

**FACTORS CONSTRAINING THE FERTILITY IMPACT OF THE SCALE-UP
OF THE NAVRONGO PROJECT IN NORTHERN GHANA**

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Factors constraining the fertility impact of the scale-up of the Navrongo Project in northern Ghana

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Abstract

The Navrongo Project in northern Ghana demonstrated that focusing on community-engaged primary health care while simultaneously engaging traditional male networks can lead to sizeable reductions in fertility and childhood mortality. As a result, the Project's approach was scaled up as a national program called "Community-based Health Planning and Services" (CHPS) and is now a major contributor to Ghana's health care system. However, in the years since the project ended, essential reproductive health components have languished and CHPS' impact on fertility has fallen short of its potential to address unmet need. While long-term observation of the project in the original study area showed that mortality effects were sustained as the program's reach expanded, the original fertility decline has stalled in experimental areas and failed to replicate altogether in subsequently incorporated comparison areas. To investigate the factors that might explain this outcome and understand the system as it currently operates, qualitative implementation research was conducted to elicit reflections from community stakeholders, frontline workers, and CHPS management. Findings attest to the challenges of sustaining a focus on social mobilization while scale up has relied upon a structured system of clinical care. Results indicate a need for strategic reform of national programs for scaling up the original model, refocusing attention on the social engagement strategy.

Introduction

High levels of fertility and unwanted pregnancy persist throughout sub-Saharan Africa, often with dire consequences for the health and well-being of women and children. In Ghana, a project of the Navrongo Health Research Centre demonstrated dramatic success with fertility and childhood mortality reduction. The Navrongo Community Health and Family Planning Project ("the Navrongo Project") posted nurses in isolated rural villages where they collaborated with community elders and local volunteers, harnessing social networks to deliver community-based health care (Binka et al., 1995). The project was designed to address debate about the relative demographic impact of deploying paid nurses versus primary health care volunteers to community posts. Although reduced mortality and fertility were both endpoints of interest, an important component of the design concerned research on feasible means of addressing extensive unmet need for family planning (Bawah, 2002). Owing to extensive evidence that this setting, and other rural areas of Africa, were profoundly gender stratified, (Avogo & Agadjanian, 2008; Blanc, 2001; Bankole & Ezech, 1999; Bawah, Akweongo, Simmons, & Phillips, 1999; Ezech, 1993), an exploratory pilot appraisal was conducted over the 1994-96 period to investigate ways in which the family planning component of the system of community based care could effectively engage men (Nazzar, Adongo,

Binka, Phillips, & Debpuur, 1995). Based on results of this micro-pilot, the Navrongo Project, implemented as a plausibility trial in 1996, employed a four-celled factorial design to test alternative strategies for delivering primary health care and family planning services at the community level (Bawah et al., 1999). From 2000 to 2003 the most successful strategy of the Project, which combined community-based nurses with a program of social engagement with traditional male networks, was scaled up in all 37 communities. Demographic monitoring over the ensuing decade has shown that the mortality effects of the scaled up approach were substantial and sustained, while the pace of reproductive change stalled in communities where fertility effects were originally demonstrated. Moreover, fertility effects of the original Project were never replicated in comparison areas once project interventions were subsequently scaled up (Phillips, Jackson, Bawah, & Williams, 2012).

This paper reports findings from a qualitative appraisal that investigates the programmatic determinants of this failure to scale-up the fertility effect of the Navrongo project. By applying deductive content analysis methods to implementation research, we examine reactions to community-based primary health care strategies in the post-Project era, paying particular attention to ways in which the scaling up of gender strategies may have affected long term fertility. This analysis represents a response to mounting international concern about the role of research in guiding the scale-up of a successful project. Experience with scaling-up health systems innovations often force the host bureaucracy to confront the challenge of absorbing operations demonstrated in an experiment that are incompatible with the organizational culture of the institution at large (Damschroder et al., n.d.; Fixen et al., 2005). As a result, scaling up is often associated with innovation atrophy (Fajans, Simmons, & Ghiron, 2006; Ruth Simmons, Brown, & Díaz, 2002; Carroll et al., 2007; Irwin & Supplee, 2012). The present paper applies qualitative implementation science to the task of researching the long term fidelity of current ongoing health services to their grounding in the Navrongo Project.

