to access quantitative and qualitative information in relation to a particular disease. KAP surveys reveal misconceptions or misunderstandings that may represent obstacles to the activities that we would like to implement and potential barriers to behavior change [11, 15].

KAP studies play an imperative role in determining the ambiguities of a society and are widely used in population reported assessment research worldwide [11]. KAP of the population is usually important because it is a reflective of the importance that is required to control and prevent health related issues by the society [16]. Thus, to control high prevalence of any disease in developing countries like Cameroon, it is essential to prevent transmission, which is primarily caused due to ignorance, incorrect attitude and poor infrastructure [11 , 16].

Although HBV have common routes of transmission like HIV unfortunately in Cameroon much has been done on HIV and not HBV [17-19]. This account for the low HIV prevalence of4.3% [15] compare to the high prevalence of HBV. Considering that HBV is 50 to 100 times more infectious than HIV [5]and symptoms in HBV infection appear only in 35% of those infected this makes it difficult in identifying exposure to the infection [4] putting the entire community at risk.

Despite the high prevalence of HBsAg in Cameroon, no KAP study has been carried in the communities. This study will help to identify the gaps in knowledge; attitude and practice that will be helpful in planning effective health education campaign on HB.

Materials and Method

This study is Cross sectional study to evaluate the KAP in a rural communities. The sample size was determine to be 384 using the Population Proportion Sample Size formula $X = Z_{\alpha/2}^2 * p*(1-p) / MOE^2$, where $Z_{\alpha/2}$ is the critical value of the Normal distribution at $\alpha/2$ (e.g. for a confidence level of 95%, α is 0.05 and the critical value is 1.96), MOE is the margin of error, p is the sample proportion, and N is the population size.

Open ended questionnaires were administered to some Inhabitants of Bamendakwe in the northwest region and Ekona in the Southwest region after obtaining their verbal consent from the May 2014 of January 2015. Pre-designed and pre-tested, semi- structured questionnaire items with response options of yes, no, and no idea was developed based on KAP surveys with similar objectives [11, 13]. Respondents who could read and write filled the form by themselves while those who could not write were assisted.

The questionnaire was grouped into 4 parts; socio demographic (8 questions), knowledge (29 questions), attitude (9 questions), and practice (9 questions). Knowledge is be used to assessed the person's awareness to a disease (causative agent, transmission, symptoms, treatment prevention etc), while attitude is the approach to think, feel and act in a particular way towards HBV and practices entails what a person will do in case he/she has HBV [11].

Any correct or positive answer was given one point and zero for negative answer, I do not know or wrong answer. Knowledge was scored on 29 and classified as poor < 14, good 14-23 and > 21very good. While practice and attitude was scored on 9 and classified as bad <5, good 5-7 and very good >7 While attitude was scored on 9 and classified as negative < 5, and very good ≥ 5.

Data was entered and double checked in Microsoft Excel and analyze using Statistical Package for Social Sciences (SPSS vs 16.0). Data were presented using descriptive statistics in the form of frequencies and percentages. Chi-square tests were used for categorical variables. A p-value of 0.05 or less was used as cut off level for statistical significance.

Results

Demographic of study population

A total of 700 questionnaires were administered, 654 (93.4%) were received and 612 (87.4%) were considered for the analysis because they were properly filled. The demographicof the study population is

shown in Table 1. The age range ofthe respondents was 18-90years with mean (SD) of 34.7(14.0) years.The highest respondents 308(50.3%) were from Ekona in the southwest Region. More female 343(56.0%) responded to the questionnaires completely.

Knowledge of Viral Hepatitis B:

The mean (SD) of knowledge score was 14.4(3.7) and ranges from 7-28 points. Out of the 612 participants, 354 (57.9%) had poor knowledge range while 221 (36.1%) and 37 (6.0%) showed good and very good Knowledge towards Hepatitis B respectively. Poor knowledge was noticeable in question partaking to the causative microbe, transmission, symptoms and treatment. Less than one quarter of the participants knew that HBV is a viral infection. The mean ± SD of knowledge toward HB was 10.4 ± 9.7. Three quarter of the respondents did not know that HB can be transmitted by blood or blood products. Similarly black colored stools, Cirrhosis, liver cancer etc were not known as symptoms of HB. On the other hand 540 (88.2%) participants said that HB had a cure. More than three quarter of the respondents knew that HB can be prevented unfortunately their knowledge on prevention was poor as shown on Table 2.

