

ASSESSING THE IMPACT OF “UMOYO” CLINIC DAYS DEDICATED TO PROVIDING HIV SERVICES FOR POST-PARTUM HIV-POSITIVE MOTHERS AND THEIR INFANTS ON 12-MONTH INFANT RETENTION

A cluster-randomized control trial in two provinces of Zambia

INTRODUCTION

Zambia has made significant strides towards eliminating mother to child transmission (eMTCT) by ensuring that all HIV-positive, pregnant women have access to effective, life-long HIV treatment and by working to increase coverage of a range of services. However, in 2016, nearly 8,900 infants were newly infected with HIV. For HIV-positive mothers, postnatal care visits are critical to avoid transmitting the disease to their babies. These visits increase access to early infant diagnostics, which test infants for HIV, and establish links to care for HIV-positive children. Yet, data from the Zambian health information management system (HMIS) suggests that the HIV rates for early infant diagnosis (EID) tests, which are done at 6 weeks, 6 months, 12 months and 18 months, increase with age [1,2]. Mother-infant pair clinics have been proposed in various settings as a way to retain HIV-exposed infants in care until they complete the final stage of HIV testing at 18 months. One such clinic, called Umoyo or “Clinic of Life” in the Chinyanja language, was established at Mtendere Mission Hospital in Chirundu District, Lusaka Province in 2007 [3] with support from Churches Health Association of Zambia (CHAZ). The clinic now operates in selected facilities in five districts in Zambia. The Zambian Ministry of Health was interested in rigorously evaluating the impact of the Umoyo clinic model on the retention of mother-infant-pairs within the PMTCT cascade. This brief outlines the findings of a 12-month, cluster-randomized control trial carried out to determine if facilities with the Umoyo program improved the number of HIV-exposed infants retained in care.

STUDY APPROACH

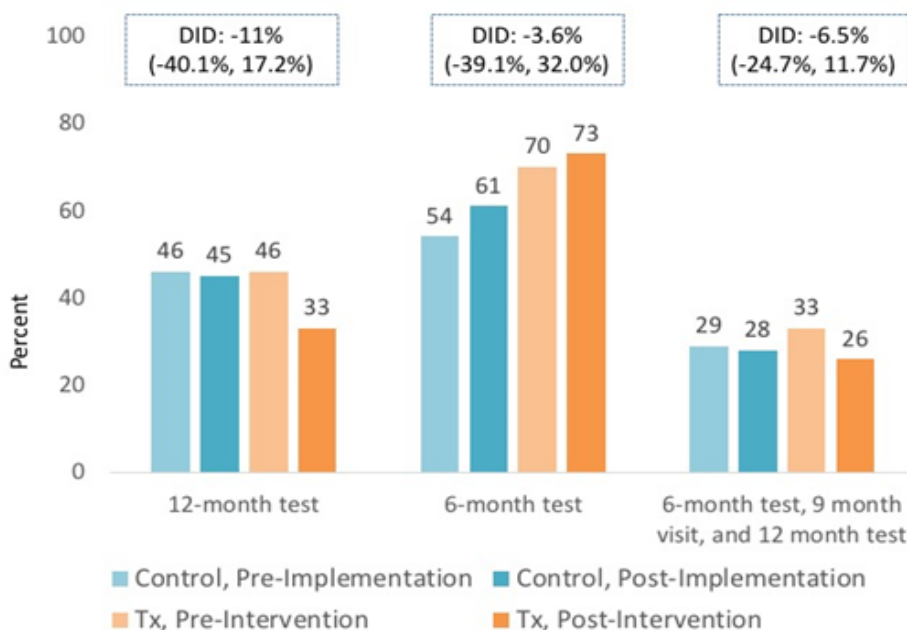
We conducted a two-arm, cluster-randomized trial in Lusaka and eastern provinces of Zambia to assess the change in proportion of HIV-exposed infants retained in care 12 months before and after the Umoyo clinic was launched at 14 intervention sites compared to retention in 14 control sites with the standard of care (difference-in-difference). The target populations for the study (the primary cohort) were infants born to HIV-positive mothers within a four-month period (November 2015 through February 2016 for the pre-implementation period or November 2016 through February 2017 for the post-implementation period) and had their 6-week early infant diagnostic test as well as their first follow-up visit. In order to further describe the potential impact of Umoyo clinics on retention among children, we also included a secondary cohort of children who were born outside the time period of our narrow primary cohort, but who may have been eligible for the Umoyo intervention. Surveys were also administered to mothers to determine self-reported social support adapted from the Social Provisions Scale [4] and stigma scores adapted from the HIV/AIDS stigma instrument (HASI-P) [5]. Analysis was conducted with facility-aggregated t-test comparisons to examine differences over time in our outcomes as well as between arms during the pre-implementation phase. Sensitivity analysis included logistic generalized estimating equations (GEE). We used a corrected alpha of <0.01 and 99% confidence interval to account for multiple comparisons.



