

# Preliminary impact of a combination intervention on intention to migrate and school absence among adolescent girls: Results from a pilot cluster-randomized clinical trial in Northern Ghana

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## ABSTRACT

**Background:** Poverty in sub-Saharan Africa, together with family context as a contributing factor, often results in unaccompanied rural–urban child migration and high incidence of child labor (24%), leading to heightened vulnerability and risk. In this study, we examined the preliminary impact of a combination intervention that combined family economic empowerment and family strengthening interventions on intention to migrate (primary outcome) and school absence (secondary outcome) among adolescent girls in Ghana.

**Methods:** Longitudinal data from adolescent girls ( $n = 97$ ) participating in the ANZANSI (resilience in Dagbani – the local language in the study area) pilot study (2019–2022) were analyzed. Adolescent girls and their caregivers were randomized at the school level to two study conditions: bolstered usual care and the ANZANSI combination intervention delivered over 9 months. Data were collected at baseline, 9 months and 15 months post-intervention initiation. We used mixed-effects logistic and linear regression models to examine the impact of the intervention on absence from school and intention to migrate.

**Findings:** At 15 months post-intervention initiation, the ANZANSI group had significantly lower intention to migrate compared to the control group ( $b = -0.61$ , 95 % CIs:  $-1.18, -0.04$ ,  $p = 0.04$ ). The intervention had no significant impact on school absence. However, the results are trending in the hypothesized direction, indicating that the intervention appears to reduce the likelihood of higher school absences over time, marked by the significant effect of time ( $\chi^2 [2] = 6.49$ ,  $p < 0.04$ ) for the intervention group.

**Conclusion:** These outcome trends support the rationale for a larger trial to test the efficacy of the ANZANSI intervention.

## 1. Introduction

Approximately 10 % of children (ages 5–17) worldwide engage in child labor, 41 % of which are female (International Labor Organization [ILO] & UNICEF, 2020). According to most recent statistics, sub-Saharan Africa (SSA) continues to have the highest rates of child labor (24 %) in the world (ILO & UNICEF, 2020). Poverty in sub-Saharan Africa, together with family context as a contributing factor, often results in

unaccompanied rural–urban child migration and high incidence of child labor (24 %), leading to heightened vulnerability and risk (Alliance, 2017; Fiorentino et al., 2023; Government of Ghana et al., 2017; ILO & UNICEF, 2020; Sorsa & Abera, 2016). Unaccompanied child migration and child labor are intricately related as most unaccompanied migrant children have to work to survive financially (ILO, 2013). In Ghana, where child labor prevalence is 22 % (Government of Ghana et al., 2017), young girls living in poverty increasingly make up the majority of

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the migrants from the north to the south of the country, mainly working as head-load carriers (Kayayei) in open markets after they drop out of school (Ansong, 2022; Foundation for Women's Health, Research & Development, 2018; Kwankye, 2012; UNICEF, n.d.). Girls list poverty, education-related expenses, and family factors (e.g., mistreatment, domestic violence) as push factors for their unaccompanied migration to big cities for work (Awumbila & Ardayfio-Schandorf, 2008; Kwankye, 2012). Similar trends have been observed in Ethiopia where adolescent girls migrate independently from rural to urban areas in pursuit of better employment opportunities (Erulkar et al., 2006). This migration is frequently driven by economic necessity, societal pressure to marry early, heavy burden of domestic work, poor quality of education in rural areas, and the lure of perceived better living standards in urban environments (Erulkar et al., 2006).

Child labor undermines children's psychosocial and emotional well-being and educational trajectories (Anderson et al., 2017; Hamenoo et al., 2018; Kwankye, 2012). Unaccompanied child migrants who migrate for work are even at higher risk as they are more vulnerable to negative outcomes during and after migration (e.g., sexual exploitation, trafficking, living on streets, physical maltreatment, lower levels of physical and mental health, higher risk for drug use) because of challenging working and living conditions, lack of community oversight and parental supervision, and heightened disenfranchisement (Anderson et al., 2017; Erulkar, 2020; Erulkar & Medhin, 2021; ILO, 2013).

