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Prevalence of HBV and HCV among Pregnant Women Attending Kumasi South Hospital (KSH), Ghana

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Authors' contributions

This work was carried out in collaboration among all authors. Authors SSO and AKA designed the study and wrote the protocol. Authors SSO, AKA and PKK performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Authors MKK, SAA and PKK managed the analyses of the study. Authors MKK and SAA managed the literature searches. All authors read and approved the final manuscript.

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ABSTRACT

Background and Aim: Both HBV and HCV infections have for decades remained serious public health concerns infecting thousands of people and claiming the lives of millions. The detrimental effects of these viral agents on the gravid women, the infants and the general population are well known and cannot be underestimated. Adequate and quality information on the disease prevalence remain one of the surest ways to tackling the infection head-on. This study therefore assessed the seroprevalence of HBV and HCV among pregnant women who received antenatal care services from the Kumasi South Hospital of the Kumasi Metropolis in the Ashanti Region of Ghana.
Materials and Methods: A semi-structured questionnaire designed to capture participant's demographic and gestational data including age, occupation, marital status, educational status and gestational period was administered by the researcher to 200 pregnant women to collect the data

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for this study. About 2-3mls of whole blood was drawn into an ethylenediamine tetraacetic acid (EDTA) and tested for HBsAg using Alere Determine HBsAg® test strip (sensitivity=95-100% and specificity=96-100%; Abbott Japan Co., Ltd.) and HCV antibodies using Serodia® HCV (sensitivity=100% and specificity=91.5%; Serodia, Fujirebio Inc., Tokyo, Japan) following standard procedures. Due to the lack of more advanced testing facilities such as PCR, each positive test result was repeated in order to reduce the possibility of false positive results. Data was analyzed using Microsoft Excel 2016 and IBM SPSS vs 25. Chi-square and Fisher's exact test statistic were used to determine statistical associations between explanatory and outcome variables. Logistics regression was employed to determine potential demographic and gestational risk factors of HBV and HCV infection among the pregnant women. P-value of less than 0.05 was considered statistically significant.

Results: Seroprevalence of HBV and HCV infection was 20.0% and 2.5% respectively. HBV infection increased with advancement in age from the least 7.1% among pregnant women aged < 20 years to the highest 22.0% among pregnant women aged 30-39 years until a sharp decline among those forty years and above. HCV prevalence generally declined with increase in age with the highest prevalence (14.3%) recorded among the <20 years old group. Unemployed (22.2%), married (20.3%), basic level educated (20.9%) and multiparous (21.3%) pregnant women recorded the highest HBV prevalence rates whereas unemployed (11.1%), unmarried (5.8%), basic level educated (3.4%) and multiparous (3.2%) pregnant women recorded the highest HCV prevalence rates. None of the demographic or gestational risk parameters was significantly associated with HBV infection in this study (p>0.05) however, age was significantly associated with HCV infection yet posed not significantly high likelihood to HCV infection among the pregnant women.

Conclusion: The HBV prevalence as recorded is highly endemic and therefore requires urgent round table discussions to be properly addressed. Despite the low HCV prevalence, the futuristic detrimental effects it may pose to the general wellbeing of the citizenry cannot be in doubt owing to the high prevalence dominating among the younger pregnant women. Measures such as intensified public education coupled with mass screening and vaccination and treatment of HBV seronegative and positive individuals respectively is therefore advised to mitigate further spread of the disease.

Keywords: Hepatitis B; hepatitis C; pregnant women; prevalence; Kumasi.