RESULTS

For the primary cohort, we found that the Umoyo program did not improve the proportion of children who were retained in care at 12 months (-11%; 99% CI: -40.1%, 17.2%), 6 months (-3.6%; 99% CI: -39.1%, 32.0%), or continually from 6 to 12 months (-6.5%; 99% CI: -24.7%, 11.7%). In sensitivity analyses, evidence even suggested that the Umoyo program may have had a significantly negative impact on retention. For the secondary cohort, we found that Umoyo did not appear to improve the retention in child outcomes at either 6 months (11%; 99% CI: -14.3%, 36%), 9 months (-3.1%; 99% CI: -34.6%, 28.4%), 12 months (-3.5%; 99% CI: -39.8%, 32.8%), or 18 months (1.8%; 99% CI: -42.7%, 46.3%). Over time, according to an alpha of <math><0.01</math>, we did not see evidence that the Umoyo program improved the social support scores (mean 0.2, 99% CI: -0.4, 0.8), enacted stigma (mean -0.1, 99% CI: -0.3, 0.01), health worker stigma (mean -0.2, 99% CI: -0.5, 0.03), or the internalized stigma (mean 0.01, 99% CI: -0.3, 0.3). With the GEE models, however, we did see statistically significant reductions in the scores for social support as well as health worker stigma over time.

FIGURE 1. DISTRIBUTION (%) AND DIFFERENCE-IN-DIFFERENCE (% AND 99% CONFIDENCE INTERVAL) RESULTS FOR PRIMARY COHORT OF CHILDREN



CONCLUSIONS

Results of this cluster randomized control trial indicated that the Umoyo program did not have a positive impact on retention of HIV-exposed infants within PMTCT care. Factors such as low exposure to the intervention for the primary cohort due to poor implementation fidelity, de-prioritization of filling in the primary source of data collection for this study in the intervention sites due to the burden of the intervention on Umoyo clinic days, and non-use of a potential key register for the 12-month testing information could explain the absence of impact and an association with worse outcomes for HIV-exposed infants. Alternative models that can improve retention of HIV exposed infants in PMTCT care need to be evaluated. If Umoyo is to be scaled, specific systems improvements should be made including increasing the number of healthcare workers per facility.

Sources: (1) UNAIDS, Zambia Country Fact Sheet. 2016. (2) MOH, Paediatric HIV Care and Treatment – 2016 Performance- (Presentation at the National Paediatric ART Symposium 11-12 July 2017). 2017, Ministry of Health, Zambia: Lusaka. (3) MM, B, et al., A community tailored strategy to enrol more HIV exposed babies and reduce mother to child transmission (PMTCT) of HIV, Mtendere, Zambia, in 6th IAS Conference. 2011. (4) Cutrona, CE et al., The provisions of social relationships and adaptation to stress. *Advances in personal relationships*. ed. W.H.J.D. Perlman. Vol. 1. 1987, Greenwich, CT: JAI Press. (5) Holzemer, WL et al., A conceptual model of HIV/AIDS stigma from five African countries. *J Adv Nurs*. 2007 Jun;58(6):541-51.

For more information, see full publication:

[Phiri SC, et al. Impact of the Umoyo mother-infant pair model on HIV-positive mothers' social support, perceived stigma and 12-month retention of their HIV-exposed infants in PMTCT care: evidence from a cluster randomized controlled trial in Zambia. *Trials*. 2019 Aug 15;20\(1\):505.](#)

ABOUT THE 3DE PROGRAM

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