



RESEARCH ARTICLE

REVISED **Characteristics of successful integrated family planning and maternal and child health services: Findings from a mixed-method, descriptive evaluation [version 2; peer review: 2 approved, 1 approved with reservations]**

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Abstract

Background: Most postpartum women in low- and middle-income countries want to delay or avoid future pregnancies but are not using modern contraception. One promising strategy for increasing the use of postpartum family planning (PPFP) is integration with maternal, newborn and child health (MNCH) services. However, there is limited evidence on effective service integration strategies. We examine facilitators of and barriers to effective PPFP integration in MNCH services in Kenya and India.

Methods: We conducted a cross-sectional, mixed-method study in two counties in Kenya and two states in India. Data collection included surveying 215 MNCH clients and surveying or interviewing 82 health care providers and managers in 15 health facilities across the four sites. We analyzed data from each country separately. First, we analyzed quantitative data to assess the extent to which PPFP was integrated within MNCH services at each facility. Then we analyzed qualitative data and synthesized findings from both data sources to identify characteristics of well and poorly integrated facilities.

Results: PPFP integration success varied by service delivery area, health facility, and country. Issues influencing the extent of integration included availability of physical space for PPFP services, health workforce composition and capacity, family planning commodities availability, duration and nature of support provided.

Conclusions: Although integration level varied between health facilities, factors enabling and hindering PPFP integration were similar in India and Kenya. Better measures are needed to verify whether services are integrated as prescribed by national policies.

Open Peer Review

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Any reports and responses or comments on the article can be found at the end of the article.

Keywords

family planning, postpartum, health services, integration, maternal and child health

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REVISED Amendments from Version 1

We have added detail to the analysis of levels of integration, identified the quotes as coming from respondents of well-integrated or poorly integrated facilities, pulled out the content on client experiences in a separate section, and accepted reviewer suggestions in many instances.

Any further responses from the reviewers can be found at the end of the article

Introduction

In low- and middle-income countries, nearly one-fifth of birth intervals are less than 24 months, increasing health risks for both mothers and children¹⁻³. A large proportion of these births likely results from unintended pregnancies among women in the first two years postpartum⁴. Worldwide, most women want to avoid or delay another pregnancy for a couple of years after having a baby, but many are not using contraception⁴.

The promotion of postpartum family planning (PPFP) is a strategy for addressing unmet needs for contraception by helping women to start a chosen contraceptive method soon after birth and either continuing with this method or choosing another to use for at least two years. Increasingly, the integration of PPFP from pregnancy to the extended postpartum period (of two years following childbirth) is seen as a promising strategy for increasing the availability and utilization of PPFP services⁵⁻⁷. Integration, in this context, simply means the deliberate joining together of “inputs, organization and delivery of particular functions” to increase efficiency and access to health services⁸. Stakeholders and scholars agree that more research is needed on how to effectively integrate PPFP in low- and middle-income countries⁹. A Cochrane review of primary health service integration found that most studies with specific reference to family planning involved efforts to add family planning to HIV services⁸. This review found limited evidence that adding family planning to other services leads to greater contraceptive use, and another recent review argued for more evaluation research¹⁰. A third systematic review concluded that there was insufficient evidence, particularly about models for implementing PPFP programs¹¹. Although there is not conclusive evidence on the efficiency of family planning integration, evidence is mounting on the benefits of using every contact with pregnant and postpartum women to offer FP counseling and services¹². We also note that evaluations of integration focus on utilization and coverage^{11,12}, not comprehensive assessments of quality; however client and provider perceptions of integration of services may well identify factors also associated with quality of care, such as waiting time or privacy.

Definitional issues cloud the integration literature, with some researchers focused on integration of services at the point of care and others focused on integration of national programs to channel resources and technical support for service delivery. When national programs are integrated (or ‘horizontal’ integration), the health system supports integrated services with planning, monitoring, supervision, and at times integrated supply chains, among other provisions¹³. There is no evidence (yet) if service integration at scale requires program integration. Integrated services are assumed to be more efficient, in particular

from the client’s perspective, but also for the health system¹⁴. However, analysis of costs show wide variations in service integration between smaller facilities versus larger ones¹⁴. From the provider’s perspective, there are concerns of added workload, which are somewhat balanced with increased job satisfaction¹⁵.

