Published in final edited form as:

AIDS Care. 2017 September ; 29(9): 1094–1098. doi:10.1080/09540121.2017.1317325.

Increasing HIV Testing Among Pregnant Women in Nigeria: Evaluating the Traditional Birth Attendant and Primary Health Center Integration (TAP-In) Model.

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Abstract

Engaging Traditional Birth Attendants (TBAs) may be critical to preventing mother-to-child transmission of HIV (PMTCT) in Nigeria. We integrated TBAs into Primary Health Centers (PHCs) and provided the TBAs with HIV counselling and testing (HCT) training for PMTCT (TAP-In). The purpose of this study was to evaluate the impact of TAP-In on HCT uptake among pregnant women. A quasi-experimental design was used for this study. Twenty PHCs were assigned to the intervention group that integrated TAP-In and 20 were assigned to the control group. Data were collected six months prior to the initiation of TAP-In and six months post, using antenatal clinic registries. Intervention PHCs more than doubled the number of pregnant women who received HCT in their catchment area post TAP-In while control PHCs had no significant change. After initiating TAP-In, intervention PHCs provided almost three times more HCT than

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the control PHCs ($p<0.01$) with TBA provided over half of the HCT post TAP-In. The TAP-In model was effective for increasing HCT among pregnant women.

Keywords

HIV/AIDS; PMTCT; traditional birth attendants; Nigeria

Introduction

In 2015, Nigeria had an estimated 41,000 new infections among children, the highest number in the world, with about 90% of these infections being a result of mother-to-child transmission (MTCT) (UNAIDS, 2016; World Health Organization, 2016). To prevent MTCT (PMTCT), it is important to identify HIV-positive pregnant women early through HIV counseling and testing (HCT) so they can be enrolled into PMTCT programs (Federal Ministry of Health, 2014). However, Nigeria still faces significant challenges in developing effective programs for PMTCT due to poor access to HCT (Hardon et al., 2012; Monjok, Smesny, & Essien, 2009; Turan et al., 2011). In Nigeria, less than 20% of pregnant women receive HCT (UNAIDS, 2014a; UNAIDS, 2014b). Low rates of HCT among pregnant women are due to several issues which include a limited number of HCT service delivery points and a limited number of deliveries taking place at health facilities (Federal Ministry of Health, 2014; NPC and ICF International, 2014). In Nigeria, 65% of births take place at homes and are often attended by traditional birth attendants (TBAs) (NPC and ICF International, 2014; Federal Ministry of Health, 2014).

TBAs have been identified as an important link in provision of care for pregnant women in Nigeria (Homsy, King, Balaba, & Kabatesi, 2004; Omowunmi et al., 2004). However, TBAs vary greatly in their knowledge of HIV prevention including HCT (Osuji et al., 2015). The majority of TBAs in Nigeria have no knowledge of HCT or PMTCT (Balogun & Odeyemi, 2010; Osuji et al., 2015; Perez, Aung, Ngoro, Engelsmann, & Dabis, 2008). However, researchers have found that TBAs who have been trained in HCT significantly increased their knowledge and skills around HCT (Osuji et al., 2015; Perez et al., 2008).

Study Objectives

The goal of this study was to evaluate an intervention that integrated TBAs into Primary Health Centers (PHC), and provided TBAs with PMTCT and HCT training. This model is referred to as TAP-In (TBA and PHC integration model). The objective of this study was to compare HCT uptake among pregnant women in the catchment area of health facilities that adopted TAP-In and facilities that did not.

Methods

Study design and Sample

A quasi-experimental design was used for this study. There were 74 PHCs that provided HCT and PMTCT services in antenatal clinics supported by the President's Emergency Plan for AIDS Relief (PEPFAR), through Center for Clinical Care and Clinical Research –

Nigeria (CCCRN) in Ebonyi state of Nigeria. Two groups of PHCs were identified. One group included thirty-four PHCs that were willing to implement TAP-In and the other included 40 PHCs that were not willing to implement TAP-In. Twenty facilities from each group were randomly assigned to the intervention group or the control group using a systematic random sampling method (using nth number of alphabetically ordered population with interval of $I=N/n$).

Intervention

The TAP-In intervention included:

- (1) Identification of 1–5 TBAs by each intervention PHC, through community women leaders and pregnant women;
- (2) One day on-site, hands-on training of the TBAs using the serial testing algorithm included in the National Guideline for HCT and the National Antenatal Register. TBA training included:
 - i. Counselling and administering HIV testing using a Determine HIV Rapid Test kit.
 - ii. Referral of women with an initial positive test to an integrated PHC for a confirmation test.
 - iii. Use of documentation tool for client information.
- (3) Monthly visit to the PHCs by TBAs for:
 - i. Data submission and validation by the TAP-In focal person.
 - ii. Requisition and resupply of test kits.
- (4) Quarterly visit by PHC representative to the TBAs for mentorship and supervision as a way of providing quality assessment and quality improvement.

To address TBA's concern for loss of clients at the point of referral of positive patient for PMTCT intervention at the PHCs, the TBA was given an incentive of 800 naira (2 dollar) per positive patient referred to and received at the integrated PHC.

PHCs in the intervention were encouraged to continue TAP-In with 1–5 TBAs integrated into their facility. PHCs in the control were not trained to implement TAP-In and did not engage TBAs until end of study. Control PHCs were allowed to continue their routine practice of HIV testing for pregnant women that accessed their health center for ANC services.

Data Collection

The TAP-In intervention began in the intervention PHCs in January, 2015. Baseline data regarding HCT uptake among pregnant women were collected by a team from CCCRN for both the intervention and control PHCs 6 months prior to the start of TAP-In (July – December, 2014). Data collection continued 6 months after the introduction of TAP-In by the same team (January – July, 2015). Data were collected using the national PMTCT antenatal registers from the PHCs and from the TBAs, and data were validated using

CCCRN/CDC national monthly summary report of number of pregnant women tested for HIV.

