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Insights for improving malaria, family planning, and maternal and child health outcomes in northwestern Nigeria through social and behavior change research

Adolescent female empowerment, ideations, and health behavior

This brief provides rigorous evidence-based insights for implementers and researchers of social and behavior change (SBC) programs that seek to improve knowledge, attitudes, norms and behaviors among pregnant and postpartum female adolescents (15–19 years). It focuses on adolescent empowerment and its links to adolescent female behaviors and ideations. It is one of a series of briefs that present findings from a Breakthrough RESEARCH study that uniquely captures data on a wide range of psychosocial drivers of behavioral outcomes in the areas of family planning, malaria, and maternal, newborn, and child health, and nutrition (MNCH+N). The results presented in this series can inform the improvement of health programming for women, children, and adolescents in Nigeria, help to achieve the objectives of the National Strategic Health Development Plan II (2018–2022),¹ and support global efforts to achieve the United Nations Sustainable Development Goals.²

Breakthrough RESEARCH and Breakthrough ACTION in Nigeria

Breakthrough RESEARCH and Breakthrough ACTION are USAID's flagship SBC programs. Breakthrough ACTION in Nigeria implements SBC activities in 11 states and the Federal Capital Territory by targeting key psychosocial factors at multiple socioecological levels (e.g., individual, community, society) in order to improve health behaviors in the areas of malaria, family planning, and MNCH+N. Breakthrough RESEARCH in Nigeria conducts rigorous research and evaluation to inform SBC program implementation in three of

KEY POINTS

Empowerment of female adolescents, at the individual level, is thought to be an important factor associated with norms and health, but the Female Empowerment Index has not previously been used to explore empowerment in relation to specific health outcomes or behaviors.

Overall, compared with pregnant and postpartum female adolescents in the lowest empowerment tertile, those who were moderately or highly empowered were more likely to engage in positive health behaviors such as using a modern method of contraception, attending antenatal care, and care-seeking from a formal health care provider for childhood illnesses.

Empowerment was generally not found to be significantly associated with care seeking behaviors or treatment behaviors for child illness. The exception to this was seeking care from a formal medical source for child diarrhea, for which female adolescents in the highest empowerment tertile were significantly more likely to have reported seeking care.

The results underscore the importance of contextual information to understand the associations between empowerment and health, and the need to avoid narrow definitions of empowerment which rely solely on measures such as employment or literacy.

these program states (Kebbi, Sokoto and Zamfara). Findings presented here are from a Breakthrough RESEARCH baseline study that informs SBC program adaption and scale-up in Nigeria. Results of this analysis will not only inform adaptation and scaling up of Breakthrough ACTION programming in Nigeria but will also address gaps in the evidence base for adolescent social behavioral change interventions and theory more broadly.

Setting the Context

Empowerment of female adolescents, at individual level, has been proposed as an important factor related to social norms and health.³ For the purposes of this analysis, empowerment refers to individual-level economic, social, and emotional/psychological characteristics indicative of the ability of female adolescents to have control over their lives.⁴ Empowerment is ideally viewed as evolving, and thus individuals may be placed on a spectrum within this paradigm.^{3,4}

Female empowerment may be conceptualized at the individual-level by understanding context-specific dimensions. The Female Empowerment Index (FEMI) was developed utilizing data from Nigeria⁵ and designed to capture sub-national variation in female empowerment by including aspects of empowerment not included in previous studies: all types of employment (formal and informal), personal agency and decision making, attitudes to physical and sexual violence, and access to reproductive health services. Although the FEMI index was developed in the Nigerian context, it has not been used to explore empowerment in relation to specific health outcomes or behaviors. Similarly, literature from the region⁶⁻¹⁰ includes little research on empowerment of *adolescents* in relation to ideation and behavior around MNCH+N or malaria.