Capitalizing on programmatic experience from PPFP programs in over 20 countries, we designed a study to assess the integration of PPFP with maternal, newborn, and child health (MNCH) services used by pregnant and postpartum women. Understanding factors affecting success or failure of integrated service delivery in different settings, i.e. increased adoption of multiple services with no decrease in quality, will assist health program managers to plan PPFP programs and focus their service integration efforts where they are most needed.

Methods

This paper presents findings from one component of a descriptive evaluation of PPFP service integration conducted in India (May–June 2014) and Kenya (June–July 2014). This broader cross-sectional, mixed-methods study¹⁶ examined how PPFP services are provided in order to identify factors enabling and limiting integration of PPFP with MNCH services in different settings.

Study setting

We selected India and Kenya as study sites because of their long-running PPFP programs, which provided us a unique opportunity to evaluate provider and client experiences from different PPFP program models. The study was conducted in two of the 29 states in India (Jharkhand and Bihar), and two of the 47 counties in Kenya. (Embu and Siaya).

PPFP integration programs began in five states in India in 2010 and provided support for introducing PPFP counseling during antenatal care (ANC) and reorganizing intrapartum and immediate postpartum care to offer postpartum intrauterine device (PPIUD) services immediately after birth. This integration of services built upon the rise in institutional deliveries following the *Janani Suraksha Yojana* (JSY) incentive scheme established in 2005. Jharkhand was among the first five states to initiate PPFP services. Hospital providers received both a 3-day training on clinical services for PPIUD as well as a 2-day training in PPFP counseling. Hospitals also received tools and job aids to support counseling, services and data management, and program staff offered supportive supervisions visits jointly with health authorities. Programs replicated the same approach as in Jharkhand in Bihar, India, starting in 2012, but added community outreach and messaging on birth spacing and PPFP during home visits through a 1-day training of Accredited Social Health Activists (ASHAs) and auxiliary nurse midwives on family planning methods and key PPFP messages. Subsequent to experiences in the first states, PPFP continued to expand across India. Furthermore, the government created a dedicated PPFP counselor position and opened an initial 1,300 posts. The 2013 reproductive, maternal, newborn and child and adolescent health (RMNCH+A) strategy incorporated PPFP to make services available across India, but renamed the counselors as RMNCH+A counselors.

In Kenya, PPFp programs began on a small scale in Embu from 2006 to 2010 as part of a pilot study, and then through a Ministry of Health sanctioned training on integrated maternal and newborn and family planning training. This training consisted of an orientation on PPFp for providers in facilities with a high volume of deliveries, followed by a 5-day clinical training in PPIUD and infection prevention for nurse-midwives. Community health workers also received a 2-day orientation on PPFp. Program staff worked with county officials to offer supportive supervision and to identify PPFp “champions” to support postnatal care and PPFp. Meanwhile at national level, the 2009–2015 *National Reproductive Health Strategy* included the integration of family planning into other reproductive health services as a key approach for improving access to comprehensive reproductive health services. The *National Family Planning Guidelines for Service Providers 2010* specifies the postpartum timing for initiating various contraceptive methods. In 2012, a program in Siaya, Kenya, used a multidisciplinary approach to demonstrate integration of family planning and maternal, infant, young child nutrition (FP/MIYCN) into antenatal, intrapartum, postnatal, and early childhood care services at facility- and community-levels. A baseline assessment informed this demonstration project and the development of materials, followed by capacity building of facility providers, community health volunteers on how to counsel on family planning and nutrition, integrate FP/MIYCN in all service delivery areas (maternity, maternal and child health/family planning, outpatient department) and manage program data. Bondo subcounty- (formally referred to as a district) was the only subcounty- out of six in Siaya where PPFp and nutrition services had been integrated thus through the time of the study. Unlike the other three locations, the Bondo facilities did not offer PPIUD as an option immediately after birth. At the sub-county hospital, FP/MIYCN training took place onsite for three days along with a one-day whole-site orientation, while health center providers underwent five days of training with clinical practice.