In addition to adverse health and mental health outcomes, child labor is concerning because of its potential harm to children's education by either forcing children to drop out of school early to start work or to combine school with long work hours (Hamenoo et al., 2018). Child labor negatively impacts academic performance, leading to grade retention or dropout (Hamenoo et al., 2018; Lee et al., 2021). Education and child labor are naturally interrelated for children who combine school and work because the time spent on working cannot be spent on attendance at school or homework and vice versa (Hamenoo et al., 2018; ILO & UNICEF, 2020). Additionally, the immediate economic needs often take precedence over the long-term benefits of education resulting in a trade-off (Erulkar et al., 2006).

Numerous studies across the globe have shown a strong link between unexcused absences and an increased risk of dropping out of school (Baiden et al., 2019; Gubbels et al., 2019; Thouin et al., 2020). Research conducted by Thouin et al. (2020) found that students with a high number of unexcused absences were significantly more likely to drop out compared to their peers with better attendance records. Another study by Baiden and colleagues (2019) in Ghana further supported these findings, showing that each additional unexcused absence of a student from school significantly increased the likelihood of dropping out. In the same light, a meta-analytic review has emphasized the incremental effect of each unexcused absence on the probability of dropout (Gubbels et al., 2019). These insights elucidate the cumulative nature of absenteeism's impact on students' academic trajectories.

In SSA, poverty is often cited as a significant factor contributing to unexcused absences in schools. Several studies have examined the link between poverty and school absenteeism in SSA (Adelabu et al., 2016; Baiden et al., 2019). The impact of poverty on unexcused absences in SSA is intertwined with societal and cultural factors that shape attendance patterns among students. In some communities, traditional norms and expectations prioritize household responsibilities and labor over formal education, leading to higher rates of absenteeism (Awumbila & Ardayfio-Schandorf, 2008; Ombongi & Bunyi, 2018). Family commitment to girls' education is often undermined when the family has limited financial resources (Awumbila & Ardayfio-Schandorf, 2008). Due to traditional gender norms in SSA, including Ghana, home-directed outcomes (e.g., household chores, marriage, and childbearing) are more emphasized than educational outcomes (UNICEF, 2021). Consequently, girls in the region are more likely to drop out of school, work, marry, and have children at a young age (UNICEF, 2021).

Parents' beliefs and attitudes on gender norms and education impact

their decisions on child labor, putting girls at a disadvantage (UNICEF, 2021). This has important implications for girls as female education delays marriage, increases their chances for employment in the paid labor market, and improves health outcomes for them and their children (Shabaya & Konadu-Agyemang, 2004). In addition, child maltreatment is identified as a risk factor for unaccompanied child migration (ILO, 2013; Olsson et al., 2017). Hence, working closely with families to strengthen family relations and increase awareness on gender norms and education is critical.

Despite the above-mentioned risks and negative outcomes, few interventions have focused on unaccompanied child migration for work, and to our knowledge, none has focused on adolescent girls who are more vulnerable to this high-risk situation in Ghana (United States Department of Labor, 2017). Yet, considering the close relationship between school dropout and child unaccompanied migration/child labor, interventions that address factors related to school dropout can be effective (Jariego, 2021). In this study, we examined the preliminary impact of an intervention that combined two evidence-based interventions, a family-level asset-based economic empowerment intervention and a family strengthening intervention, on intention to migrate and unexcused absences among adolescent girls at risk of dropping out of school in the Northern region of Ghana. We hypothesized that adolescent girls in the intervention group would have lower scores of intention to migrate and lower number of unexcused absences over time compared to those in the control group.

## 2. Methods

### 2.1. Study setting

The study was conducted in the Northern region of Ghana, one of the three poorest regions in the country. Specifically, the region has one of the highest incidences of multidimensional poverty index and one of the highest rates of child labor (Ghana Statistical Service, 2022). Additionally, the Northern region has one of the lowest rates of school attendance and literacy in the country, with only 35 % of the girls aged 6 years and older classified as literate—compared to 66 % at the national level (Ghana Statistical Service, 2022). The Northern region has been identified as one of the main regions with significant levels of adolescent girls' migration for kaya work (Ansong, 2022; Foundation for Women's Health, Research & Development, 2018).