Attitude toward HB

The score ranged of attitude was 2-8points with mean (SD) score of 4.7(1.1).A total of 334 (54.6%) respondents had a positive attitude and 278(45.4%) negative attitude toward HB. Of the 612 participants, 425 (69.4%) believed that they can be infected with HB however only 415 (67.8%) were willing to do the test. Seventy (11.5%) respondents stated that they will be normal if they were diagnosed positive. On the contrary 13 (2.1%) will be afraid, 253 (41.3%) will be sad and 276(45.1%) will be surprised. A total of 594 (97.1%) were willing to take the vaccine but unfortunately at a current price of averagely 24,000CFA frs (40USD) only 147(24.0%)respondents were willing to pay for the vaccine. Of the 612 respondents, 458(74.8) were willing to share or disclose their result to someone. Only 138 (22.5%) of respondents will go to the hospital immediately after being diagnosed while a majority of the people 329 (53.8%) will wait for the signs and symptoms to manifest before they go to the hospital. In addition 138 (22.5%) respondents will prefer to go to a tradition doctors, 89 (14.5%) to church, 39(6.4%) will go to a traditional doctor and 17(2.8%) seek advice from a friend or family member. A total of 474(77.5%) respondents taught that patients with HBV should be given the last appointment in the hospital while 352(57.5%) stated that additional precautions will be taken when playing with HB patients or relatives. Most inhabitants of these two regions 191 (31.2%) will prefer to watch sport followed by movies 155 (25.3%), listen to news 128 (20.9%) and Church programs 90 (14.7%) at their leisure time than to listen to health talks 48 (7.8%). Majority of the respondents 492 (80.39%) were willing to attend a seminar or listen to a talk on HBV if it will be free Table 4.

Practices of Viral Hepatitis B:

The mean (SD) score for HB related practices was 3.8 (1.2) with a range of 2-7. Generally 463(75.7%) had poor practices while 149(24.3%) had good practices among the study participants. Out of 612 participants, only 126(20.6%) have screened for HBV and 14(2.3%) have been vaccinated against HBV. Although all the participants 612(100.0%) asked for screening of blood before transfusion and 558(91.2%) ask for a new syringe or sharps objects before use, majority of them 578(94.4%) attain to injured subjects with open wound as shown on table 3. Only 244(39.9%) of the study participants have either attendeda seminar or listen to a talk on HBV. Of these 98(40.2%) got the information from a health facility while 79(32.4%) got it from friends/relative, 38(15.6%) from Media, and 29(11.9%) fromschool.

Correlation between knowledge, attitude and practice were interpreted using the following criteria: 0–0.25 =weak correlation, 0.25–0.5 = fair correlation, 0.5– 0.75 = good correlation and greater than 0.75= excellent correlation [11]. There was an insignificant weak negative correlation between age and knowledge($r=-0.03$, $p = 0.45$), age and practice ($r=-0.003$, $p = 0.94$) and a weak positive correlation between age and attitude ($r =0.013$, $p = 0.75$). The correlation revealed a weak non significant positive

linear correlation between knowledge and attitude($r = 0.06$, $p = 0.12$)and a significantly fair positive linear correlation between knowledge and practice ($r = 0.28$, $p = 0.00$)and attitude and Practice ($r = 0.27$, $p = 0.00$).

A univariate analysis of Knowledge, showed a significant difference ($p<0.05$) in place, sex, age group, occupation, level of education and monthly income.Excellent knowledge on HB was recorded in Ekona, among females, respondents of the age group 25- 34 years, the divorced, medical practitioners, persons that have attain tertiary level of education and with the highest monthly income >150,000frs as shown on table 5

Looking at attitude a univariate analysis, showed that a significant difference ($p<0.05$) between negative and positive attitude only in place. However positive attitude toward HB was recorded highest in Ekona, with females, respondents of the age group <25years, the divorced, traders, persons that have never been in school and with monthly income of 50,000-100,000frs as shown on table 6

A univariate analysis on Practice, showed a significant difference ($p<0.05$) in the place, marital status, occupation, level of education and monthly income. Good practices on HB was recorded highest in Ekona, with females, respondents of the age group >44years, the divorced, medical practitioners, persons that have attain tertiary level of education and with the highest monthly income >150,000frs as shown on table 7.

Discussion

HBV is a major cause of the dreadful liver diseases, fortunately this virus is preventablewith the use of a safe and effective vaccine [4]. Study on KAP is essential to improve the awareness, on transmission, prevention, importance of early diagnosis for appropriate management. This study to the best of our knowledge is the first comprehensive study carried out in the entire country to obtain KAP towards HB among healthy individuals in a rural communityin an endemic area like Cameroon [20].