The Navrongo Project

The Navrongo Project was a “plausibility trial,” consisting of four clusters of communities spanning a population of 143,000, grouped into sub-districts, each of which represented a candidate model for primary health care service delivery in Ghana.¹ Two arms of the trial were configured in response to policy debate about the relative feasibility and effectiveness of posting paid professional nurses to communities versus the merits of strategies grounded in volunteerism and community engagement –a system of activities termed the “zurugelu approach.”

Sixteen communities comprised the “community health officer” arm of the experiment, which encompassed primary health care and family planning services, as well as community engagement strategies. In these communities, nurses were posted to locally constructed health posts with basic equipment, and were trained to regularly visit households. Chiefs and elders convened community gatherings to seek volunteers to construct “community health compounds,” where community health officers were assigned to live and work. Health services were provided during household visits made at 90-day intervals, augmented with daily services available at the community health compound.

The *zurugelu* arm of the experiment mobilized the cultural resources of the chieftaincy, social networks, village gatherings, and volunteerism. Through this arm, a designated community liaison arranged quarterly community gatherings, recruited and managed a cadre of male volunteers, and conducted outreach to community networks to integrate project management into the traditional system of social organization and communication. Developed in the course of the pilot study, a prominent feature of the *zurugelu* strategy was a gender component designed to build male involvement in support of women’s reproductive preferences. Community activities were designed to create male leadership and participation in reproductive health services, and to expand women’s participation in community activities that had traditionally been the purview of men. This social-action agenda sought to enhance the autonomy of women in seeking reproductive and child health care, thereby reducing the social costs of a woman’s decision to practice family planning.

Because the two experimental arms could be assigned independently, jointly, or not at all, a four-celled plausibility trial was implemented: one sub-district tested the impact of the *zurugelu* approach (cell 1); another tested the effect of community nurses (cell 2); a third sub-district tested the combined effect of the two interventions (cell 3); and a fourth was a comparison area comprised of communities unexposed to either intervention, but where the status quo of facility-based care was retained (cell 4).

Initial success of the Navrongo Project. From 1997 to 2003, the Project exhibited a pronounced impact on fertility in the combined intervention (cell 3) alone, with a total fertility rate of one birth fewer than that of the comparison area (Phillips, Bawah, & Binka, 2006). The absence of equivalent success in cells 1 or 2, with only nurses or volunteers, respectively, however, suggested that implementing both components of the combined approach were essential to this reproductive health success. Community-based nurses provided essential services while male volunteers created the demand for service uptake; neither nurses nor volunteers alone were sufficient. These findings demonstrated that achieving an impact on fertility requires accessible services with a well-developed mechanism for offsetting the social costs of fertility regulation (Bawah, Akweongo, Simmons, & Phillips, 1999; Bawah, 2002).

CHPS Scale-Up

This critical insight on the combined approach's fertility success was complicated by the fact that combined services were not essential to the reduction of childhood mortality. Wherever nurses were based, in cell 1 and 3 areas, childhood mortality declined equivalently, indicating that community mobilization and male volunteerism were not essential to this success (Binka et al., 2007). For this reason, international attention and Ghana Health Service (GHS) policy has directed particular attention to scaling up the nursing service components of the Navrongo Project. Substantial resources have been directed to expanding the recruitment, training, and deployment of these nurses. Although policies have emphasized the importance of community-engagement, implementation has typically focused on the resource requirements of constructing village clinics and posting nurses to static facilities. Volunteer services have been emphasized, but strategies have varied according to the priorities of various externally financed initiatives, such as the UNICEF/USAID supported "High Impact Rapid Deliver" (HIRD) strategy.