### 2.2. Participants

We analyzed longitudinal data from adolescent girls ( $n = 97$ ) who participated in the ANZANSI (resilience in Dagbani—the local language in the study area) pilot study (2019–2022). The inclusion criteria for adolescent girls were: (1) enrolled in school and living within a family (defined broadly—not necessarily biological parents); (2) ages 11 to 14; (3) capable of giving assent; and (4) skipping school in the past academic term (with at least 10 % of unexcused absences) (Sensoy Bahar et al., 2020). We recruited 100 adolescent girls (and their caregivers) from 10 comparable public junior high schools within the Tamale Metropolitan District with the highest rates of female student dropouts. Three dyads from the treatment arm stated time constraints and withdrew from the study before baseline data collection.

### 2.3. Recruitment

Details on participant recruitment are provided in the study protocol (Sensoy Bahar et al., 2020). In summary, participants were recruited from 10 public junior high schools in the Tamale district in the Northern region of Ghana. School administrators shared the study flyer with students and caregivers. All caregivers with an eligible child/ren were encouraged to contact the school for details. Subsequently, the study team met with families in groups in each selected school to present the

study and answer questions. The research team met with potential participants for screening and informed consent. Informed consent and assent were obtained in English from all participants by trained research assistants and the project coordinator. The research team conducted the consenting and assenting separately to avoid coercion. Participants were blinded to the study condition.

All participants (adolescent girls and caregivers) received incentives at each assessment time point. In addition, the families in the treatment arm received transport refunds for each intervention session they attended.

#### 2.4. Randomization

We compiled a list of schools with the highest rates of female student dropouts at the junior high school level within the Tamale Metropolitan District. We then randomly selected ten schools at 0.5 km distance from each other (to avoid contamination) and randomized them to control ( $n = 5$ ) or treatment ( $n = 5$ ) conditions using SPSS software. All participants within the same school were assigned to the same study condition to avoid contamination.

#### 2.5. Ethical considerations

All study procedures were approved by the Institutional Review Board of Washington University in St. Louis (IRB # 202001043, approved on Jan 14, 2020) and the Ethics Review Board at Ghana Health Service (GHS-ERC 011/11/19, approved on Dec 13, 2019).

#### 2.6. Study conditions

**Control arm (Bolstered usual care).** Adolescent girls in the control arm received services/ education as usual in their respective schools, bolstered by school textbooks. While primary school education is universal and free in Ghana, scholastic materials are costly –which undermines school attendance. Hence, these were provided to participants in all study schools.

**Intervention arm (ANZANSI family program).** Informed by asset theory (Sherraden, 1991), family systems theory (Kerr & Bowen, 1988), and parental ethnotheories framework (Harkness & Super, 1996), the ANZANSI family program, delivered over 9 months, combined two evidence-based interventions already tested in the SSA: Family economic empowerment (FEE) intervention to improve household financial stability and multiple family group (MFG) family strengthening intervention to strengthen family relations and address cultural norms described in detail elsewhere (Sensoy Bahar et al., 2020; 2024). The FEE component was informed by the Asset theory that posits that when families have assets, they will be more likely to plan for future activities that may promote positive youth and family outcomes (Sherraden, 1991). The FEE component included financial literacy workshops (4 sessions), income-generating activities (2 sessions), and child development accounts (CDAs) (see Sensoy Bahar et al., 2020 for more details). The CDAs were opened for all participants in the name of the adolescent girl with her caregiver as a co-signer in the intervention group. Any of the participant's family members, relatives, or friends were allowed to contribute to the CDAs. The study matched the account every month at a match rate of 2:1, with the matching cap (the maximum amount of family contribution to be matched by the intervention program) at an equivalent of US\$10 per month per family.

The second component of the ANZANSI Family Program was the evidence-based manualized 16-session MFG intervention, called Dang-Malgu (Family Togetherness in Dagbani) to strengthen family relationships. The sessions are organized around the skills and family processes referred to as the 4Rs (Rules, Responsibility, Relationships, and Respectful Communication) and 2Ss (Stress and Social Support). The sessions include content, skill-building, and practice activities that encourage learning and interaction among participating family

members and other families in the group (McKay et al., 2004).

Each group (one per treatment school) involved 7 to 10 families, with the adolescent girl and an adult caregiver present in each session. Two school health education program (SHEP) coordinators at each school, trained by the study implementation partner BasicNeeds Ghana, facilitated the sessions. Delivered at the school site on the weekends, each weekly session lasted 60 to 90 min (see Sensoy Bahar et al., 2022 for further details on the intervention).

