

PACTR Summary Results Overview

Improving HPV Vaccine Uptake Among Girls Aged 9–14 Years in Akwa Ibom State, Nigeria: A Community-Participatory Pre/Post-Intervention Study

Principal Investigator: Dr Victory Ekpín | Study Completion Date: June 2025

1. Baseline Characteristics

Baseline sociodemographic characteristics of participants are presented for both the pre-intervention (n=331) and post-intervention (n=355) survey samples. As this study employed an independent cross-sectional design at each time point, the two samples are described separately rather than as baseline and follow-up for the same cohort. The profiles were broadly comparable across phases.

Table 1. Sociodemographic characteristics of participants by survey phase

Characteristic	Pre-intervention (n=331)	Post-intervention (n=355)
Age, years — mean (SD)	40.5 (10.3)	40.0 (10.1)
Age category, n (%)		
<30 years	43 (13.0)	45 (12.7)
30–44 years	178 (53.8)	215 (60.6)
45–59 years	94 (28.4)	72 (20.3)
≥60 years	16 (4.8)	23 (6.5)
Gender, n (%)		
Female	246 (74.3)	271 (76.3)
Male	85 (25.7)	84 (23.7)
Relationship to child, n (%)		
Father	66 (19.9)	76 (21.4)
Mother	186 (56.2)	223 (62.8)
Guardian	79 (23.9)	56 (15.8)
Mother/female caregiver education, n (%)		
No formal education	29 (8.8)	23 (6.5)
Primary	73 (22.1)	90 (25.4)
Secondary	178 (53.8)	194 (54.6)
Tertiary	42 (12.7)	37 (10.4)
Other	9 (2.7)	11 (3.1)
Father/male caregiver education, n (%)		
No formal education	20 (6.0)	11 (3.1)
Primary	58 (17.5)	67 (18.9)
Secondary	140 (42.3)	174 (49.0)
Tertiary	35 (10.6)	30 (8.5)
Other	78 (23.6)	73 (20.6)
Respondent occupation, n (%)		

Characteristic	Pre-intervention (n=331)	Post-intervention (n=355)
<i>Unemployed</i>	46 (13.9)	31 (8.7)
<i>Formal sector employed</i>	24 (7.3)	19 (5.4)
<i>Informal sector employed</i>	20 (6.0)	27 (7.6)
<i>Self-employed</i>	241 (72.8)	278 (78.3)
Household income, NGN/month — median (IQR)	35,000 (20,000–60,000)	50,000 (25,000–70,000)
LGA of residence, n (%)		
<i>Uyo</i>	112 (33.8)	119 (33.5)
<i>Ikot Ekpene</i>	106 (32.0)	113 (31.8)
<i>Okobo</i>	113 (34.1)	123 (34.6)
Ethnicity, n (%)		
<i>Ibibio</i>	112 (33.8)	119 (33.5)
<i>Annang</i>	101 (30.5)	107 (30.1)
<i>Oron</i>	113 (34.1)	121 (34.1)
<i>Igbo</i>	5 (1.5)	8 (2.3)
Religion	Christianity: 100%	Christianity: 100%

SD = standard deviation; IQR = interquartile range; LGA = Local Government Area; NGN = Nigerian Naira.

2. Participant Flow

This study used an **independent cross-sectional design** at each time point. At each survey phase, a new consecutive sample of eligible caregivers was recruited from the same six study communities. All eligible caregivers who consented were enrolled; no eligible, consenting participant was excluded. The flow of participants through each survey phase is illustrated below.