Thus, while nurse training standards and deployment strategies have been sustained since the launching of the Ministry of Health's scaled-up version of the Project in 2000, named Community-based Health Planning and Services Initiative (CHPS), volunteer strategies have varied with time. Official policy guidelines emphasized the importance of community-based nursing services and the need for volunteer support of primary health care operations (Awoonor-Williams et al., 2004; Nyongator, Akosa, Awoonor-Williams, Phillips, & Jones, 2008; Nyongator, Awoonor-Williams, Phillips, Jones, & Miller, 2005). Where concerns have been directed to performance of the CHPS model, they have tended to focus on the slow pace of scaling up the nursing component of the project rather than its combined strategies for family planning services (Williams, Vaughan-Smith, & Phillips, 2010). Although the contribution of CHPS expansion to demographic trends in Ghana is unknown, survey research results have shown that childhood mortality decline has accelerated since 2000, indicating that CHPS expansion may have contributed to child health and survival (Nakamura, Ikeda, Stickley, Mori, & Shibuya, 2011). However, since the pace of reproductive change has stalled in Ghana (Bongaarts, 2006; Shapiro & Gebreselassie, 2009) and reproductive change has not occurred at all in the Upper East Region where the coverage of CHPS expansion is most pronounced (Awoonor-Williams et al., 2013), there is no evidence that the scale-up of CHPS has been associated with fertility change.

Specifically in the Navrongo area, demographic monitoring indicates that fertility trends in cell 1 localities where nurses were introduced during scale-up converged with the fertility trends observed in the "combined approach" (cell 3) communities. However, when volunteers were added to cell 2 areas, and when both interventions were implemented in cell 4 comparison areas, there was no corresponding effect (Phillips, Jackson, Bawah, MacLeod, et al., 2012). This suggests that the characteristics of the volunteer

strategy that were essential to the original cell 3 success may have been missing in the volunteer strategy of the post-experimental era.

Study Objectives

The present study revisited the original Navrongo Project villages in order to identify the social and behavioral changes that have and have not occurred as CHPS services were scaled up over the past 15 years. By gathering in-depth information about the manner in which community-based health care services have been implemented in the post-project period – and with a particular eye towards training, supervision, and program management – the study seeks to understand how the original focus on family planning has changed. Lessons learned from this investigation will be used to reposition family planning in a new health systems initiative of the Ghana Health Service (GHS).

Methods

To investigate the underlying determinants of the apparent failure of family planning services to scale up, we have pursued a program of qualitative implementation research which we term “Qualitative Systems Appraisal” (QSA).² A research team investigated the views of community stakeholders, frontline workers, and program managers regarding the system as it currently functions in the original Navrongo Project communities. A key objective of the study was to assess the current status of the social engagement strategy for male acceptance of family planning. By visiting the villages in which the Project was originally conducted, we sought to learn about the original provision of family planning services in these areas and understand how these strategies may have changed during scale up. Two types of interviews were pursued; in-depth interviews (IDI) and focus group discussions (FGD).

IDI. A total of 68 IDIs were conducted with key health leaders, male community leaders, community health workers, and male community health volunteers. The sample of participants was stratified to include personnel from the Navrongo Project era as well as personnel deployed during the scale up of CHPS services, and questions varied depending on the time period being discussed. All IDIs focused on implementation issues, including the extent to which family planning is on the agenda of current program operations. Open ended discussions at the start of the interviews were designed to determine which topics were mentioned spontaneously, and end-of-interview probing sought specifically to determine the extent to which family planning is a programmatic focus.

FGD. The research team conducted 16 FGDs. These were stratified by gender and then further stratified to target groups of older community members who were exposed to the Project over the 1996-

2001 period, and younger groups who were not exposed to the Project but were instead familiar with current scaled-up CHPS services. Initial questions focused on primary health care and were designed to determine what, if any, reference to family planning arose spontaneously. Interviews then turned to direct discussion of the current provision of family planning, and perceptions of how these services, and of how social and/or reproductive change in recent years may have affected family planning demand or service supply.

Data collection was conducted by a team of four researchers between July and September, 2012, in the Kassena Nankana East and West Districts of Ghana's Upper East Region. Semi-structured guides were administered in a manner that allowed respondents to engage in in-depth exploration of arising themes and questions varied slightly depending on the time period being discussed. Guides were pre-tested and all IDIs and FGDs were audio-recorded and transcribed.⁴ As all IDIs with traditional male leaders and FGDs with community members were conducted in one of two local languages, they were subsequently transcribed into English; all other IDIs were conducted in English.