1. INTRODUCTION

Viral associated hepatitis refers to the inflammation of the hepatocytes as a result of viral infection. Types B, and C of the viral hepatitis forms the three common types among the five types of the hepatitis viruses including hepatitis A, B, C, D, and E [1]. Hepatitis B virus (HBV); a DNA virus of the family hepadnaviridae with partially double-stranded DNA and a core antigen surrounded by a shell containing hepatitis B surface antigen (HBsAg) is the causative agent of hepatitis B infection [2]. According to the World Health Organization (WHO), hepatitis B infection is a major public health concern affecting approximately 257 million people globally with sub-Saharan Africa (SSA) and Asia disproportionately affected with a prevalence estimate of 5–10% among the adult population [3]. In the year 2015, an estimated 1.34 million deaths was reported globally as a result of viral hepatitis infection with hepatitis B and C viruses (HBV&HCV) alone responsible for 96% of hepatitis mortality [4]. It must be noted that HCV is up to 4 times more contagious than the human immunodeficiency virus (HIV), requiring less exposure than HIV to cause infection [5]. It is a well-known fact that pregnancy in women with chronic HBV or HCV infection is associated with mother-to-child transmission (MTCT), with these pregnancies shown to be associated with an increased risk of maternal and fetal complications [1,6]. The transmission of the infection to the newborn typically occurs during birth or soon after birth following close contact with infectious bodily fluids or inanimate objects. The likelihood of chronic HBV infection among newborns who are exposed to the virus is about 85–90% [4]. The minimum infectious dose is so low that such practices like sharing a tooth brush or a razor blade can transmit infection. The virus has been detected in peripheral mononuclear cells, tissues of pancreas, spleen, kidney and skin, and fluids like saliva, semen, sweat, breast milk, tears, urine and vaginal secretion. Complications associated with hepatitis B, such as cirrhosis and hepatocellular carcinoma, account for 780,000 global deaths annually [3,4,7].

Hepatitis C virus is an RNA virus of the flaviviridae family and appears to have humans and chimpanzees as the only species susceptible to its infection. Infection with hepatitis C virus (HCV) and the associated pathological consequence is analogous to those of HBV infection. When not detected early for treatment, HCV infection can lead to complications such as liver cirrhosis and hepatocellular carcinoma (HCC), which have been tagged as the principal cause for liver transplant in the United States [8]. According to the WHO, 71 million of the world's population is chronically infected with HCV, resulting in approximately 399,000 fatalities annually [9], 5.3% of which has been reported in Sub-Saharan Africa [10,11]. The major causes of HCV infection worldwide are use of unscreened blood transfusions, and re-use of needles and syringes that have not been adequately sterilized [12].

HBV and HCV account for a substantial portion of liver diseases worldwide and infected individuals can remain asymptomatic for decades. Adequate data on the epidemiology of HBV and HCV most especially in endemic developing counties and among the vulnerable group vis-à-vis the pregnant women is essential for informed decision making such as health interventions for disease prevention and control. Different prevalence rates have been reported among pregnant women in different jurisdictions within the African continent. In Sana'a, Yemen, HBV and HCV prevalence rates of 10.8% and 8.5% respectively [6]. HBV prevalence rates of 4.7%, 6.9% and 11.8% was reported among Ethiopian [4], Eastern Ethiopian [13] and Northern Ugandan [14] gravid women respectively. Comparably, HCV infection rates of 1.42%, 4.66% and 6.1% was recorded among similar population in Peshawar, Pakistan [15], district Nowshera, Khyber Pakhtunkhwa [16] and a rural district in Egypt [17] respectively. Information on HBV and especially HCV sero-prevalence among pregnant women in Ghana is lacking. HBV and HCV prevalence rates of 10.0% and 12.0% among pregnant women in the Brong-Ahafo Region [18] and 9.5% and 7.7% among pregnant women in the Asante Akim North Municipality of the Ashanti region [19] both in Ghana was documented. The need for data on the prevalence rates within the individual districts cannot be in doubt. Population-targeted government and relevant stakeholder interventions is hinged on the availability of such information. There is no established data of HBV and HCV seroprevalence rates among the study population hence the need for this study.