#### 2.7. Data collection

Data were collected at baseline, and at 9 and 15 months post-intervention initiation. All questionnaires were administered by research assistants in English. All research assistants completed training in human subjects protection and good clinical practice training before engaging with study participants.

#### 2.8. Measures

**Intention to Migrate.** We measured the primary outcome using a single item designed to gauge the likelihood of migration before completing school. Specifically, we asked: "How likely do you see yourself migrating to other cities for work before you finish school?" Participants responded using a 5-point Likert scale, where 1 represented "not likely at all" and 5 indicated "extremely likely". This measure was treated as a continuous variable, with higher scores indicating a greater intention to migrate to cities for work.

**School Absence.** We assessed school absences using records of student attendance obtained from the school administration. To be eligible for participation, adolescent girls were required to have reported more than 10 % school absence at enrollment. The school term immediately following enrollment served as the baseline measurement period. Due to eligibility criteria requiring greater than 10 % absence, enrollment data were not included in the analysis to avoid biased elevated absence rates. We calculated each student's school absence percentage by dividing the number of days missed by the total number of school days in the term and multiplying by 100 to convert this into a percentage. This percentage was recorded at three time points: baseline, 9 months, and 15 months post-intervention. To facilitate analysis, these percentages were then dichotomized into two categories: students with less than 10 % absence were coded as 0, and those with 10 % or greater absence were coded as 1.

#### 2.9. Power analyses

The sample was determined a priori to determine the minimum detectable effect sizes using NCSS PASS. Although this was a pilot study, our power analyses assumed  $\alpha = 0.05$ , power = 0.80, 83 participants retained at the final time point, and a conservative unconditional intraclass correlation coefficient (ICC) of 9.3 % based on our previous studies (Sensoy Bahar et al., 2020 for further details). For preliminary efficacy exploratory analyses with two post-baseline time points, minimum detectable standardized mean differences ranged from 0.56 to 0.69 for within-subjects correlations ranging from 0.20 to 0.80.

#### 2.10. Analytic approach

This study aimed to investigate two primary outcomes among adolescent girls nested within ten schools: absence rates and intention to migrate. Absence was dichotomized into less than 10 % and equal to or more than 10 % absence from school, while intention to migrate was measured on a scale, with higher scores indicating a greater intention to migrate. Descriptive statistical analyses were conducted to assess the socio-demographic profiles of the participants. This involved calculating mean values and standard deviations for variables on a continuous scale alongside frequencies and percentages for categorical variables. We

used the cluster commands in Stata to adjust for within-school correlation to compare baseline characteristics between the treatment and control groups using the Wald F-statistics (design-based F) and the Rao–Scott F-statistics (Rao & Scott, 1984).

The data comprised a hierarchical structure with repeated measurements (Level 1) clustered within individual adolescent girls (Level 2), who are nested within schools (Level 3). A total of 10 schools participated in the study, and the analysis included all adolescent girls within these schools who met the inclusion criteria. To account for the hierarchical nature of the data and potential intra-group correlations, we employed mixed-effects logistic regression models for the binary outcome of absence from school and mixed-effects linear regression models for the continuous outcome of intention to migrate. The model included fixed effects for group (intervention or control conditions), time (baseline, 9-month, and 15-month post-intervention initiation), and their interactions, allowing us to examine the effect of group membership and time on the outcomes—likelihood of having 10 % or more absence, and intention to migrate. The random effects structure included random intercepts for schools and participants, with an unstructured covariance matrix, to account for within-school and within-participant variations over time. Odds ratios were reported to quantify the effect sizes for the binary outcome.

Similarly, the model also included time as a continuous variable in the random part of the model, enabling us to explore the trajectory of intention to migrate over time. Model assumptions were checked through diagnostic plots and tests, including checks for normality of residuals and homoscedasticity. This analytical approach, leveraging mixed-effects models, allowed us to account for the complex hierarchical structure of our data and to investigate the effects of time and group membership on absence rates and intention to migrate among adolescent girls in a school setting. All analyses were conducted using Stata SE, version 17. Huber-White cluster (school) adjusted confidence intervals were reported, and the level of significance was set at 0.05.