Transcripts were reviewed and key themes were identified using deductive content analysis methodology (Elo & Kyngäs, 2008). A codebook was organized by programmatic themes that emerged. Transcripts were coded using QSR NVivo 9 qualitative analysis software by two researchers. At the outset several transcripts were double-coded to ensure inter-coder reliability, and data were reviewed systematically and independently to identify the predominant themes.

Results

Findings attest to the challenges of sustaining a programmatic focus on social mobilization when scale-up has relied upon a medicalized system of care. From the onset of the Navrongo Project, its emphasis on social engagement was combined with the provision of integrated doorstep services for child health and family planning. In this investigation, both former and current health management personnel expressed a consensus that the original Navrongo focus on doorstep outreach has waned. CHPS' services are now centered around services provided in community health compounds, without a strong emphasis on scheduling methodical daily outreach to households. As one CHO of the Navrongo noted:

⁴ The study was approved in June 2012 by the Institutional Review Board for the Protection of Human Subjects at Columbia-Presbyterian Medical Center in New York, as well as that of the Navrongo Health Research Centre in Ghana. All study participants were informed of the study purpose and provided informed consent prior to the interview. Although participants were not monetarily compensated for their involvement, they were provided with refreshments as a token of thanks.

My concern is with the [current nurses], they don't go round because they now do it like a static clinic. We used to have only two days in a week for static clinic and even with that, you had to go to the field before coming to have the static clinic. It is not the same with the current CHOs because you would see them attending to clients at the compound instead of them going round.

– Original nurse of the Navrongo Project

An original investigator of the Navrongo project explained that the lack of community outreach in current CHPS services has arisen due to changing attitudes of nurses as well as resource constraints:

We are not emphasizing doorstep services anymore. [Nurses] are posted to a [community health post], once they are there they think okay they are working there. Sometimes they don't have a motorbike -- the motorbike is broken down for several days, weeks, and it's not fixed, so then they don't go on any compound visits they just sit in the compound.

– Navrongo Project investigator

Community health compounds have traditionally been the realm of women for maternal care and child wellness visits for their children. Without regular and frequent community outreach via home visitation, current CHPS' services neglect men's traditional social arenas and miss key opportunities for promoting CHPS services to men, including the promotion and de-stigmatization of family planning among male networks.

This retreat from strategies that embraced active doorstep outreach was accompanied by a corresponding atrophy of Navrongo strategies that had fostered community engagement through the *zurugelu* approach. It appears that the Navrongo strategy of engaging male networks for acceptance of family planning appears has been abandoned entirely, as there was no mention from any respondents of a specific gender approach targeting men for family planning acceptance in current CHPS programming. Other community engagement activities that promoted male involvement in community-based health services during the Navrongo Project have also diminished substantially. During the Project, community gatherings that traditionally had been the realm of male community leaders, called “durbars”, were held regularly with all community members to discuss and promote health services including family planning. Many respondents commented on the reduction in the frequency of durbars in the current CHPS program. As one community leader noted:

We used to do durbars some time ago but now something like that has not been organized for a long time.

- Community elder

Both former and current nurses described a waning impetus for organizing durbars among community and district health leadership in the current system, with the responsibility for arranging durbars now falling entirely on frontline works. As an original nurse of the Navrongo Project described:

Durbars are not organized frequently compared to the past. Now all the responsibilities are poured on to the [nurses] and midwives. [. . .] I can't remember the last time a durbar was organized in this community.

– Original nurse of the Navrongo Project

Health workers and managers also noted that community volunteerism has decreased when compared to the Navrongo Project era. Current community health volunteers are engaged in child health promotion and to some extent maternal health promotion, but are not engaged in outreach for family planning acceptance. One current volunteer described that he had not been engaged in family planning service delivery by Ghana Health Service personnel:

They have never involved we the volunteers in family planning activities and so I cannot say anything concerning that.

– Current community health volunteer

In addition to diminished community engagement activities to promote family planning, respondents said that current CHPS services face human resource and financial constraints that reduce the ability of nurses and volunteers to promote family planning in their communities. One key staff of the Navrongo Project remarked:

During the [Navrongo Project] the resources were more, that's the way I see it.

– Key staff of the Navrongo Project

In contrast with the Project period, when each nurse was assigned a motorbike, a current nurse described transportation resources currently available for her CHPS zone:

Here we have two motorbikes and five nurses so considering the number of staff against the number of motorbikes you would realize that we cannot do our [outreach] very well and also we will not get enough fuel to be going and coming.