Results of the study revealed that a higher population 354 (57.9%) had poor knowledge on HB. Poor knowledge regarding HB has also been reported in other countries like Pakistan [11], Malaysia [10] and contradicts studies carried in Japan **[14]**, Chinese Canadians [21] and Vietnamese Americans [22]. The most probable reasons could be inadequate health educative programs present in this locality since only 244(39.9%) of the study participants had listen to health talk on HBV. Secondly 79(32.4%) got information from Friends/Relatives indicating that there is a great probability of inappropriate information given out. Misconceptions about a disease can eventually lead to stigma, poor prevention or control measures. In addition, poor knowledge recorded can also be attributed to the fact that few participants 176(28.8%) prefer to listen or watch health related programs. Improved knowledge on HB can be through improved mass media program by broadcasting health talk intermittently within other programs like sports, films, or music.

Although HBV is 50-100 times transmissible than HIV [5] most health campaigned in the country is geared towards HIV and this account for the low prevalence of 4.3% [15]. Although HIV and HBV shared common transmission and prevention means lack of knowledge on HB transmission may be attributed to high prevalence of HB 7.1% -16% [8, 20, 23, 24]seen among different groups of person in Cameroon.

Assessing the knowledge with respect to occupation, 18(90.0%) of medical practitioners recorded the highest level of very good knowledge (>21 score on 29). This is likely because the disease is studied as a

school curriculum since healthcare workers are considered to have 2–4 fold occupational risk of hepatitis infections compared to the general population [25]. This study is similar to studies by [3] but contradict those of [26] who reported low level of knowledge among healthcare workers. Taken into consideration that knowledge is usually the first step towards modification of a desirable behavior and prevention of a disease, extensive health education campaign should be provided to the general population especially at the primary level of education since most residents in rural areas usually end up their education at the primary level.

Though we recorded low level of knowledge regarding HBV, more than half 334 (54.6%) of the respondents has a positive attitude contrary to what was reported by [4]and **[11]** but similar to reports of Shalaby*et al.,* (2007). Since a total of 425 (69.4%) respondents are aware that they can get HB, this high prevalence mayinfluence their attitude in taking positive actions toward prevention of the disease [5]. A total of (91.3%) proposed that all patients should be tested for HBV similar to what is done with HIV. This is important because those who tested negative can be vaccinated against HB. In this study 394 (64.4%) were willing to take the vaccine if it was free while only 147(24.0%) were ready to pay the vaccine at the current price of about 40 UDS for the complete dose. This is due to ignorance, or lack of knowledge on the importance on vaccination. Secondly it could beassociated with the lack of initiative on the part of health policy makers in the country to ensure that all eligible persons get vaccinated at free or affordable prices since the available treatment for a hepatitis B virus infection does not provide complete cure.

A total of 458(74.8%) respondents were willing to share or disclose their result to someone. This is important so that precautions can be taken to prevent the disease or to encourage them to go for screening which could lead to early diagnosis and proper management. However unwillingness to disclose status can be attributed to stigma or social rejection [4, 10, 11].Since the level of knowledge recorded was low thus a high change of misconceptions about the disease might be very dangerous to the community.

Only 138 (22.5%) of the respondents said they will go to the hospital immediately they are diagnosis positive while 309 (50.5%) said they will go only when signs and symptoms begin to manifest. The rest of respondents 165(27%) said they will either seek advice from a relative/ friend 39(6.4%), a traditional healer 17(2.8%) or go for prayers 109(17.8%). Most respondents 228(37.2%) in our study were not aware that signs and symptoms like fever, nausea and vomiting, abdominal discomfort/pain, abdominal distension and dark urine are associated with HBV infection thus will not be able to seek medical attention on time. Secondly since these signs and symptoms are also common to other illness like malaria and typhoid most people will prefer get drugs from community drug stores or by use of local herbs. Early medical attention to a disease can stop the spread of infections to other healthy individuals or reduce deterioration of health condition and thus reduce mortality rates. Failure by the respondents to seek medical attention early can be attributed to lack of knowledge or poverty and has led to additional reasons for seeking alternative methods of treatment. Secondly the proliferation of churches in Cameroon have made people to believe in instant healing miracle as shown over television stations like the Synagogue Church of All Nations or the Christ Embassy Internationalin Nigeria and the Living Faith Ministry or Kingship Ministry in Cameroon.