2. MATERIALS AND METHODS

2.1 Study Design / Eligibility Criteria

A cross-sectional study using simple random sampling technique was employed to ascertain the prevalence of HBV and HCV infections among pregnant women who assessed antenatal care services at the Kumasi South Hospital situated at Agogo, a suburb of Kumasi in the Ashanti Regional Capital of Ghana. The hospital is the second largest hospital in the southern part of the Ashanti Region of Ghana. The hospital was constructed in 1976 as an urban health center but was converted to Kumasi South Hospital. The hospital is located in the Kumasi Metropolis with a projected population of 3,490,000 [20] and rendering services including general medical care, public health, laboratory services and training of medical residents. The study recruited pregnant women either pregnant for the first time and/or had been pregnant before and were registered attendees at the antenatal clinic hospital. Pregnant women who had been vaccinated against HBV infection as well as pregnant women who registered with the clinics but were not residents of the district were excluded from the study. Pregnant women who declined participation in the study were also excluded from the study.

2.2 Data Collection and Analysis

2.2.1 Questionnaire administration

A semi-structured questionnaire designed to capture participant's demographic and gestational data was administered by the researcher to 200 pregnant women to collect the data for this study. The questionnaire also had room for the laboratory results of HBV and HCV to be recorded. Socio-demographic and gestational details obtained for this study include the age, occupation, marital status, educational status and gestational period of the participants. The questionnaire was administered in the language best understood by the study participant predominantly Asante Twi and English.

2.3 Blood Sample Collection and Analysis

About 2-3 mls of whole blood was drawn predominantly from the median cubital vein or

any other dominant vein from the antecubital fossa of the participants using sterile syringe and needle into an ethylenediamine tetraacetic acid (EDTA). The blood was gently mixed with the anticoagulant and then centrifuged at 1500 rpm for 3 min to obtain the plasma. Serologic marker for hepatitis B surface antigen was determined using Alere Determine HBsAg® test strip (sensitivity=95-100% and specifivity=96-100%; Abbott Japan Co., Ltd.) while and antibodies to HCV were tested for using Serodia® HCV (sensitivity=100% and specificity=91.5%; Serodia, Fujirebio Inc., Tokyo, Japan). Due to the lack of more advanced testing facilities such as PCR, each positive test result was repeated in order to reduce the possibility of false positive results. All serologic assays were carried out following strictly the manufacturer's instruction. The results were then read accordingly and recorded on each participant's questionnaire.

2.4 Data Analysis

Data collected were entered into Microsoft Excel 2016 using a fit-for-purpose excel form in order to avoid data entry errors. Data were then checked for consistency and completeness and then transferred into IBM SPSS vs 25 for statistical analysis. The results are presented in the form of frequencies and percentages in tables and figure. Chi-square and Fisher's exact test statistic were used to determine statistical associations between explanatory variables and outcome variables. Binary logistics regression was employed to determine potential demographic and gestational risk factors of HBV and HCV infection among pregnant women in the studied setting. P-value of less than 0.05 was considered statistically significant.

3. RESULTS

This study recruited 200 pregnant women receiving antenatal care services at the Kumasi South Hospital. The women were averagely 27 years old (27.42 ± 6.12). The greater proportion fell within the age category of 20-29 years (59.5%), worked in the informal sector (84.0%) and were married (74.0%). The majority were only able to make it up to their basic level education (74.0%) and had birthed more than one child (multiparous) (47.0%) at the time of the study (Table 1).

Of the 200 pregnant women studied, the seroprevalence of HBV was determined to be 20.0% while that of HCV was determined to be 2.5 % (Fig. 1).

Table 1. The demographics of pregnant women attending antenatal clinic

Variable	Frequency (n = 200)
Age (Mean ± SD)	27.42 ± 6.12
Age group (years)	
<20	14(7.0)
20-29	119(59.5)
30-39	59(29.5)
≥40	8(4.0)
Occupation	
Unemployed	9(4.5)
Informal	168(84.0)
Formal	23(11.5)
Marital status	
Unmarried	52(26.0)
Married	148(74.0)
Education	
Basic	148(74.0)
Secondary	39(19.5)
Tertiary	13(6.5)
Parity	
Nulliparous	42(21.0)
Primiparous	64(32.0)
Multiparous	94(47.0)

Data is presented as figures and percentages for categorical variables and mean ± standard deviation for continuous variables