The purpose of this research brief is to summarize the association between empowerment of pregnant and postpartum

female adolescents (aged 15–19 years) and health behaviors important to Breakthrough ACTION programming in our sample from the behavioral sentinel surveillance (BSS) baseline survey. To do this we created a new empowerment index adapted from relevant components found in the literature, with additions from the BSS, and applied it to the survey sample of pregnant and postpartum adolescents.

Study Methods

Results are based on the BSS baseline survey conducted between September and October 2019 in Breakthrough ACTION program areas in Kebbi, Sokoto, and Zamfara States of northwestern Nigeria. The 15–19 age cohort represents a key sub-group in the BSS, which contains information on 590 currently pregnant and 353 postpartum adolescents. This analysis involved constructing an index of empowerment based on the existing literature on female empowerment in Nigeria and sub-Saharan Africa.^{4,5}

Given strong state and regional variation, and following review of the literature, the current index was adapted with components for specific health areas of interest to Breakthrough RESEARCH and including relevant items from the BSS for that health area, along with measures of self-efficacy where appropriate to contextualize empowerment within the health domains. Following input from Nigerian researchers, measures included in the final model analysis were chosen considering cultural and contextual factors in pregnant and postpartum female adolescent empowerment and in northwest Nigeria such as patriarchal family structure and employment opportunities available to female adolescents. Each health outcome-specific index constructed was tested by factor analysis using STATA/SE 15.1.

The variables of the base empowerment index that are included in each health outcome-specific index are shown in Table 1.

TABLE 1 BASE EMPOWERMENT MEASURES FROM BSS QUESTIONNAIRE ADDED TO HEALTH AREA SPECIFIC VARIABLES

CATEGORY	QUESTION	RESPONSE OPTIONS
Household decision making	Who usually makes decisions about use of respondent’s money?	0: Spouse only, other, or NA 1: Respondent or respondent and spouse jointly
	Who usually makes decisions about use of spouse’s money?	0: Spouse only, other, or NA 1: Respondent or respondent and spouse jointly
	Who usually makes decisions about major purchases?	0: Spouse only, other, or NA 1: Respondent or respondent and spouse jointly
	Who usually makes decisions about school?	0: Spouse only, other, or NA 1: Respondent or respondent and spouse jointly
	Who usually makes decisions about work outside the home	0: Spouse only, other, or NA 1: Respondent or respondent and spouse jointly
Education	Have you ever attended school? What is the highest level of school you have attended??	0: No education or primary education or Islamic education 1: Secondary or tertiary education

The following are health outcome-specific index measures used for analysis:

Current use of modern contraception

- Base measures from BSS Questionnaire in Table 1
- Spousal communication:
 - Have you ever talked with your spouse about whether or not to use a method of modern contraception?
- Contraception decision-making:
 - Who decides if you use a contraceptive method?
- Self-efficacy:
 - How confident are you that you could convince your spouse that you should use a modern method of contraception for birth spacing?
 - How confident are you that you could use a modern method of contraception for birth spacing even if your spouse did not want to?

Immediate breastfeeding

- Base measures from BSS Questionnaire in Table 1
- Social influences:
 - Besides yourself, who else may influence your decision about whether to breastfeed or not?

4+ antenatal care (ANC) visits with a skilled provider and intermittent preventative treatment in pregnancy for malaria (IPTp)

- Base measures from BSS Questionnaire in Table 1
- Social influences:
 - Besides yourself, who else may influence your decision to go to at least 4 ANC visits at a health facility during pregnancy?
- Spousal communication:
 - It is important for a woman to discuss her pregnancy with her spouse so they can make decisions together.
- Self-efficacy:
 - How confident are you that you could start a conversation with your spouse about attending ANC at a health facility?
 - How confident are you that you could get to a health facility for ANC?

Child immunization

- Base measures from BSS Questionnaire in Table 1
- Social influences:
 - Besides yourself, who else may influence your decision to get a child vaccinated?