Most participants 463 (75.7%) of the current study showed poor practice towards HB contrary to reports from Ethiopia [2], Rajasthan [4] and Egypt [27]. Only 126 (20.6%) have been screened for HBV while only 14 (2.3%) have been vaccinated. Low vaccine uptake has also been reported by [27]. Probably this could be due to lack of information on its importance. In terms of prevention, most respondents 578 (94.4%) said they will help injured subjects with open wound in other to save life. Similarly all participants 612 (100.0%) said they will ask for screened blood before transfusion. With the exception of

transfusion of screen blood, majority of the participants were not concerned about the safety measures to prevent HB transmission. Use of transfused blood is a good practice since it also applied to HIV prevention.

A negative correlation between age and knowledge and age and practice is clear indication that at first education of children were not considered important. Secondly younger individuals usually have better opportunity to be educated with better access to information especially through social media. Similarly positive correlation between age and attitude is clear understanding that practical work is easier to apprehend than just knowledge. The positive correlation between knowledge and attitude, between knowledge and practice and between attitude and practice seen in this study has also been reported by [8], [12] and [28]. Thus this study reiterates the relationship between knowledge and practice with respect to infection control measures.

Area of residence, sex, age group, occupation, level of education and monthly income were the significant factors associated knowledge, attitude or practice. However, extensive literature review has shown separate factors such as area of residence [11], level of education [10, 13, 21], age group [10] higher monthly income [13]. These characteristics are usually interrelated as such those with higher education have high incomes, thus better access to educational resources such as internet, that enable them to practice preventive measures. Female had better KAP score than male mostly like because they visit the health facilities than men taking into consideration that most of the respondents got information about HB from health clinics. Similarly KAP score was higher in Ekona than in Bamendankwe most probably because HIV which share similar concepts with HBV is more prevalent in the SWR than in the NWR [15] which has led to more sensitization in this area.

Although data from this study present for the first time KAP of HB in our country however it was conducted only a rural settings and may not be generalized to the entire population. Based on our findings, it is recommended that governmental and non-governmental efforts should be carried out to empower the people with adequate knowledge, effective practice and the right attitude toward HB within all levels of formal and informal school and other programs like church activities, sport etc to raise the awareness on methods of transmission, prevention and self-protection. This should be done through electronic media, newspapers, workshops and as well as intermittently during entertainment programmes like music, film and sport.It is worth mentioning that post intervention studies should be carried out to ensure the right information regarding control and prevention of transmission, has been impacted to the people. It is also recommended that campaign on HB diagnosis be instituted in all health centers and hepatitis B vaccination be administer to eligible persons for free or affordable prices.

References

1. WHO. (2015). Hepatitis B. Fact sheet N°204, [retrieved June 23, 2016] Available from, http,//www.who.int/mediacentre/factsheets/fs204/en/
2. Mesfin, Y. M. and Kibret, K. T. (2013). Assessment of Knowledge and Practice towards Hepatitis B among Medical and Health Science Students in Haramaya University, Ethiopia. *PLoS ONE, 8(11), e79642.*
3. Abiola, O. A., Adebukola, B. A., Badmos, K. B., Adenike, O. L., Abdulrazzaq, O. L. and Quadri, O. A.,(2016). Prevalence of HBsAg, knowledge, and vaccination practice against viral hepatitis B infection among doctors and nurses in a secondary health care facility in Lagos state, South-western Nigeria. *The Pan African Medical Journal. 23:160. doi:10.11604/pamj.2016.23.160.8710*