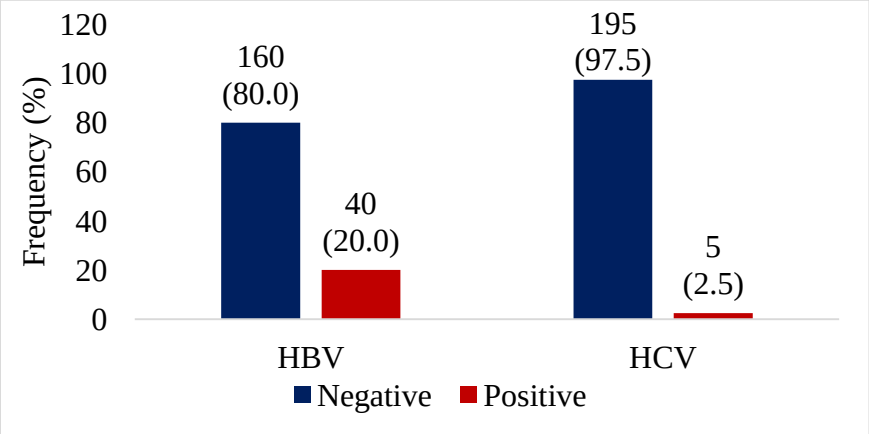

Fig. 1. Prevalence of HBV and HCV among the pregnant women. HBV; Hepatitis B Virus, HCV; Hepatitis C Virus

In this study, the seroprevalence of HBV increased with advancement in age from the least 7.1% among pregnant women aged < 20 years to the highest 22.0% among pregnant women aged 30-39 years until a sharp decline among those forty years and above. The trend of infection was however not statistically significant (x^2=0.003; p=0.957). Unemployed (22.2%), married (20.3%) and pregnant women with basic level education (20.9%) recorded the highest HBV prevalence rates in this study. Women who have had more than one child (multiparous; 21.3%) recorded the highest HBV prevalence followed closely by those who are yet to have their first child (nulliparous; 19.0%) and those who have birthed their first child already (primiparous; 18.8%). Only one of the pregnant women have had a blood transfusion but however tested negative for the virus. None of the demographic or gestational risk parameters was significantly associated with HBV infection in this study (p>0.05). Binary logistics regression analysis revealed that, pregnant women aged 20-29 years (OR=3.6; 95% CI 0.5-29.1) and 30-39 years (OR=3.7; 95% CI 0.4-30.8) where approximately four times at risk of contracting HBV infection however, the odds were not statistically significant (Table 2).

Among the pregnant women studied, the seroprevalence of HCV dominated among pregnant women below 20 years of age and generally declined with advancement in age. The trend of infection was not statistically significant (x^2=3.028; p=0.082). Unemployed, unmarried, basic level educated and multiparous pregnant women recorded the highest HCV prevalence rates of 11.1%, 5.8%, 3.4% and 3.2% respectively. Only age was significantly associated with HCV infection among the pregnant women studied. Meanwhile, none of the sociodemographic or gestational factors studied posed a significant likelihood of HCV infection among the pregnant women studied (Table 3).

Table 2. Binary Logistics regression of sociodemographic and gestational risk factors associated with HBV infection among pregnant women

Variable	HBV Status		*p*	X^2	OR (95% CI)
	Negative (n = 160)	Positive (n = 40)			
Age (Mean ± SD)	27.49 ± 6.24	27.18 ± 5.66	0.773		
Age group (years)					
<20	13(92.9)	1(7.1)	0.278	3.853	1
20-29	93(78.2)	26(21.8)	0.957**	0.003	3.6(0.5-29.1)
30-39	46(78.0)	13(22.0)			3.7(0.4-30.8)
≥40	8(100.0)	0(0.0)			-
Occupation					
Unemployed	7(77.8)	2(22.2)	0.672	0.796	1.9(0.3-13.9)
Informal	133(79.2)	35(20.8)			1.7(0.5-6.2)
Formal	20(87.0)	3(13.0)			1

