

Title: Prevalence and risk factors of hepatitis B and C among prison inmates in Nigeria: a systematic review and meta-analysis

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Abstract: Background Hepatitis B (HBV) and hepatitis C (HCV) infections are significant global public health challenges. Correctional facilities face amplified and disproportionate risks due to overcrowding, limited healthcare access, and high-risk behaviours. There is a lack of consolidated prevalence and risk factor data on viral hepatitis in Nigerian correctional settings. This study synthesizes evidence on the prevalence of HBV and HCV, risk factors, and regional disparities within Nigerian correctional facilities. Methods Following PRISMA 2020 guidelines, we conducted a systematic review and meta-analysis of 13 cross-sectional studies (2009–2024). Databases (PubMed, Scopus, Web of Science, Dimensions and Google Scholar) were searched. A random-effects model was used to calculate pooled prevalence estimates. Sensitivity and subgroup analyses were performed to explore heterogeneity and regional variations. Studies reporting prevalence data using validated diagnostic methods (rapid tests and/or ELISA) were analysed. We extracted information on study characteristics, geographic regions, inmate demographics, testing modalities, and reported risk factors. Risk factors were evaluated using odds ratios (ORs) and 95% confidence intervals (CIs). Results Pooled HBV prevalence in Nigerian correctional facilities was 14% (95% CI: 10–19%; n=2,586) and HCV 10% (95% CI: 4–19%; n=861). Northern Nigeria reported higher HBV prevalence (19% vs. 6% in the South), while HCV was marginally higher in the South compared to the North (14% vs. 8%). Illicit drug use (HBV: OR=8.96; HCV: OR=9.26), blood oath-taking (HBV: OR=6.57; HCV: OR=4.57), and marital status (married inmates, OR=4.37) were significant risk factors. Sharing sharp objects increased HCV risk (OR=2.14). Other variables, such as blood transfusion, intravenous drug use, condom use, and duration of incarceration, did not show statistically significant associations, likely due to heterogeneity across studies. Conclusions This study highlights a high prevalence of HBV and HCV among inmates in Nigerian correctional facilities, primarily influenced by structural and behavioural determinants. These findings point to the urgent need

Keywords: Hepatitis B virus, Hepatitis C virus, Correctional facilities, Nigerian inmates, Prevalence, Risk factors, Systematic review, Meta-analysis, Vaccination, WHO 2030 targets

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