4. Baig V., N., Pankaj, K. G., Arvind, K. S. and Madhusudan, S. (2015). Assessment of knowledge, attitude and practice about hepatitis b among clinicians & medical students: a cross sectional study. *National Journal of Community Medicine 6(2): 415 -422.*
5. WHO, (2008). Hepatitis B. Factsheet No. 204. Aug., 2008. Médicins du Monde (2011) The KAP Survey Model (Knowledge, Attitudes, and Practices) Contact Institution: http://www.medecinsdumonde.org/Outils/Nous-contacter (link is external) assessed 26 June 24, 2016
6. Al-Gashanin Ali. S. and Mostafa, O. A., (2013). Knowledge, Attitude and Practice of Male Secondary School Students on Hepatitis B in Abha City, Kingdom of Saudi Arabia *Medical Journal of Cairo Univsity. 81,*(2) *155-161,*
7. Frambo,A. J.,Atashili, P. F., Ndumbe, P., (2014). Prevalence of HBsAg and knowledge about hepatitis B in pregnancy in the Buea Health District, Cameroon: a cross-sectional study. *BMC Research Notes:7,394.*
8. Abongwa. L. E. and Penn, K., (2016). Assessing prevalence and risk factors of hepatitis B surface antigen amongst pregnant women attending antenatal clinic in the northwest region of Cameroon. *European Journal of Research in Medical Sciences,* 4 (1) 32-43.
9. Emechebe, G. O., Emodi, I. J., Ifekuna, A. N., Ilechukwu, G. C., Igwe, W. C. and Ilechukwu, C. A. (2009). Hepatitis B virus infection in Nigeria-A review. *Nigerian Medical Journal. 50(1):18-22.*
10. Mohamed M., Marashi, S. A., Kabir, A., Taghipour, H. R., Faghihi, K. A. H. and Ghoddoosi, I., (2007). Knowledge, Attitude, and Practice of Surgeons about Blood-Borne Diseases in Iran. *Journal of Surgical Research. 22: 4804-4808.*
11. UlHaq, M. N., Azmi, A.,Akmal, F.,Saleem, M.,Farooqui, A.,Haseeb,…..Aljadhey, H., (2013). A cross-sectional assessment of knowledge, attitude and practice among Hepatitis-B patients in Quetta, Pakistan, *BMC Public Health.* 12:692
12. Ghanaei, R., M., Joukar, F. Fatemeh, S., and Zahra, A. R., (2013). Knowledge and attitude of medical science studentstoward hepatitis B and C infections. *International journal of clinical and experimental medicineis . 6(3):197-205*
13. Al-Thaqafy, M.S., Balkhy, H.H., Memish, Z., Makhdom, Y.M., Ibrahim, A., Al-Amri, A. and Al-Thaqafi, A.(2012). Improvement of the low knowledge, attitude and practice of hepatitis B virus infection among Saudi national guard personnel after educational intervention. BMC Research Notes. 30;5:597.
14. Eguchi, H. and Wada k. (2013).Knowledge of HBV and HCV and Individuals' Attitudes Toward HBV- and HCV-Infected Colleagues: A National Cross-Sectional Study among a Working Population in Japan.*PLOS ONE 8 (9) e76921.*
15. Institut National de la Statistique (INS). (2011). The 2011 Cameroon Demographic and Health Survey and Multiple Indicators Cluster Survey (DHS-MICS 2011). :1-2
16. Das, S., Das, S. K., (2013). Knowledge, attitude and practice of stroke in India versus other developed and developing countries. *Annals of Indian Academy of Neurology, 16*(4), 488–493.
17. Mbanya, D. N., Zebaze, R., Kengne, A. P.,Minkoulou, E. M., Awah, P. and Beure (2001). Knowledge, attitudes and practices of nursing staff in a rural hospital of Cameroon: how much does the health care provider know about the human immunodeficiency virus/acquired immune deficiency syndrome?. *International Nursing Review, 48: 241–249. doi: 10.1046/j.1466-7657.2001.00090.*
18. Sobze, S. M.,Fokam, J., Guetiya, W. R., Russo, G., Onohiol, J. F., Djeunang, D. B., ……Sanita,I. P.,(2013). Condom perception and prevention of HIV/AIDS infection in Cameroon: appraisal of knowledge, attitudes and practices among level one students of the University of Dschang. Ig Sanita Pubbl *69(2):183-94.*
19. Zenebe, Y., Wondemagegn, M., Mulat, Y.,Bayeh, A.,(2014). Sero-prevalence and risk factors of hepatitis B virus and human immunodeficiency virus infection among pregnant women in Bahir Dar city, Northwest Ethiopia: a cross sectional study. *BMC Infectious Diseases 14:118.*