Variable	HBV Status		*p*	X^2	OR (95% CI)
	Negative (n = 160)	Positive (n = 40)			
Marital status					
Unmarried	42(80.8)	10(19.2)	0.872	0.026	1
Married	118(79.7)	30(20.3)			1.1(0.5-2.4)
Education					
Basic	117(79.1)	31(20.9)	0.836	0.358	1.5(0.3-6.9)
Secondary	32(82.1)	7(17.9)			1.2(0.2-6.7)
Tertiary	11(84.6)	2(15.4)			1
Parity					
Nulliparous	34(81.0)	8(19.0)	0.913	0.182	1
Primiparous	52(81.3)	12(18.8)			0.9(0.4-2.6)
Multiparous	74(78.2)	20(21.3)			1.1(0.5-29)
Received Blood Transfusion					
Yes	1(100.0)	0(0.0)	0.616	0.251	-
No	159(79.9)	40(20.1)			-

*Data is presented as figures and percentages for categorical variables and mean ± standard deviation for continuous variables; SD-standard deviation; OR-Odds ratio; CI-Confidence interval; ** chi-square for trend*

Table 3. Binary Logistics regression of sociodemographic and gestational risk factors associated with HCV infection among pregnant women

Variable	HCV Status		*p*	X2	OR (95% CI)
	Negative (n = 195)	Positive (n = 5)			
Age (Mean ± SD)	27.54 ± 6.09	23.00 ± 6.04	0.101		
Age group (years)					
<20	12(85.7)	2(14.3)	0.034	8.668	1
20-29	117(98.3)	2(1.4)	0.082**	3.028	0.1(0.0-0.8) *
30-39	58(98.3)	1(1.7)			0.1(0.0-1.2)
≥40	8(100.0)	0(0.0)			-
Occupation					
Unemployed	8(88.9)	1(11.1)	0.121	2.410	1
Informal	164(97.6)	4(2.4)			0.2(0.0-2.0)
Formal	23(100.0)	0(0.0)			-
Marital status					
Unmarried	49(94.2)	3(5.8)	0.079	3.081	1
Married	146(98.6)	2(1.4)			0.2(0.0-1.4)
Education					
Basic	143(96.6)	5(3.4)	0.406	1.802	-
Secondary	39(100.0)	0(0.0)			-
Tertiary	13(100.0)	0(0.0)			-
Parity					
Nulliparous	41(97.6)	1(2.4)	0.812	0.418	1
Primiparous	63(98.4)	1(1.6)			0.7(0.3-10.7)
Multiparous	91(96.8)	3(3.2)			1.4(0.1-13.4)
Received Blood Transfusion					
Yes	1(100.0)	0(0.0)	0.872	0.026	-
No	194(97.5)	5(2.5)			-

Data is presented as figures and percentages for categorical variables and mean ± standard deviation for continuous variables; SD-standard deviation; OR-Odds ratio; CI-Confidence interval;
** statistically significant odds ratio; ** chi-square for trend*

4. DISCUSSION

Viral hepatitis during pregnancy have been identified to be highly associated with increased risk of maternal complications [1,6]. Of note is the high likelihood of progression to chronic status among infants infected via vertical transmission or through horizontal transmission before the age of 5 years [21]. Severe jaundice in pregnancy, maternal mortality due to disease complications such as liver cirrhosis and hepatocellular carcinoma (HCC) [21] as well as impaired mental and physical health in the neonate remain major manifestations of viral hepatitis [12]. It is therefore of public importance to ensure that adequate epidemiological input by way of scientific research is made in order to bring to bear the prevalence of these highly pathologic infections to among other things inform health management and relevant stakeholders for disease prevention and control among the population especially the vulnerable category such as the pregnant women.