**Table 1**  
Description of Socio-demographic Characteristics of Adolescents at Baseline.

Characteristics	Control N = 50	Treatment N = 47	Total N = 97
<b>Adolescent’s Characteristics</b>			
Age (years), Mean (SD)	13.64 (0.63)	13.74 (0.53)	13.69 (0.58)
<b>Household size (Mean, SD)</b>			
People in the household	14.98 (8.45)	14.62 (7.45)	14.80 (7.96)
Children in the household	6.24 (4.37)	6.83 (4.46)	6.52 (4.40)
Family assets (Mean, SD)	7.57 (2.68)	8.72 (3.65)	8.14 (3.23)
<b>Primary caregiver, n (%)</b>			
Biological parents	41 (82 %)	40 (85 %)	81 (84 %)
Other relatives	9 (18 %)	7 (15 %)	16 (16 %)
<b>Orphanhood Status, n (%)</b>			
Non-orphan	42 (84 %)	41 (87 %)	83 (86 %)
Orphan	8 (16 %)	6 (13 %)	14 (14 %)
<b>Outcomes</b>			
<b>Intention to migrate (Mean, SD)</b>			
At baseline	1.6 (1.05)	1.64 (1.21)	1.62 (1.12)
At 9-month post-intervention	1.42 (0.84)	1.28 (0.72)	1.35 (0.78)
At 15-month post-intervention	1.72 (1.21)	1.14 (0.051)	1.44 (0.98)
<b>School absence, n (%)</b>			
At baseline			
Less than 10 %	23 (46 %)	20 (43 %)	43 (44 %)
Equal to or more than 10 %	27 (54 %)	27 (57 %)	54 (56 %)
<b>At 9-month post-intervention</b>			
Less than 10 %	24 (48 %)	27 (57 %)	51 (53 %)
Equal to or more than 10 %	26 (52 %)	20 (43 %)	46 (47 %)
<b>At 15-month post-intervention</b>			
Less than 10 %	27 (54 %)	32 (68 %)	59 (61 %)
Equal to or more than 10 %	23 (46 %)	15 (32 %)	38 (39 %)

### 3. Results

#### 3.1. Sample characteristics

Table 1 presents baseline socio-demographic characteristics and outcomes for adolescent girls participating in the ANZANSI study (N = 97). The average age of adolescents at baseline was approximately 13.69 (SD = 0.58) years, with a mean household size of 14 people (SD = 7.96) and an average of 6 (SD = 4.40) children below 18 years per household. Participants were asked to identify family assets from a list of 1–20 items, including cows, goats, plantations, and vehicles such as motorcycle or car. The average number of family assets identified was 8.14 (SD = 3.23). Additionally, 84 % of adolescents were under the care of biological parents, while 14 % of adolescents had lost one or both biological parents. Regarding the outcomes, the intention to migrate at baseline was similar between the groups, with an overall mean of 1.62. At baseline, 56 % of participants reported 10 % or more absences from school. We found no statistically significant differences between the control and treatment groups regarding socio-demographic characteristics and outcomes at baseline, providing a balanced foundation for subsequent analyses of intervention effects.

#### 3.2. Impact of the intervention on intention to migrate among adolescent girls

Coefficients and associated confidence intervals and test statistics from the linear mixed model appear in Table 2. There was no statistically significant overall main effect of time ( $\chi^2 [2] = 4.46, p = 0.12$ ) and interaction between the study group and time ( $\chi^2 [2] = 4.75, p = 0.09$ ). However, there was a statistically significant overall main effect of condition ( $\chi^2 [1] = 3.69, p = 0.05$ ). While there was no immediate significant impact of the ANZANSI intervention on intention to migrate

**Table 2**  
Regression Coefficients and 95 % Confidence Intervals for Intention to Migrate and School Absence among Adolescent Girls in Northern Ghana (n = 97).