20. Andoulo, A. F., Tagni-Sartre, M., Noah, D., Djapa, R., Claude, E. and Ndam, N. (2013). Prevalence of the hepatitis B surface antigen in a population of workers in Cameroon. *Open Journal of Gastroenterology, 3(8),* 323-327.
21. Wu, C. A., Lin, S. Y., So, S. K. and Chang, E. T.,(2007). Hepatitis B and liver cancer knowledge and preventive practices among Asian Americans in the San Francisco Bay Area California. *Asian Pacific journal of cancer prevention 8:127.*
22. Taylor, V. M., Choe, J. H., Yasui, Y., Li, L., Burke, N. and Jackson, J. C.,(2005). Hepatitis B awareness, testing, and knowledge among Vietnamese American men and women. *Journal of Community Health 30(6):477-90.*
23. Zekeng, L., Kaptue, L., (1990). HIV 1 serology and HBsAg and HBeAg carrier status in blood donors at the Yaounde University Hospital, Cameroon. *Annales de la SociétéBelge de MédecineTropicale,70, 49-53.*
24. Koanga, M. M.L., Louandji, F. S., Fotso, K. H.,Ngono, N. A., (2009). Detection of infectious agents in blood banks in Douala. *Cahiers d'Etudeset de RecherchesFrancophones/Santé, 19, 3-8.*
25. Cekin, A. H., Cekin, Y., Ozdemir, A., (2013). The level of knowledge of, attitude toward and emphasis given to HBV and HCV infections among healthcare professionals: data from a tertiary hospital in Turkey. *International Journal of Occupational Medicine and Environmental Health 26.1 : 122-31.*
26. Adeiga, A., Omilabu, S. A., Audu, R. A., Sanni, F. A., Lakehinde, G. F. and Balogun, O., (2005).Infant immunization coverage in difficult-toreach area of Lagos metropolis. *African Journal of Clinical and Experimental Microbiology. 6(3):227-31.*
27. Shalaby, S., Kabbash, I., El-Saleet, G., Mansour, N., Omar, A., El-Nawawy, A., (2007). Hepatitis B and C viral infection: prevalence, knowledge, attitude and practice among barbers and clients in Gharbia governorate, Egypt. *Eastern Mediterranean Health Journal 2007, 16:10–17.*
28. Kabir. A., Tabatabaei, S. V., Khaleghi, S., Agah, S., Kashani, A. H. F., Moghimi,M.,…….Kerahroodi, F. H., (2010). Knowledge, attitudes and practice of Iranian medical specialists regarding hepatitis B and C. *Hepatitis Monthly, 10:176–182.*
29. Razi, A., Ur-Rahman, R., Naz, S., Ghafoor, F.,Ullah, K. M. A., (2010). Knowledge attitude and practices of university students regarding hepatitis B and C. *ARPN Journal of Agricultural and Biological Science 5: 38-43.*

Acknowledgment
The authors would like to thank the study participants for their cooperation.

Competing interests
The authors have declared no competing interests.

TABLES

Table1: Demographics and basic characteristicsof the study respondents (N = 612)

Characteristics	indicators	N	%
Place	Bamenda	304	49.7
	Ekona	308	50.3
Sex	female	343	56.0
	male	269	44.0
Age group	<25years	176	28.8
	25- 34 years	198	32.4
	35-44 years	96	15.7
	>44years	142	23.2
Marital Status	concubine	22	37.6
	widow/er	35	46.9
	divorced	38	3.6
	single	230	5.7
	married	287	6.2
Occupation	medical practitioner	20	8.5
	trader	32	5.7
	civil servant	35	34.5
	student	52	3.3
	Farmer	211	5.2
	technician	262	42.8
Level of education	none	296	48.4
	secondary	179	29.2
	primary	105	17.2
	tertiary	32	5.2
Income	<50,000frs	243	39.7
	50,000-100,000frs	160	26.1
	101,000-150,000frs	137	22.4
	>150,000frs	26	4.2
	NA	46	7.5

Table 2: Responses of the study participants to Hepatitis B knowledge items

Question	Yes	No
Hepatitis B is a Viral Infection	103(16.8%)	509(83.2%)
Mode of Transmission		
Transfusion	265 (43.3%)	347 (56.7%)
Sharp objects	158 (25.8%)	454 (74.2%)
Intercourse	210 (34.3%)	402 (65.7%)
Mother to child	274 (44.8%)	338 (55.2%)
Sharing household facilities like toilet seat, bed	298 (48.7%)	314 (51.3%)
Insect bite	32 (5.2%)	580 (94.8%)
Symptoms		
Black colored stools	17 (2.8%)	595(98.2%)
Cirrhosis	195 (31.9%)	417 (68.1%)
Cough	402(65.7%)	210 (34.3%)
Dark Urine	93 (15.2%)	519(84.8 %)
Distention of abdomen	221(36.1%)	391 (63.9%)
Feeling tired (fatigue)	395 (64.5%)	217(35.5 %)
Fever	286(46.6 %)	326 (53.3%)
Jaundice	198 (32.4%)	414 (67.5%)
Nausea and vomiting	485(79.2%)	127 (20.8%)
Pain over the liver	241 (39.4%)	371(60.6%)
Liver cancer	332(54.2%)	280 (45.8%)
Diagnosis		
Do you think HBV can be diagnose in most laboratory	498 (81.4%)	114 (18.6%)
Treatment		
Can Hepatitis B be self-cured by body	119 (19.4 %)	(80.6%)
Is Hepatitis B curable/treatable	540 (88.2%)	72 (11.8%)
Is specific diet is required for the treatment of Hepatitis B?	129 (21.1%)	483(78.9%)
Prevention and control		
Could we prevent HB transmission	561 (91.7%)	51 (8.3%)
Is vaccination available for Hepatitis B	404 (66.0%)	208(34.0%)
Proper screening of blood and blood products	288 (47.1%)	324(52.9%)
Sterilize needles and medical equipment	122 (19.9%)	490(80.1%)
Safer sex practices	106 (17.3%)	506(82.7%)
Isolation of patients	401 (65.5%)	211 (34.5%)
Hepatitis B be test is done before marriage	337(55.1%)	275 (44.9%)