This study assessed the prevalence of HBV and HCV infections among pregnant women who received antenatal services from the Kumasi South Hospital in the Kumasi Metropolis of the Ashanti Region of Ghana. The study found an overall HBV and HCV prevalence rates of 20.0% and 2.5% respectively. The prevalence of HBV as recorded in this study represents a highly endemic prevalence, ≥ 8% [22] among the study population. This prevalence of HBV is higher than the 3.67-16.5% estimated prevalence range among pregnant women in Africa [23] and certainly higher than the 7.9% (95% CI, 4.7–11.9%) recorded in South Western Ethiopia [23], 6.7% in Gamawa Local Government Area, Bauchi State, Nigeria [24], 11% in Juba Teaching Hospital, Republic of South Sudan [25] and 2.4 % (0.0%-5.2%) in East Wollega Zone, West Oromia, Ethiopia [21] among similar study populations. Compared to related studies carried out in Ghana, the 20.0% HBV prevalence recorded in this study is higher than 2.4% documented among pregnant women in the Volta Region [26], 9.5% in the Asante Akim North Municipality of the Ashanti region [19], 4.2% in Tamale Metropolis [27] and 7.7% at the Korle-Bu Teaching Hospital [28]. The closest higher prevalence of HBV infection among pregnant women in the West African subregion was 19.5%, recorded in Federal Medical Centre (FMC) Keffi, Central Nigeria [29] in about two and half years ago. Several factors could account for the variations in the HBV prevalence rates compared to that recorded in this study. These may include the deviations in the sexual behaviors and cultural practices of the studied group, the level of knowledge of the pregnant women on the infection and their attitude and practices towards ensuring self-protection from the infection, the geographical disparities between the countries or regions within which the study is conducted as well as the method employed for viral detection. Meanwhile, it is important to note that promiscuity among the studied population regardless of their marital status has been a common practice so much so that the situation of a single woman baring children belonging to different men isn't an uncommon occurrence among occupants from the studied area. This could therefore be one of the major contributors of the high HBV prevalence recorded in this study especially considering the fact that HBV infection was highest among married pregnant women (20.3%) than their unmarried counterparts (19.2%). This development needs the attention it can get from Ministry of Health, the Ghana Health Service and all relevant stakeholders who has interest in the wellbeing of the Ghanaian people to come to the discussion table in other to bring the situation under control.

The prevalence of HCV infection among pregnant women have not been widely assessed in Ghana. Indeed, a lot more attention seems to be given HBV infection than HCV by researchers and health educationist in the country. It must be noted that HCV is up to 4 times more contagious than the human immunodeficiency virus (HIV), requiring less exposure than HIV to cause infection [5] and therefore need to be accorded the needed attention as much as given other viral agents such HBV and HIV. The 2.5% HCV prevalence rate as recorded in this study falls within the estimated universal prevalence range of 0.5-6.5% but higher than that of Western countries and Australia (0.5-1.5%), South-east Asia and Eastern Mediterranean (0.5-2.3%), India (0.5-0.9%) and Indonesia (0.5-2.2%) [30]. The HCV prevalence recorded in this study is also higher than the 0.6% recorded in Bahir Dar city, Northwest Ethiopia [31], 1.8% in Atat Hospital, Southern Ethiopia [32] and 1.42% in Peshawar, Pakistan [15] but however lower than that recorded among pregnant women in other jurisdictions [12,16,17,21] including the 7.7% recorded among pregnant women in the Asante Akim North Municipality of the Ashanti region of Ghana [19]. The low HCV prevalence

documented in this study could be due to the general low endemicity of the infection among the people as well as the detection method employed in testing for the presence of the infection.