Fever and diarrhea care-seeking and treatment

- Base measures from BSS Questionnaire in Table 1
- Self-efficacy:
 - How confident are you that you could convince your spouse to let you seek advice or treatment for a sick child?
- Spousal communication:
 - It is important for couples to discuss child health and make decisions together about the health of their child.

Acute respiratory infections (ARIs) care-seeking and treatment for children

- Base measures from BSS Questionnaire in Table 1
- Self-efficacy:
 - How confident are you that you could convince your spouse to let you seek advice or treatment for a sick child?
 - How confident are you that you could convince your spouse to let you seek care or advice for your child with cough and fast or difficult breathing symptoms?
- Spousal communication:
 - It is important for couples to discuss child health and make decisions together about the health of their child.

All regression models controlled for household wealth, ethnicity, level of spousal education, and if the spouse had other wives. Child health models (immunization, care seeking, and treatment) also controlled for child's sex and age as well as social influence. Each regression model included ideational covariates relevant to the health behavior outcome. The population was characterized by empowerment into tertiles with low, medium, and high scores on the health specific indices of empowerment.

Key Results

Greater empowerment is associated with greater use of family planning

- Female adolescents who were highly empowered were 10.5 times more likely to be using a modern method of family planning than those in the lowest tertile ($p < 0.001$).
- Compared with the least empowered female adolescents, those who were highly empowered were 12.3 percentage points ($p < 0.001$) more likely to be currently using modern contraception.

ANC and initiation of breastfeeding

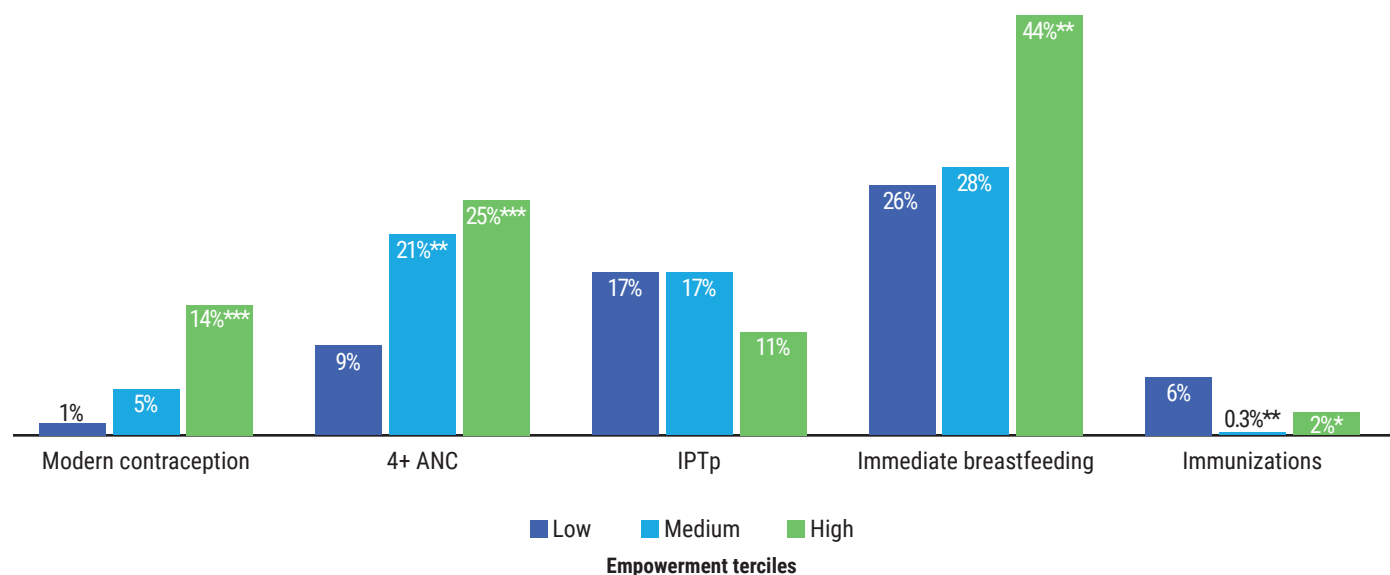
- Compared with the least empowered female adolescents, those who were moderately or highly empowered were 11.6 ($p = 0.005$) and 15.2 ($p = 0.001$) percentage points more likely to attend at least 4 ANC visits with a skilled provider.
- Female empowerment was a significant predictor of initiation of breastfeeding within one hour of delivery. Highly empowered female adolescents were 17.8 percentage points ($p = 0.006$) more likely to immediately breastfeed compared to female adolescents in the lowest empowerment tertile.