Model components	Intention to migrate scores		School Absence	
	b (95 % CI)	p-value	OR (95 % CI)	P-value
<b>Study group <math>\chi^2(df)</math></b>	$\chi^2(1) = 3.69$	0.05	$\chi^2(1) = 0.42$	0.52
Control group (ref category)				
ANZANSI intervention group	0.04 (−0.37, 0.45)	0.85	1.09 (0.25, 4.79)	0.91
<b>Time, <math>\chi^2 (df)</math></b>	$\chi^2(2) = 4.46$	0.12	$\chi^2(2) = 6.49$	0.04
Baseline (ref category)				
9 months	−0.18 (−0.53, 0.17)	0.31	0.90 (0.37, 2.19)	0.82
15 months	0.12 (−0.28, 0.52)	0.55	0.66 (0.27, 1.62)	0.37
<b>Group#Time, <math>\chi^2 (df)</math></b>	$\chi^2(2) = 4.75$	0.09	$\chi^2(1) = 1.93$	0.38
9 months # ANZANSI intervention group	−0.18 (−0.68, 0.32)	0.49	0.53 (0.15, 1.89)	0.33
15 months # ANZANSI intervention group	−0.61 (−1.18, −0.04)	0.04	0.41 (0.11, 0.51)	0.18
Constant	1.6 (1.32, 1.88)	0.001	1.26 (0.44, 3.58)	0.67
No of observations	290		291	

scores at 9 months ( $b = -0.18$ , 95 % CIs:  $-0.53, 0.17$ ,  $p = 0.31$ ), a significant negative effect was observed at 15 months post-intervention ( $b = -0.61$ , 95 % CIs:  $-1.18, -0.04$ ,  $p = 0.04$ ), suggesting a decrease in the intention to migrate compared to the control group over time (see Fig. 1).

### 3.3. Impact of the intervention on school absence among adolescent girls

Odds ratios (OR), associated confidence intervals, and test statistics from the logistic mixed model appear in Table 2. There was no statistically significant overall main effect of group ( $\chi^2 [1] = 0.42$ ,  $p = 0.52$ ) and interaction between study group and time ( $\chi^2 [2] = 1.93$ ,  $p = 0.38$ ). However, there was a statistically significant overall main effect of time ( $\chi^2 [2] = 6.49$ ,  $p < 0.04$ ). As indicated in Fig. 2, the results are trending in the hypothesized direction indicating that the intervention appears to reduce the likelihood of higher school absences, particularly as the program progresses, evidenced by the significant effect of time over time.

## 4. Discussion

This study examined the preliminary impact of the ANZANSI Family Program, a combination intervention of evidence-based FEE and MFG components on intention to migrate and school absence among school-going adolescent girls in Northern Ghana. The quantitative results indicated that the ANZANSI intervention may decrease the intention to migrate and school absence among adolescent girls at risk of dropping out of school and their families in Northern Ghana. Specifically, while there was no immediate significant impact of the ANZANSI intervention on intention to migrate scores at 9 months, a significant reduction was observed at 15 months post-intervention between the treatment and control groups. Although there was no significance between the treatment and control groups, the results for the school absence outcome trended in the hypothesized direction indicating that the intervention is likely to reduce higher school absences. It is particularly noteworthy that the intervention impact was stronger at 15 months compared to 9 months, pointing to sustained impact.

This may be because families were able to access their matched savings account only after the completion of the intervention, in

addition to their savings accounts that they had access during the study for any education or small business-related expenses. It is also possible that most participants accessed their savings accounts primarily at the end of the study rather than throughout. Poverty is cited as the main driving factor for both poor school attendance and unaccompanied migration for work (Adelabu et al., 2016; Awumbila & Ardayfio-Schandorf, 2008; Baiden et al., 2019; Kwankye, 2012). Receiving this additional amount may have provided the additional boost to stabilize the household's financial situation and secure the educational resources (e.g., scholastic materials, uniforms, school fees) that may otherwise undermine school attendance. The stabilization of the households' financial situation with this additional boost may also have decreased the intention of migrate among the treatment group. These outcome trends support the rationale for a larger trial to test the efficacy of the ANZANSI intervention.

While there have been no studies examining intervention impact on unaccompanied child migration, studies testing the same economic empowerment intervention used in this study have reported positive educational outcomes among different adolescent populations. For instance, a 5-year randomized clinical trial among youth living with HIV in Uganda reported that while the intervention was not efficacious in reducing the rates of repeating a class, the likelihood of dropping out of school for participants in the economic empowerment intervention group was reduced by 32 % (Kizito et al., 2023). Another study with adolescents orphaned by HIV in Uganda found that those who received the economic empowerment intervention coupled with mentorship had significantly higher Primary Leaving Examination scores and significantly higher confidence in their educational plans at 24-month post-intervention initiation (Ssewamala et al., 2016). Finally, a cluster randomized clinical trial that tested the impact of an intervention that examined the impact of the economic empowerment intervention combined with a multiple family group family strengthening intervention (same interventions used in this study) among adolescent girls in Uganda found that at 12 months (mid-intervention), girls who received the combination intervention missed school significantly less than those who received the economic empowerment intervention only. However, at 24 months (end-intervention), there were no differences between the two intervention groups, although girls in both intervention groups had significantly fewer days of absence than those in the control group