– Current nurse

Volunteers also noted a reduction in resources when compared to the Navrongo Project era. During the Project, each volunteer was assigned a bicycle to move among the households in their village. Several current volunteers said that they are not equipped with bicycles, as the following mentions:

Sometimes there may be some work that we walk to because we don't have bicycles and the houses are far apart and when you go and you don't meet the particular person that you want, you have to go back. And because the place is far when you are going back it is difficult because of the distance. So bicycles or any means available we can use it to work to improve the work.

– Current community health volunteer

Concurrent with the reduction in material resources for CHPS, there has been an expansion in the package of medical services provided by CHOs, which appears to have diluted the attention paid by health personnel to the promotion of family planning. While family planning was a prominent focus of the Navrongo Project, respondents describe current CHPS services as focused on child health, treating of sick patients, and maternal health. As described by two current health leaders:

In those days the concentration was only on family planning services, but now it's a wider scope. They have to do immunization, antenatal services, postnatal services, defaulter tracing. But now other things like I've mentioned have been added, and they do treatment of minor ailments. So the scope has now widened a bit.

– Current health manager

During the research it was limited to immunization and family planning, but now after we've adopted it, we've adapted it and expanded it to include all primary healthcare services at the community level. So it is now more broad, it takes care of a lot of things. A lot of basic healthcare like clinical, preventive, promotive and even referrals. So it is the same because we still provide the family planning, we still give the immunizations, but we've added on board a lot of things.

– Current regional community health services coordinator

When asked about the current focus of CHPS services, community members similarly described nurses and community health volunteers as focused on ensuring the health of children and pregnant women and treating sick patients. As noted by two community members:

For me they are supposed to take care of sick people especially children. They are to take care of the health of our children.

–Female community member

Their main work is to look at the health of pregnant women and the sick.

– Male community member

Thus, as health workers discuss an expansion of responsibilities for CHPS nurses, allowing less time for family planning outreach, community members' perceptions reflect this reality as they see nurses primarily focused on the provision of medical care, especially to children, rather than on family planning promotion.

Another theme that arose from the investigation was how operations of the Navrongo Project were more robust, in various ways, than current CHPS operations, with respondents attributing this to the nature of a pilot program with outside research interest. One nurse active during the Navrongo Project commented that the Project staff frequently interacted with community members:

At that time, I don't know whether because it was a pilot study or because you could see a lot of doctors and workers coming from [the research centre] to organize the people, asking the people about their relationship with the CHO, her attitude towards them and all that.

– Original nurse of the Navrongo Project

Correspondingly, another original nurse noted greater community involvement in durbars when they were organized with the help of Navrongo Project staff:

Those days [the research team] helped in the organization of durbars and it used to be well patronized. We live with [community members] so when we ask them to do something they don't attach much attention and seriousness to it as compared to people coming from outside like the research people.

– Original nurse of the Navrongo Project

These types of interactions between program staff and community members may have facilitated aspects

of the social outreach agenda during the Project, in ways that the scaled up CHPS program is unable to continue due to fewer human resources. Similarly, a current health manager discussed the heightened supervision of the original nurses during the Navrongo Project:

You know the beginning is always -- the supervision was there actually. Because it was a pilot program, everybody had someone coming to supervise, and when they come they have to greet you in the communities actually doing your job. So supervision was very intense. And there was also motivation, so the staff too was active. It was a program so we were very interested too in the job.

– Current health manager

This statement appears to reflect a sentiment that the special attention paid to the Project by local and foreign researchers and intensive supervision may have motivated nurses to perform their work at a certain level, which may not have been the case after the Project was adopted as policy and this attention was no longer present.

Other respondents who were active during the Project period discussed ways in which the current health management's focus in CHPS implementation has shifted from the original model, particularly in the area of community engagement. An original investigator of the Navrongo Project, having served in a leadership role in the Upper East Region's health system since the Project, commented as follows:

From the [Navrongo] model, I see things being diluted along the way because these districts were called on to implement CHPS as a national policy. Some of the things districts don't think are important and they try to escape them. And when you do that then the whole CHPS concept doesn't work optimally. Like this community mobilization, getting the communities sensitized to support the program, some [district managers] don't think it's critical. Once they go once to a community they think that is all. But that constant interaction with the community is important to get them to support the program. And that is something I see to be missing in the current CHPS program nationwide.