Vaccinations and care for childhood illness

- Unexpectedly, female adolescents who were moderately or highly empowered were significantly less likely than the least empowered female adolescents to have children who were fully immunized. However, within this sample, only 11 of 360 children were recorded as fully immunized, so this result must be interpreted with caution.
- Female adolescents in the lowest empowerment tertile were less likely to engage in care-seeking from a formal medical source for childhood illnesses, but this relationship was not statistically significant.
- The only care-seeking outcome that was significantly associated with empowerment was formal care-seeking for child's diarrhea. Female adolescents in the highest empowerment tertile, in comparison to those in the lowest, were 30.8 percentage points more likely to seek care from a formal medical source for their child's diarrhea ($p = 0.001$). Empowerment was not found to be associated with any other care seeking behaviors including care-seeking for childhood fever or ARI.
- Similarly, empowerment was not significantly associated with IPTp, treatment of childhood illness generally, treatment of diarrhea, or treatment of ARI. It is likely that ability to detect associations between these outcomes and empowerment was limited by low sample sizes.

FIGURE 1 EMPOWERMENT AND RMNCH OUTCOMES

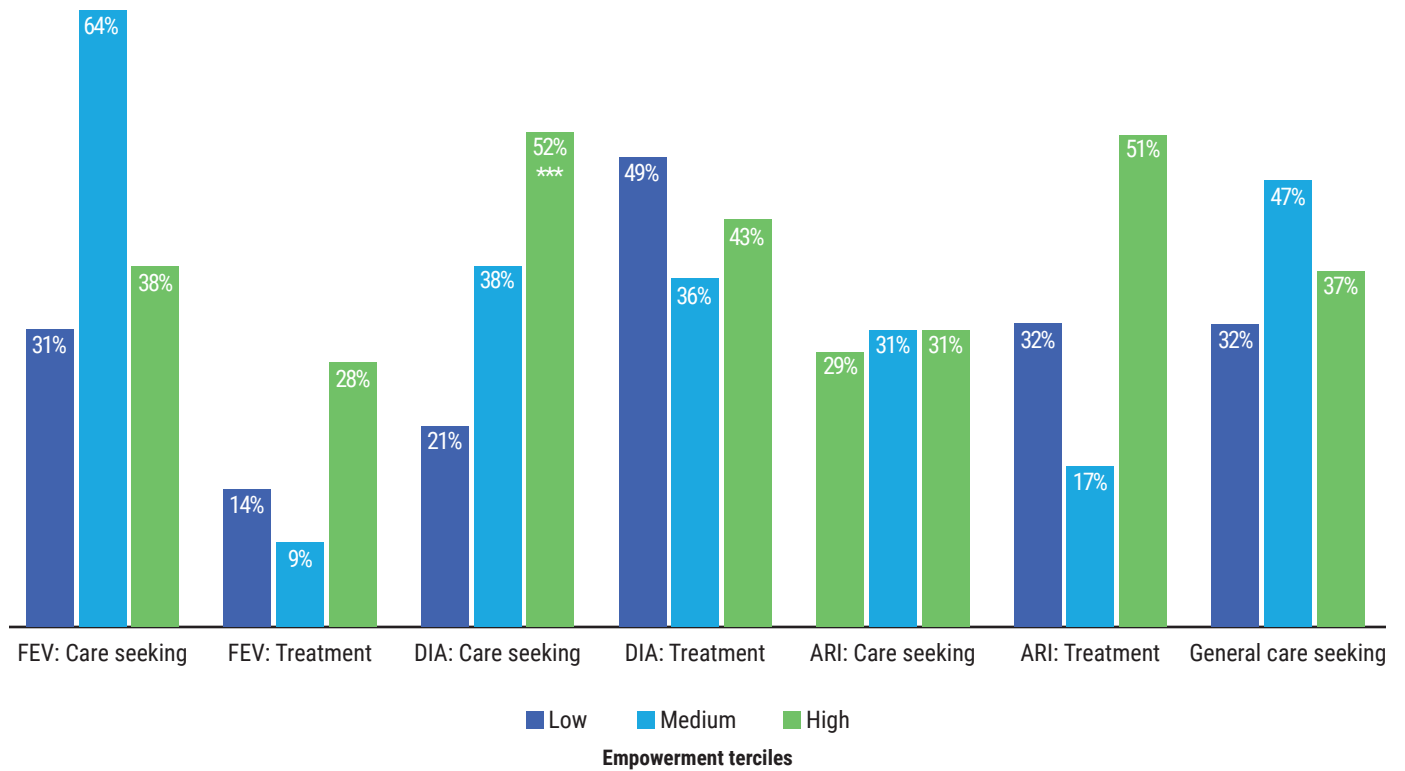
Predicted probabilities: Reproductive and newborn health behaviors by levels of empowerment