Table 3: Proportion of responses toward attitudes items related to hepatitis B

Characteristic	Positive	Negative
Do you think you can get Hepatitis B?	425 (69.4%)	187 (30.6%)
All patients should be tested for HBV	559 (91.3%)	53 (8.7%)
Hepatitis B test should be done before marriage	194 (31.7%)	418(68.3%)
Will you like to do the test	415 (67.8%)	197 (32.2%)
If you test negative will you like to take the vaccine	594 (97.1%)	18 (2.9%)
If the vaccine is 10000 will you pay for it	147(24.0%)	465(76.0%)
How will you treat someone with HBV		
Patients with HBV should be given the last appointment	138 (22.5%)	474(77.5%)
Have you ever participated in health education program related to HB?	284 (46.4%)	328(53.6%)
Give additional precautions when playing with HB patients or relatives	260 (42.5%)	352(57.5%)
Isolating infected person from work/daily activity	28 (4.6%)	584(95.4 %)
Clean utensil or toilet after use by an infected person	201 (32.8%)	411 (67.2%)

Table 4: Practice related to Hepatitis B prevention

Question	Yes	No
Have you screened for HBV	126 (20.6%)	486(79.4%)
Are you vaccinated	14 (2.3%)	598(97.7%)
Do you avoid meeting Hepatitis B patients?	119 (19.4%)	493 (80.6%)
Can play with his/her house member	290 (47.4%)	322 (52.6%)
Eating food prepared by an infected person	277 (45.3%)	335 (54.7%)
Sharing eating tools and other house material	612 (100.0%)	0(0.0%)
Helping injured subjects with open wound	578 (94.4%)	34 (5.6%)
Do you ask for screening of blood before transfusion	612 (100.0%)	0(0.0%)
Do you ask for a new syringe or sharps before use	558 (91.2%)	54 (8.8%)
Have either attend a seminar or listen to a talk on HBV	244(39.9%)	368(60.1%)

Table 5: Univariate analysis of association between Knowledge of HB and socio-demographic characteristics

Characteristics	Indicators	Poor	Good	Excellent	χ^2	P value
Place	Bamenda	194 (63.8%)	101 (32.2%)	9 (3.0%)	14.63	0.001
	Ekona	160 (51.9%)	141 (45.8%)	29 (9.4%)		
Sex	Female	151 (44.0%)	164 (47.8%)	28 (8.2%)	61.15	0.000
	Male	203(75.5%)	57 (21.1%)	9 (3.3%)		
Age group	<25years	80 (45.4%)	86 (48.9%)	10(45.7%)	22.99	0.001
	25- 34 years	117 (59.1%)	64 (32.3%)	17 (8.6%)		
	35-44 years	58(67.7%)	31(25.0%)	7 (7.3%)		
	>44years	99 (66.9%)	40 (26.8%)	3 (6.3%)		
Marital status	Concubine	12 (54.5%)	10 (45.5%)	0 (0.0%)	5.49	0.70
	Widow/er	13 (37.1%)	21 (60.0%)	1 (2.9%)		
	Divorced	19 (50.0%)	15(39.5%)	4 (10.5%)		
	Single	133 (57.8%)	80 (34.8%)	17 (7.4%)		
	Married	169 (58.9%)	103 (35.9%)	15 (5.2%)		
Occupation	Farmer	124(58.8%)	81 (38.4%)	6(2.8%)	262.1	0.00
	Civil servant	18 (51.4%)	15(42.9%)	2 (5.7%)		
	Medical practitioners	0 (0.0%)	2 (10.0%)	18(90.0%)		
	Student	29 (55.8%)	22 (42.3%)	1 (1.9%)		
	Trader	16(50.0%)	14 (43.8%)	2 (6.2%)		
	Technician	167(63.7%)	87(33.2%)	8(3.1%)		
Level of education	None	182 (61.5%)	104 (35.1%)	10 (3.4%)	22.32	0.00
	Primary	64 (60.9%)	36(34.3%)	5 (4.8%)		
	Secondary	101 (56.4%)	68(37.9%)	10 (5.5%)		
	Tertiary	7 (21.8%)	13(40.6%)	12 (37.5%)		
Income	<50,000frs	150 (61.7%)	84 (34.6%)	9 (3.7%)	19.48	0.01
	50,000-100,000frs	91 (56.9%)	61 (38.1%)	8 (5.0%)		
	101,000-150,000frs	83(60.6%)	45 (32.8%)	9 (6.6%)		
	>150,000frs	8(30.8%)	8 (30.8%)	10 (38.4%)		
	Na	22 (47.8%)	23 (50.0%)	1 (2.2%)		