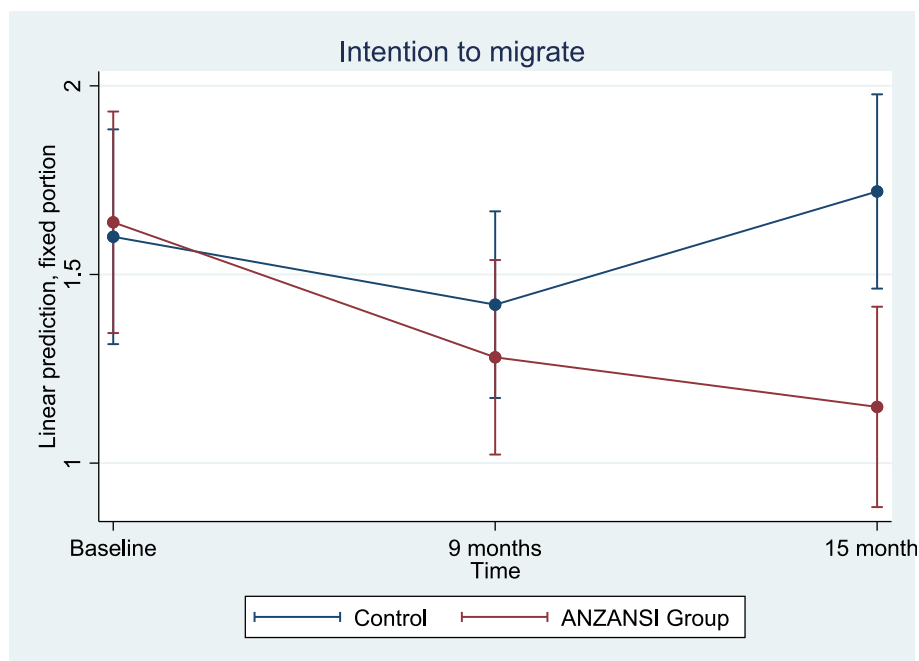


Fig. 1. Intention to migrate.

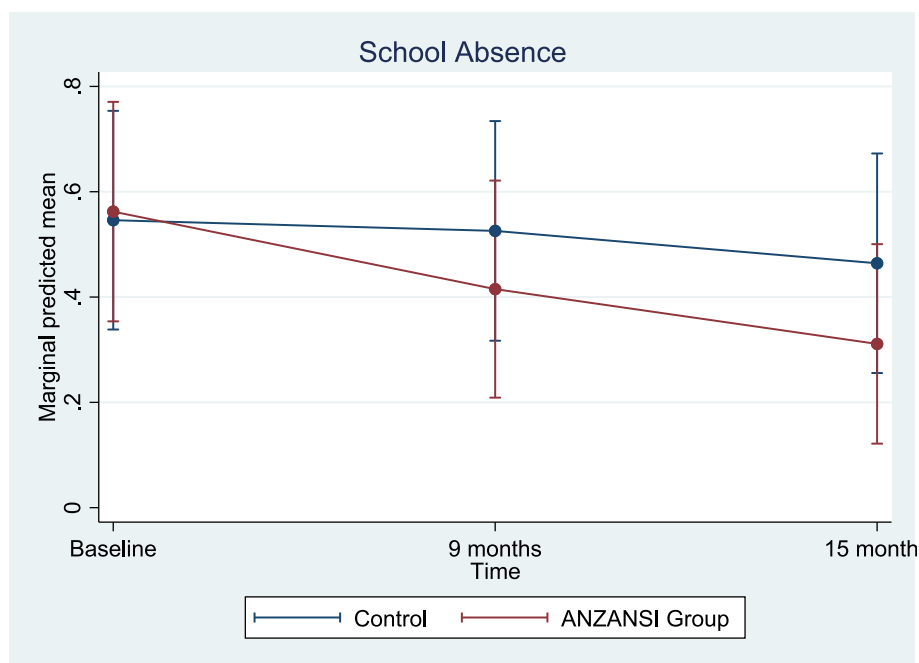


Fig. 2. School Absence.