– Navrongo Project investigator

Another investigator of the Navrongo Project, discussed the focus of current leadership on the construction of community health compounds, neglecting dialogue with community leadership prior to construction, which was a key step in the Project era:

All they think about is okay we want to build. They would have zoned the areas and demarcated where the areas should be, but once they've done all they're thinking is about where we will get money from to [build it]. And then once they do that the next thing the nurse has been posted and services are running. In the process sometimes you disconnect the communities from participating actively. You want them to take ownership of the processes. They should be actively involved such that they don't just think that, "Oh the government has to provide us a clinic and they've done that," but "this is our clinic, we have to make sure it runs, we have to let our women go there" and so on. So I think that in the process of implementing CHPS some of those finer issues have actually fallen through the cracks.

– Navrongo Project investigator

In summary, while there was no mention of the “zurugelu” approach for male outreach for family planning in participants’ responses, many respondents commented on diminished doorstep services, community engagement activities, and resources while the focus of CHPS has shifted to child and maternal care. These results suggest that family planning has been medicalized as CHPS has been scaled up, relegated to a technical component of the CHPS package of health services rather than a vibrant program of social engagement. Fidelity to the original Navrongo success story requires continued attention and resources devoted to social engagement with male networks, community mobilization and household outreach that have been lacking in the Ghana Health Service system.

Conclusion

Demand for family planning remains fragile in the Sahelian northern Ghana. Pervasive unmet need for birth spacing is overlaid by widespread ambivalence about childhood limitation, concerns about male support for contraception, and constrained social support for fertility regulation. Research demonstrating practical, low cost, and effective means of solving such problems was conducted at the time of the experiment. By applying lessons from initial participatory appraisal, these social constraints could be offset by the strategies of the “zurugelu” approach, which engaged traditional social structures and male networks. Subsequent social research on reactions to the project confirmed that sustaining these strategies was essential in reducing fertility during the Navrongo project of 1990s.

In the case of CHPS, the effective scale up of the Navrongo family planning approach required a health bureaucracy to absorb and scale-up a social engagement agenda that was somewhat alien to the institutional environment of the Ghana Health Service. In contrast, Navrongo’s child survival success was effectively scaled up, aided by a GHS clinical environment compatible with the model’s service

delivery system and also being less dependent on social engagement than was the case for family planning success. Thus, CHPS scale up inadvertently evolved as a medicalized sequel of the Navrongo Project that marginalized the effective male outreach strategies of its original design. As a consequence of this dilution of the original model, unmet need for family planning in the Upper East Region remains pervasive and pronounced, despite considerable progress with extending the coverage of community-based services throughout the region.

Results attest to the need for strategic reform of the national scaling up the Navrongo Project. To replicate and scale-up the Navrongo family planning success story, there is a critical need to refocus attention on the social engagement strategy of the original model. This will entail dedicating resources to the training, supervision, and support of staff to implement essential social engagement functions. Results also demonstrate the value of implementation research as an integral component of scaling up. The completion of a successful experimental project should not provide a rationale for ending research. Rather, scaling-up success should be accompanied by continuous monitoring of strategies that enabled success to arise.

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Notes:

¹ The term “plausibility trial” or quasi-experimental study refers to study designs that are randomized with areal units of observation that are too few to comply with power requirements of formal statistical inference (Habicht, Victora, & Vaughan, 1999) (Campbell & Stanley, 1966). Despite their statistical limitations, plausibility trials have crucial relevance to policy research since observational units conform to organizational units under investigation with results that are therefore relevant to decision-making. (Bryce et al., 2003; Victora, Habicht, & Bryce, 2004).

² QSA is adapted from the WHO Strategic Approach to evidence-based scale-up (Fajans et al., 2006; R Simmons et al., 1997). See also (Nyonator, Jones, Miller, Phillips, & Awoonor-Williams, 2005; Sory, Jones, Nyonator, & Phillips, 2003).