**Preferences of pregnant women attending antenatal care regarding prevention of mother-to-child HIV transmission service delivery models in Ethiopia: Discrete Choice Experiment**

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**Background:** The prevention of mother-to-child transmission (PMTCT) program is a vital part of the HIV response, but low PMTCT service uptake remains a critical challenge in Ethiopia. Understanding the demand-side factors that drive low service uptake is necessary to inform efforts to increase demand and offer client-centered services.

**Objective:** This study aims to analyze the preferences and drivers of choice regarding PMTCT service delivery models.

**Methods:** A total of275 pregnant women attending antenatal care across twelve health facilities were randomly sampled to be interviewed using a discrete choice experiment (DCE) method. Participants were asked to choose between two service delivery models that included six attributes (pre-test counseling, service integration, disclosure counseling, waiting time, cost, and PMTCT site location). Each participant responded to 64 choice sets, which were generated to maximize D-efficiency. A conditional random effect logit econometric model was employed.

**Findings:** Couple pre-test counseling was preferred over individual pre-test counseling (OR 1.23, p = 0.000). A pregnant woman waiting for 1 hour and 2 hours was less likely to prefer the PMTCT service, respectively as compared to waiting for 30 minutes (OR 0.75, p=0.001; OR 0.76, p=0.000). The respondents preferred not to pay for the services (USD 1.27, USD 2.54). Pregnant women preferred PMTCT services at the health center as compared to health post (OR 1.26, p=0.001). The odds of choosing couple pre-test counseling by a pregnant woman from the rural areas was lower as compared to the urban respondent (OR 0.77, p=0.003). Urban pregnant women were less likely to prefer waiting for longer time period (OR 0.72, p=0.72, p=0.04). Pregnant woman from the rural settings were less willing to pay USD 2.54 for the PMTCT service (OR 0.52, p=0.000), and more willing to receive a payment USD 5.08 (OR 2.09, p=0.000).

**Conclusion:** Pretest counseling, waiting time, fees and location were the critical attributes affecting the preferences of pregnant women. The preferences of urban and rural pregnant woman varied in the PMTCT service attributes of service integration, waiting time, service fees and location. HIV programs should prioritize meeting client needs on these attributes and consider different models based on location.