In this study, the prevalence of HBV appeared to dominate among the much younger pregnant women vis-à-vis 20-29 (21.8%) and 30-39 (22.0%) years old. It was also observed that not until 40 years before a sharp decline in the prevalence rate was noted. This observation is in tandem with peak age of highest sexual activity in the society and supports the role of sexual intercourse in the spread of HBV. This phenomenon could further be supported by the relationship between infection with HBV and high-risk sexual practices which is often noted to be higher amongst the younger age group. Meanwhile, depending on the age categorization criteria used by a researcher, different studies have demonstrated varying prevalence rates among varied age groups [12,24,28,33,34] however, the trend of infection stratified by age would most often but not always experience a downward trajectory after about 40 yours with the peak of infection often occurring in the thirties. This did not come as surprise owing to the general knowledge of age associated decline in HBV infection among the general population which may be as a result of the institution of HBV testing in pregnant women combined with immunoglobulin prophylaxis and/or hepatitis B vaccination immediately after delivery in children born to HBsAg positive mothers [26]. Findings from the analysis also revealed the highest HBV prevalence rates among the unemployed (22.2%), married (20.3%), the basic level educated (20.9%) and multiparous (21.3%) pregnant women. Despite the fact that none of these sociodemographic factors were significantly associated with HBV infection among the pregnant women, it is important to establish the undeniable fact that lack of employment possess the potential to influence the young and frustrated to want to engage in such activities as prostitution, and other similar social vices in order to survive; some of which activities results in early pregnancies likewise lack of adequate formal education on the subject matter. Meanwhile, other studies have however shown significant association of, for example, education [35] and age [14] with HBV infection among similar study groups. This study also revealed that none of the demographic factors were significant risk factors of HBV infection among the pregnant women. In fact, similar results have been reported by most related studies [14,35,36]. The limitation of this study in the area of HBV risk assessment was its inability to assess other factors such as HBV infection and vaccination status of partners, family history of infection, participants residential status, religion, history of scarification, history of surgical operation etc. in other to increase the horizon of risk factors that may be of concern to the gravid woman.

This study revealed a high HCV prevalence of 14.3% among pregnant women aged <20 years old which is at variant with that recorded by Ugbebor and colleagues who reported an HCV seroprevalence rate of 17.0% among pregnant women aged 17-21 years old while the highest rate (36.4%) was documented among those aged 32-36 years old the study population [12]. Early sexual debut among the young girls could be blamed for this result. Notwithstanding, the implications of this development could pose serious problems to the general wellbeing of the citizenry if not checked as soon as possible. Issues such as poor mental growth and development of the individual due to disease complications, reduction in healthy blood donor population which Ghana is currently struggling with and a further spread of the disease may be confronted by the Ghanaian citizen if the situation persists. The need for all industry players to come together to address these matters of public health significance is therefore paramount. HCV seroprevalence generally declined with advancement in age akin to that reported by [16] however the trend of decline was not statistically significant ($x2=3.028$, $p=0.082$). Comparable to that observed for HBV infection, except for age and marital status (5.8%), HCV infection predominated among pregnant who were unemployed (11.1%), had basic level education (3.4%) and were multiparous (3.2%). Only age was significantly associated with HCV infection yet posed no significantly high likelihood to HCV infection among the pregnant women. Elsewhere in district Nowshera, Khyber Pakhtunkhwa [16], age, gravidity, education and blood transfusion were found to be significantly associated with HCV infection among the pregnant women.

Of the pregnant women studied, only one reported haven had blood transfusion but however tested negative for the infection.

5. CONCLUSION AND RECOMMENDATION

This study recorded an overall HBV and HCV seroprevalence rates of 20.0% and 2.5% among pregnant women who assessed antenatal care from the Kumasi South Hospital of the Kumasi Metropolis. The HBV prevalence as recorded is highly endemic and therefore requires urgent round table discussions to be properly addressed. Despite the low HCV prevalence, the futuristic detrimental effects it may pose to the general wellbeing of the citizenry cannot be in doubt owing to the high prevalence (14.3%) dominating among the younger pregnant women. Measures such as intensified public education coupled with mass screening and vaccination and treatment of HBV seronegative and positive individuals respectively is therefore advised to mitigate further spread of the disease. Also, considering the limitation of inadequate risk assessment in this study, further studies employing more sensitive detection techniques such as enzyme-linked immunosorbent assay (ELISA) and PCR if available should be carried out in order to bring to bear the major risk factors for appropriate policy development and health intervention.

ETHICAL APPROVAL AND CONSENT

Ethical approval to conduct this study was obtained from the Institutional Review Board of University of Cape Coast (IRB/UCC). Approval was also obtained from the management of Kumasi South Hospital prior to the study. Informed written consent was obtained from each study participant after the study was thoroughly explained to the participant. Participants were also given the option to withdraw from the study during such events as complications of pregnancy.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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