

Timely Uptake of Hepatitis B Vaccine Birth-Dose; Knowledge, Attitude and Practice Amongst Caregivers in Karu Primary Health Care Centers, Karu LGA, Nasarawa State

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ABSTRACT

Introduction: Hepatitis B virus (HBV) poses a significant public health burden in Nigeria, with perinatal transmission being a primary mode of infection. The World Health Organization recommends administering the Hepatitis B vaccine birth dose (HepB-BD) within 24 hours of birth to prevent mother-to-child transmission. Despite this, uptake in Nigeria, particularly in rural areas like Karu Local Government Area (LGA), Nasarawa State, remains low due to gaps in caregiver knowledge, attitudes, and practices (KAP). This study evaluates the KAP of caregivers regarding timely HepB-BD uptake in primary health care (PHC) centers in Karu LGA to identify barriers and propose strategies for improving vaccination coverage.

Methodology: A cross-sectional descriptive survey was conducted among 384 caregivers, including mothers of infants aged 0–12 months and pregnant women attending antenatal services at randomly selected PHC centers in Karu LGA. A multistage sampling technique was used, involving random selection of 4–5 wards, PHCs within those wards, and respondents via systematic sampling. Data were collected using a structured, interviewer-administered questionnaire adapted from validated KAP instruments, covering socio-demographics, knowledge, attitudes, practices, and factors influencing HepB-BD uptake. Data analysis was performed using SPSS version 25, employing descriptive statistics, Chi-square tests, and logistic regression to assess associations, with statistical significance set at $p < 0.05$.

Results: Among the 384 respondents, 71.9% ($n=276$) demonstrated good knowledge of HepB-BD, with 72.7% aware of the vaccine and 50.3% correctly identifying the 24-hour administration window. However, 28.1% had poor knowledge, and 28.4% were unsure of the correct timing. Attitudes were positive in 71.1% ($n=273$) of respondents, with 64.3% strongly agreeing on the vaccine's importance and 49.7% expressing confidence in its safety. Conversely, 28.9% exhibited poor attitudes, with concerns about side effects (41.4%) and cultural beliefs (34.7%) influencing hesitancy. Practice-wise, 76.6% ($n=294$) showed good practices, yet only 41.9% ($n=161$) reported their most recent child received the HepB-BD within 24 hours, while 15.4% reported no vaccination. Key barriers to timely uptake included lack of awareness (78.6%, $n=302$), cultural/religious beliefs (38.3%, $n=147$), distance to health facilities (19.5%, $n=75$), and vaccine cost (9.4%, $n=36$). Significant associations were observed between awareness and age ($X^2=132.65$, $p=0.002$), occupation ($X^2=26.41$, $p=0.001$), and educational status ($X^2=53.10$, $p=0.004$). Facility delivery (OR=5.2, 95% CI 3.4–8.0, $p<0.001$) and antenatal care counseling (OR=3.6, $p<0.001$) were strong predictors of timely uptake. Respondents endorsed strategies to improve uptake, including increased health education during antenatal care (90.4%, $n=347$), free vaccines (83.1%, $n=319$), 24/7 vaccine availability (90.9%, $n=349$), and community leader engagement (86.5%, $n=332$).

Conclusion: Caregivers in Karu LGA exhibit relatively high knowledge and positive attitudes toward HepB-BD, but timely uptake remains suboptimal, with less than half of newborns vaccinated within 24 hours. Barriers such as limited awareness, cultural beliefs, and logistical challenges underscore the need for targeted interventions. Strengthening health education, ensuring vaccine availability at all delivery points,



providing free vaccines, and engaging community and religious leaders are critical to enhancing timely HepB-BD administration. These findings offer valuable insights for policymakers to improve immunization programs and reduce HBV transmission in Nigeria.

Keywords: Hepatitis B Vaccine, Birth Dose, Timely Uptake, Knowledge, Attitude, Practice, Caregivers, Primary Health Care, Karu LGA, Nasarawa State, Mother-to-Child Transmission