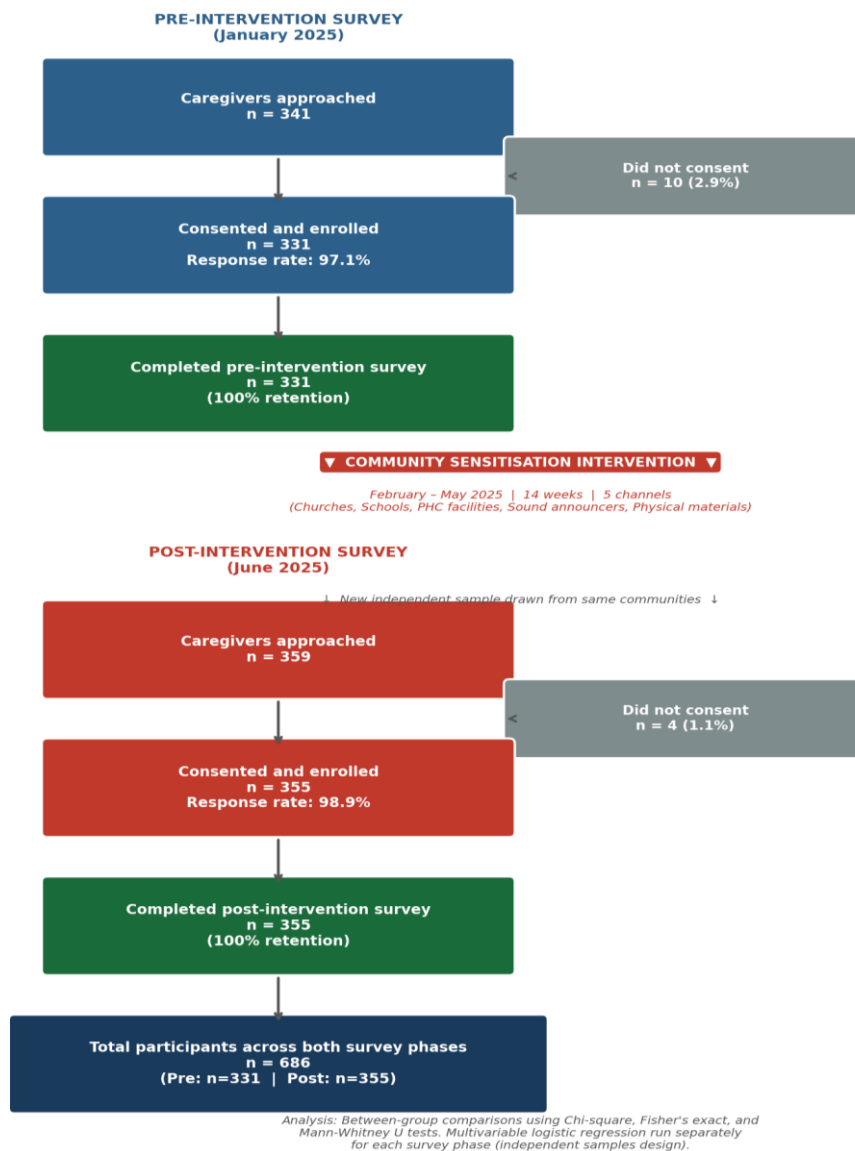


Figure 1. Participant flow diagram

3. Adverse Events

This study involved no clinical procedures, biological samples, or physical interventions. Participation consisted solely of completing a structured questionnaire and, in the case of the

community sensitisation phase, attendance at awareness activities. No adverse events were reported or recorded during any phase of the study.

4. Outcome Measures

Primary Outcome

HPV vaccine uptake, defined as caregiver-reported receipt of at least one dose of the HPV vaccine by their daughter or ward, increased from 7.3% (24/331; 95% CI: 4.5%–10.0%) pre-intervention to 50.4% (179/355; 95% CI: 45.2%–55.6%) post-intervention, an absolute increase of 43.1 percentage points ($\chi^2=153.228$, $p<0.001$).

Secondary Outcomes

Secondary outcomes covered awareness of HPV and cervical cancer, awareness and knowledge of the HPV vaccine, and vaccination-related perceptions and willingness among caregivers. Pre- and post-intervention comparisons for all outcomes are presented in Table 2.

Table 2. Pre- and post-intervention outcomes

Outcome Measure	Pre-intervention (n=331)	Post-intervention (n=355)	p-value
PRIMARY OUTCOME			
HPV vaccine uptake (≥ 1 dose received)	7.3% (24/331)	50.4% (179/355)	<0.001
SECONDARY OUTCOMES — Awareness			
Heard of HPV	10.9%	28.7%	<0.001
Heard of cervical cancer	33.5%	47.0%	<0.001
Heard of HPV vaccine	15.1%	65.4%	<0.001
SECONDARY OUTCOMES — Knowledge (among aware respondents)			
Good HPV knowledge among HPV-aware respondents	63.9%	84.3%	0.019
Mean HPV knowledge score among HPV-aware (SD)	24.86 (3.50)	27.00 (3.75)	0.004
Mean HPV vaccine knowledge score among vaccine-aware (SD)	4.14 (1.44)	4.69 (1.20)	0.009
Good HPV vaccine knowledge among vaccine-aware	4.0%	6.9%	0.749
SECONDARY OUTCOMES — Willingness			
Willingness to vaccinate among unvaccinated caregivers	87.0%	87.5%	0.979
POST-INTERVENTION CAMPAIGN ENGAGEMENT			
Aware of HPV vaccination campaigns in community	—	60.6%	—
Participated in campaign activities	—	47.9%	—
Messages influenced perception of HPV vaccination	—	47.0%	—
Messages influenced decision to vaccinate daughter/ward	—	45.6%	—

Note. p-values from Pearson Chi-square test for proportions; Mann-Whitney U test for continuous knowledge scores. HPV knowledge assessed among HPV-aware respondents only; vaccine knowledge assessed among vaccine-aware respondents only. Campaign engagement indicators were assessed in the post-intervention survey only. Good knowledge defined as $\geq 60\%$ of maximum score (Modified Bloom's cut-off approach).

Corroborating Evidence from PHC Facility Records

Routine immunisation records from six primary healthcare facilities serving the study communities independently corroborated the self-reported uptake findings. A total of 429 HPV vaccine doses were administered during the four-month intervention period (February–May 2025), compared with 108 doses during the preceding four months (October 2024–January 2025), representing a 297% increase. Mean monthly doses rose from 27.0 to 107.3 across study facilities during the intervention period.