Table 6: Univariate analysis of association between Attitude toward HB and socio-demographic characteristics

Characteristics	Indicators	Negative	Positive	χ^2	P value
Place	Bamenda	211 (69.4%)	93 (30.6%)	140.2	0.000
	Ekona	67 (21.8%)	241 (78.2%)		
Sex	Female	152 44.3 (%)	191 (55.7%)	0.388	0.533

	Male	126 (46.8%)	143 (53.2%)		
Age group	<25years	75 (42.6%)	101 (57.4%)	0.83	0.842
	25- 34 years	92 (46.5%)	106 (53.5%)		
	35-44 years	44 (45.8%)	52 (54.2%)		
	>44years	67 (47.2%)	75 (52.8%)		
Marital status	Concubine	11 (50.0%)	11 (50.0%)	2.297	0.681
	Widow/er	12 (34.3%)	23 (65.7%)		
	Divorced	16 (42.1%)	22 (57.9%)		
	Single	105 (45.7%)	125 (54.3%)		
	Married	134 (46.7%)	153 (53.3%)		
Occupation	Medical practitioner	7 (35.0%)	13 (65.0%)	5.587	0.348
	Trader	11 (34.4%)	21 (65.6%)		
	Civil servant	19 (54.3%)	16 (45.7%)		
	Student	25 (48.1%)	27 (51.9%)		
	Farmer	89 (42.2%)	122 (57.8%)		
	Technician	127 (48.5%)	135 (51.5%)		
Level of education	None	125 (42.2%)	171 (57.8%)	2.996	0.392
	Secondary	88 (49.2%)	91 (50.8%)		
	Primary	48 (45.7%)	57 (54.3%)		
	Tertiary	17 (53.1%)	15 (46.9%)		
Income	A50,000frs	117 (48.1%)	126 (51.9%)	3.739	0.443
	50,000-100,000frs	66 (41.2%)	94 (58.8%)		
	101,000-150,000frs	59 (43.1%)	78 (56.9%)		
	>150,000frs	15 (57.7%)	11 (42.3%)		
	Na	21 (45.7%)	25 (54.3%)		

Table 7: Univariate analysis of association between Practice toward HB and socio-demographic characteristics

Characteristics	Indicators	Bad	Good	χ^2	P value
Place	Bamenda	275 (90.5%)	29 (9.5%)	71.90	0.000
	Ekona	188 (61.0%)	120 (39.0%)		
Sex	Female	253 (73.8%)	90 (26.2%)	1.52	0.218
	Male	210 (78.1%)	59 (21.9%)		
Age group	<25years	139 (79.0%)	37 (21.0%)	6.98	0.073
	25- 34 years	143 (72.2%)	55 (27.8%)		
	35-44 years	80 (83.3%)	16 (16.7%)		
	>44years	101 (71.1%)	41 (28.9%)		
Marital status	Concubine	20 (90.9%)	2 (9.1%)	10.07	0.039
	Widow/er	30 (85.7%)	5 (14.3%)		
	Divorced	26 (68.4%)	12 (31.6%)		
	Single	182 (79.1%)	48 (20.9%)		
	Married	205 (71.4%)	82 (28.6%)		
Occupation	Medical practitioner	5 (25.0%)	15 (75.0%)	40.66	0.000
	Trader	27 (84.4%)	5 (15.6%)		
	Civil servant	21 (60.0%)	14 (40.0%)		
	Student	47 (90.4%)	5 (9.6%)		
	Farmer	159 (75.4%)	52 (24.6%)		
	Technician	204 (77.9%)	58 (22.1%)		
Level of education	None	250 (84.5%)	46 (15.5%)	61.55	0.000
	Secondary	143 (79.9%)	36 (20.1%)		
	Primary	57 (54.3%)	48 (45.7%)		
	Tertiary	13 (40.6%)	19 (59.4%)		
Income	<50,000frs	183 (75.3%)	60 (24.7%)	14.66	0.005
	50,000-100,000frs	128 (80.0%)	32 (20.0%)		
	101,000-150,000frs	97 (70.8%)	40 (29.2%)		
	>150,000frs	14 (53.8%)	12 (46.2%)		
	Na	41 (89.1%)	5 (10.9%)		