(Brathwaite et al., 2024).

The ANZANSI intervention could have reduced the intention to migrate and school dropout rates through several ways. First, through encouraging households to deposit money in their savings accounts, and training them on how to start small businesses and financial literacy, the intervention may have helped families have enough money to cover the adolescent girls' school fees and other educational materials that tend to undermine school attendance in poverty-impacted households, and relatedly, may have encouraged adolescent girls to be less likely to consider migration. In Ghana, despite the significant reduction in direct educational costs after the country adopted the Free Compulsory Universal Basic Education (FCUBE) policy in 1995, caregivers still must cover educational expenses such as uniforms, scholastic materials, and other fees (Akyeampong, 2009). This is especially resonant for families in the Northern region of Ghana—a region disproportionately impacted by poverty. Therefore, the family economic empowerment component may have facilitated adolescent girls' access to education by strengthening the household's capacity to cover additional educational costs, and relatedly, make migration a less appealing alternative. In addition, family relations, gender norms—including the importance of education for the girl child, and awareness on child labor discussed during the Dang-Malgu family strengthening sessions may have shifted approaches to girls' education and unaccompanied migration for work. In other words, both adolescent girls and their caregivers may have been more likely to appreciate the importance of education and relatedly school attendance and less likely to consider unaccompanied migration for labor as traditional norms and expectations from girls have been identified as a contributing factor to school absenteeism (Awumbila & Ardayfio-Schandorf, 2008; Ombongi & Bunyi, 2018) and child labor (UNICEF, 2021). Additionally, family relations have been cited as a contributing factor to unaccompanied migration for work among adolescent girls in Ghana. In another mixed methods study, our quantitative results showed that family cohesion scores improved significantly from baseline to 9 months for the treatment group, supported by qualitative results. Hence, this improvement may also have reduced the intention to migrate over time.

We acknowledge the following limitations. First, we report results from a small pilot study not sufficiently powered to conduct formal hypotheses testing. Due to the small sample size, certain potentially

critical associations may have been missed or spurious positive results may have been detected. Second, the intention to migrate was self-reported and findings may be affected by social desirability bias. Third, we measured the intention to migrate and not the migration behavior as the outcome variable. Hence, reporting may be influenced by social desirability and the impact of the intervention on actual unaccompanied migration needs to be examined. Finally, more longitudinal assessment time points are needed to determine sustained impact. Despite these limitations, this study contributes to the limited literature focused on interventions that target the prevention of unaccompanied migration among adolescent girls for labor. The study's preliminary results provide compelling evidence to test the efficacy of the intervention in a larger trial.

## 5. Conclusion

School absenteeism can result in school dropout (Baiden et al., 2019; Gubbels et al., 2019; Thouin et al., 2020). Relatedly, dropping out of school paves the way for several negative outcomes, including the unaccompanied migration of adolescent girls to big cities for work. Research shows that poverty is a significant predictor of school absenteeism (Adelabu et al., 2016; Baiden et al., 2019) as well as unaccompanied child migration for work (Alliance, 2017; Government of Ghana et al., 2017; ILO, 2013). In addition to financial challenges, families living in resource-limited communities experience several poverty-related stressful circumstances that can affect children's school attendance (Osuji et al., 2018; Wang et al., 2021) and unaccompanied migration (Fiorentino et al., 2023; Sorsa & Abera, 2016). Finally, it is well-documented that traditional gender norms in SSA, including in Ghana, may undermine adolescent girls' ability to stay in school (Awumbila & Ardayfio-Schandorf, 2008). Hence, combining economic empowerment interventions with family strengthening interventions that target family relations, gender norms, and awareness about risks associated with child labor and unaccompanied migration may be beneficial.

## 6. Consent to participate

The study obtained written assent from all adolescent girls who

participated in the study.

### Ethics approval

All study procedures were approved by the Institutional review Board of Washington University in St. Louis (IRB # 202001043, approved on Jan 14, 2020) and the Ethics review Board at Ghana Health Service (GHS-ERC 011/11/19, approved on Dec 13, 2019).

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### Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

### Appendix A. Supplementary material

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.childev.2025.108205>.

### Data availability

Data will be made available on request.

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