Data Analysis

Changes in HCT uptake by pregnant women were evaluated pre and post-implementation of TAP-In for the intervention and control PHCs. Chi square test was used for statistical comparison between the two groups. P value for statistical significance was set at <0.05. SPSS 22 was used for statistical analysis.

Results

Forty-six TBAs were integrated into the intervention PHCs with 9 of the PHCs having 3 TBAs each, 8 having 2 TBAs each, and 3 having 1 TBA each. Table 1 shows the number of pregnant women who participated in HCT six months before and after TAP-In in the intervention group. During the six months after the initiation of TAP-In, twice as many pregnant women received HCT than in the six month before, increasing from 2501 to 5346 (Figure 1). TBAs contributed to over half of the HCT post initiation of TAP-In (Figure 2). There was a 113% increase in HCT uptake after TAP-In and a 73% difference between HCT uptake before and after TAP-In (Table 1).

Table 2 provides data comparing HCT uptake among pregnant women in the intervention group and the control group. The intervention group provided almost three times more HCT (95% difference) than the control group post initiation of TAP-In. Chi square test showed that there was a significant increase in HCT in the intervention group compared to the control group after initiation of TAP-In ($p < 0.01$, $X^2 = 289.9$).

Discussion

PHCs that integrated TBAs more than doubled the number of pregnant women who received HCT in their catchment area. In intervention PHCs, TBAs provided over half of the HCT for pregnant women post TAP-In. Training TBAs in PMTCT and HCT and integrating them with a PHC was effective for increasing the uptake of HCT among pregnant women in this study.

TBAs can be an important resource to address the high number of children infected with HIV in Nigeria as well as other Global Plan priority countries (Brennan et al., 2014; Hamela et al., 2014). Researchers have found that after PMTCT training, TBAs were able to test and identify HIV positive pregnant women in rural Zambia and Malawi (Brennan et al., 2014; Hamela et al., 2014). Based on these findings, it was concluded that TBAs can play an important role in PMTCT by conducting initial HCT, especially in rural environments. Our study supports this conclusion.

Even though the number of health facilities that offer PMTCT programs in Nigeria increased almost ten-times between 2010 and 2014 (675 to 6546), there remains a lack of coverage, with 70% of pregnant women having no access to PMTCT programs (National Agency for

the Control of AIDS, 2015). This study showed that by utilizing TBAs to conduct HCT, HIV positive pregnant women can be identified and referred to PHCs with PMTCT programs.

There are limitations with this study. The initial allocation of PHCs to intervention or control group was based on their willingness to integrate TAP-In. This may have resulted in selection bias. TBAs operating in the catchment areas of control PHCs may have provided HCT to their clients; however, since they were not integrated with a PHC, we did not have these data. However, based on previous research, this is likely to have been a small number (Osuji et al., 2015). Additionally, TBAs in intervention group may have been influenced by other factors outside of the intervention that increased testing. TBAs were paid 2 dollar per positive patient referred to and received at the integrated PHC. Increases in HTC in the intervention group might be partly due to this incentive. Some PHCs were not willing to participate in TAP-In because of the perceived additional workload and due to existing staff shortages. Challenges encountered by PHCs that did participate included: increase documentation from HCT provided by TBAs; visiting TBAs for quality assessment, mentoring, and follow-up; and incentives.

Conclusion

TAP-In was effective for increasing HCT among pregnant women. Based on these findings, TAP-In could be expanded and further studied to understand its impact on HCT among pregnant women and its contribution towards achieving the PMTCT. Further studies are needed to evaluate how engaging TBAs can increase the identification, linkage to and retention in care among HIV positive pregnant women.

Acknowledgements

Authors wish to acknowledge the following:

Officers in charge of PHCs and Traditional birth attendants in Ebonyi State for active participation in TAP-In model implementation.

Dr Ayodotun Olutola and CCCRN for their support and contribution.

Funding

Financial support for this manuscript was provided in part by grants from the National Institute of Health (R21TW010252 & R01HD087994).

Ethical Consideration

Ethical approval for this study was provided by the Ebonyi state Ministry of Health.

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Figure 1:
Impact of TAP-In Model on HCT Uptake Among Pregnant Women in the Intervention Group.

Figure 2:
HCT Uptake Among Pregnant Women - PHC versus TBA in the Intervention Group Post TAP-In.

Figure 3:
HCT Uptake Among Pregnant Women Before and After TAP-In – Intervention Group Compared to Control Group.

Table 1:

The Impact of TAP-In Model on HCT Uptake Among Pregnant Women in the Intervention Group.

Measurement Outcome	Number
HCT uptake among pregnant women; 6 months before TAP-In model intervention	2501
HCT uptake among pregnant women; 6 months after TAP-In model intervention	5346
HCT uptake among pregnant women; facility base contributions	2130
HCT uptake among pregnant women; TBA based contributions	3216
Percentage contribution from TBA after TAP-In model intervention	53%
Percent increase in HCT uptake among pregnant women after TAP-In model intervention	113%
Percent difference between HCT uptake before and after TAP-In model intervention	73%

Table 2:

HCT Uptake Among Pregnant Women Before and After TAP-In – Intervention Group Compared to Control Group.

Measurement Outcome	Intervention n= 20	Control n=20	Percent Difference
HCT uptake among pregnant women; 6 months before TAP-In model intervention	2501	1770	34%
HCT uptake among pregnant women; 6 months after TAP-In model intervention	5346	1892	95%
HCT uptake among pregnant women; facility base contributions	2130	1892	12%
HCT uptake among pregnant women; TBA based contributions	3216	0	200%