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5. **Title:** Comparative Analysis of Seroprevalence and Determinants of Hepatitis B and C Infections among Automobile Technicians and Beauty Salonists in Benin-City

ABSTRACT

Background: Hepatitis B virus (HBV) and hepatitis C virus (HCV) infections appear to affect numerous individuals, causing multiple deaths. HBV infection constitutes a significant health and economic burden in Nigeria with a high prevalence rate. Workplace injuries predispose some artisans to HBV and HCV infections but there is a lack of empirical data to substantiate it. This study investigated the sero-status, immunity level, viral load and determinants of hepatitis B and C infections among automobile technicians and beauty salon workers in Benin City, Edo State, Nigeria.

Materials and Methods: Ethical clearance was obtained for the study. This is a comparative cross-sectional study that was carried out in Benin City. 164 automobile repairers and beauty salonists were recruited using a multi-stage sampling technique. A pretested research tool with optimal reliability ratings was used to collect data. HBV sero-status of all participants was determined using HBV 5- panel test cassette while HCV antibody detected using lateral flow immunoassay principle. HBsAb was measured quantitatively by an enzyme-linked immunosorbent assay (ELISA) technique. Real-time polymerase chain reaction (PCR)-Taqman chemistry was used to determine viral loads. Descriptive and inferential statistics were used to compare participants sero-status and also identify determinants of optimal immunity against HBV. The level of significance of each test was set at $p < 0.05$.

Results: There are 77 automobile repairers and 87 beauty salonists. Skin laceration was the commonest type of injury among the artisans: 13(26.0%) were among injured mechanics and beauty salon workers, 16.9%; closely followed by needle pricks (15.4%) among injured salonists. The number of beauty salonists 14(16.1%) who had received HBV vaccines was significantly higher than that of auto-repairers [2(3.9%)] ($p=0.032$). The Beauty salonists were more knowledgeable about HBV than the auto-technicians, with 15(17.2%) and 4(5.2%) being

rated as fair in terms of knowledge respectively ($p = 0.032$). A significantly more proportion of beauty salonists 68(78.2) exhibited good preventive practices than 7(9.1) auto-technicians ($p = 0.001$). Two auto-technicians (2.6%) had ‘chronic infection with low infectivity’; 1(1.1%) beauty salonist had ‘early convalescence from chronic infection with high infectivity.’ Overall rate of chronic HBV infection was 1.8%. Twelve (15.6%) auto-technicians and 18 (20.7%) salonists were positive for HBsAb. Their median (IQR) of HBsAb levels were similar ($p=0.210$). One participant had a detectable HBV viral load (IU/ml) = 7.41×10^2 . Determinants of HBV immunity (HBsAb positivity) include age < 20 years and a high level of preventive practices ($p = 0.007$).

Conclusion: The Hepatitis B and C sero-status of auto-technicians and beauty salon workers is dissimilar, with a relatively lower rate of chronic infection among the latter than the former. Factors influencing their HBV immune status include their knowledge and preventive practices towards the infection. There is a need to enhance viral hepatitis awareness and preventive practices among these artisans in order to sustain the low prevalence and subsequently eradicate this occupational hazard.

Key Words: Hepatitis B virus, hepatitis C virus, prevalence, viral load, determinants, artisans

Word count: 486