Statistical significance
 * $p \geq 0.05$ ** $p \geq 0.01$ *** $p \geq 0.001$

FIGURE 2 EMPOWERMENT AND CARE FOR CHILDHOOD ILLNESS

Predicted probabilities: Care seeking and treatment of childhood illnesses by levels of empowerment



FEV—Fever; DIA—Diarrhea; ARI—Acute respiratory infection

Statistical significance
 *p≥0.05 **p≥0.01 ***p≥0.001

Conclusions

The findings of this analysis indicate that the influence of empowerment varies by health outcome area and that several different factors related to empowerment constrain achievement of health behavior outcomes for pregnant and postpartum female adolescents. The analysis highlights the need to provide contextual information in order to understand the associations between empowerment and health, and the need to avoid narrow definitions of empowerment which rely heavily on measures such as employment. The limitations of data collection are also an important consideration where survey questionnaire items may not have allowed for a full understanding of the conditions in which individual adolescents experience agency. For example, female adolescents may not be classified as working outside the home but may engage in income-generating activities inside the home. Similarly, in a region where a minority of female adolescents receive education beyond primary school level or are engaged in office work, measures of literacy and education may not represent the full range of experiences which provide female adolescents increased agency in their daily lives. It is also not known how being married in adolescence

impacts the operational definition of empowerment from a sociocultural perspective, or in comparison with marriage at older ages.

To ensure progress in improving health outcomes in MNCH+N through SBC interventions, it will be necessary to understand how individual-level empowerment of pregnant and postpartum adolescents constrains choices for health and preventive care. This analysis underlines the heterogeneity of the impact of empowerment in relation to health outcome areas. Addressing and understanding gender and social norms which underlie empowerment for adolescents, and how these norms differentially influence health behavior, will be critical to achieving goals for health and development in Nigeria.

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Our project turns evidence into action by providing thought provoking guidance to improve SBC policy and programming, with the goal of improving the cost-effectiveness of USAID's health and development strategies. Breakthrough RESEARCH catalyzes SBC by conducting state-of-the-art research and evaluation and promoting evidence-based solutions to improve health and development programs around the world. Breakthrough RESEARCH is a consortium led by the Population Council in partnership with Avenir Health, ideas42, Institute for Reproductive Health at Georgetown University, Population Reference Bureau, and Tulane University.