



Evaluation of Availability, Prices and Affordability of Medicines for Hepatitis B and Hepatitis C Viruses at Community Pharmacies in a Senatorial District in North-Central Nigeria

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1. Introduction

- WHO global estimates showed that 254 million people were living with chronic hepatitis B virus infection (HBV) and 1.1 million deaths in 2022.
- Annual incidence of HBV: 1.2 million.
- Globally, WHO global estimated that 50 million people have Chronic hepatitis C viral infection (HCV) and 242 000 deaths in 2022
- Annual incidence of HCV: 1 million.
- Despite effective pharmacotherapy, Availability, prices and affordability (APA) of medicines for hepatitis B (MsHBV) and hepatitis C (MsHCV) constitute public health concerns.
- Information on APA of MsHBV and MsHCV in North-Central Nigeria is scarce.

2. Objectives

Evaluation:

- APA of MsHBV at community pharmacies in a senatorial District in North-Central Nigeria.
- APA of MsHCV at community pharmacies in a senatorial District in North-Central Nigeria. Z

3. Methods

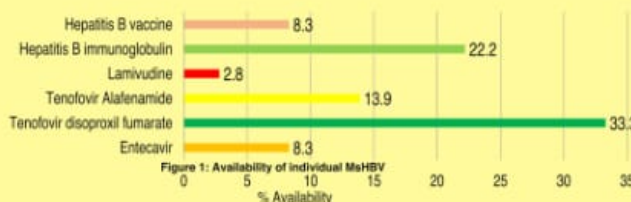
- Multicentre study was conducted from June to August 2023 in 36 randomly sampled eligible community pharmacies.
- It adapted World Health Organization (WHO)/Health Action International (HAI) methods to evaluate APA of MsHBV and MsHCV in stock on a one-time visit to the pharmacies.
- The lists of MsHBV and MsHCV were based on WHO Model Essential Medicine List (EML [2019]) and Nigerian EML (2020).
- Data analyses involved descriptive and inferential statistics (bivariate regression). Statistical significance was set at $p < 0.05$.

3. Methods Cont'd

- Ethical approval was obtained from an Institutional Ethical Review Board (ERC/MOH/2023/07/137).
- Informed consents were obtained from the Managing Directors and Superintendent Pharmacists of the Community Pharmacies.

4. Results & Discussion

- Availability of MsHBV was 100%. This is higher than the findings of Li *et al.* (2024) in which availability is 30%. MsHCV availability was 20%.
- Availability of individual MsHBV was very low (< 30%) as shown in Figure 1.



- Availability of individual MsHCV was < 3%.

4. Results & Discussion Cont'd

- Median buyer price (MBP) of MsHBV ranged NGN 65.84 - NGN 39,805 (USD 0.09 - USD 54.41).
- Most MsHBV (83.3%) had median price ratio (MPR) < 1 (Table 1). This contrasts with findings of Chen *et al.* (2024), in which MPRs for ETV & TDF exceeded 1.

Table 1. Median Price ratio for MsHBV

Medicines for hepatitis B	Median Price ratio
Entecavir (ETV)	0.9
Tenofovir Disoproxil Fumarate (TDF)	0.6
Tenofovir Alafenamide (TAF)	1.3
Lamivudine (3TC)	0.06
Hepatitis B Immunoglobulin (HBIG)	0.8
Hepatitis B vaccine (HepB)	0.8

4. Results & Discussion Cont'd

- All MsHBV and MsHCV were unaffordable.
- The lowest-paid Nigeria government employee required more than one day's wage (NGN 1000 [USD 1.37]) to purchase available MsHBV and MsHCV.
- The findings of this study are similar to the findings of Li *et al.* (2024) in which affordability of MsHBV for rural residents was 0%.
- Prices of MsHBV did not predict their availability ($p = 0.680$).

5. Conclusions

- Most MsHBV and all MsHCV had very low availability.
- Most MsHBV are cheaper than international bench prices (IBPs).
- MsHCV are more expensive than IBPs.
- All MsHBV and MsHCV are unaffordable.
- Nigerian government should institute programs that enhance availability and affordability of MsHBV and MsHCV in community pharmacies.

References

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Acknowledgements:

The authors appreciate the supports, contributions and cooperation of the staff and management of the study sites. The study participants are also appreciated.