Sampling and data collection

In consultation with local health authorities, we purposively selected 15 health facilities in the two countries: six public health facilities from Bondo subcounty in Kenya and three facilities each from Embu county in Kenya, and Jharkhand and Bihar states in India. In India, the facilities were chosen based on health officials’ assessment of high performance, given the study objective to learn about what works to integrate PPFp. In Embu, Kenya, the health facilities were selected based on both performance and ease of access. There were six public facilities included in Bondo to capture all facility types participating in the nutrition and PPFp integration program. We published a separate manuscript on the family planning and nutrition integration experience from Bondo subcounty¹⁷. Data collection methods in this study included a client flow analysis (Dataset 1, published elsewhere^{18,19}); surveys of MNCH clients (Dataset 2) and providers (Dataset 3), and in-depth interviews with local authorities, facility management and health care providers. A convenience sampling approach was used for provider surveys and interviews. The number of participants at each facility was determined by the number of PPFp providers expected to be on duty, not a sample size/power calculation or content saturation.

The study teams obtained letters of support from state- or county-level officials, alerted facilities ahead of arrival, then met with the person in charge for briefing and identification of providers available at the facility. Providers on duty on the day of interviews were approached for interviews or surveys. A study information sheet was posted at each facility and provided to in-charge and anyone else upon request.

MNCH service provider and client surveys were conducted at all 15 health facilities. At each facility, the number of providers surveyed using the structured questionnaire varied between one and four depending on the number of clinical staff at a facility and types of services provided. We collected data on the proportion of consultations that include PPFp counseling as well as their perceptions on PPFp services they provided.

With regard to clients, we surveyed a sample of pregnant women and mothers of children under age 2 years attending maternal or child health services to determine whether they received PPFp counseling during their visit on the day of the survey. For the client survey, the number of respondents sampled was designed to provide a study power of 80% to estimate $\pm 10\%$ with 95% confidence, in the estimation of the proportion of clients receiving integrated PPFp services. Clients responded to questions about wait time before consultation with a service provider, privacy during consultations (audio and visual), comfort discussing private/sensitive health matters, perceptions of service providers’ behavior towards them, and the availability of medications and FP commodities. Surveys were conducted using tablets loaded with CommCare software (CommCare v.2.11.0, Dimagi Inc.); it took 1–3 days to complete the surveys at each health facility. In India, service provider and client surveys were conducted in either Hindi or English depending on a respondent’s preference. In Kenya, all service provider surveys were conducted in English whereas client surveys were conducted in English, Swahili, or Luo, depending on the respondent’s preference. Surveys are available on [Open Science Framework](#)²⁰.

Client flow analysis was conducted at two facilities in each Indian state and in three facilities in each county in Kenya; five facilities with low client loads were excluded. Client flow tools were modified from a tool used previously to assess integration of HIV and sexual and reproductive health services²¹. On days of data collection, research assistants approached all women aged 18 years or older who were at the health facility seeking MNCH services (ANC, postnatal, well-, or sick-child care), screened those who were willing to participate and consented those who met study eligibility criteria. Those who were pregnant and/or had a child under 2 years old and consented to participate were asked to carry a client-flow form which was completed by service providers at various service delivery points during the visit. Women in active labor were excluded since we could not expect them to keep track of providers caring for them and the form during childbirth. The client-flow form allowed up to five healthcare workers to check off services provided on a standard list of possible services and note any referral recommendations. The client-flow forms were collected at the point where each client exited the health facility.

Semi-structured, key informant interviews were conducted with local health authorities (district or sub-county officials), facility management and service providers to understand perceived benefits of PFP integration, challenges in implementing integrated services, and the institutionalization of integrated services in the health system. In India, experienced qualitative interviewers from the International Institute of Health Management Research (IIHMR) conducted interviews. In Kenya, two independent consultants were hired and trained to conduct interviews. Key informants were selected on the basis of their involvement in supervising MNCH and PFP services in the selected facilities. Each service provider was interviewed only once either as a facility health in-charge or about the PFP services they provided. Providers were asked which service delivery unit they worked in (ANC, labor and delivery, post-natal care and/or child health). They were also asked to pick one of those units which they spend more time in and to answer subsequent questions about their work in that unit. At each site,

qualitative researchers conducted interviews in a single day using structured interview guides designed specifically for each type of respondent: key informant, in-charge, or provider. Key informants and in-charges had to have a role in overseeing MNCH services in the facility including integration of PFP. Service provider interviews were conducted in either Hindi or English in India, and solely in English in Kenya. Interviews lasted between 30 and 60 minutes and were conducted in private. While the study team discussed the concept of saturation with data collectors, they completed the number of interviews assigned, with no overlap between quantitative survey and qualitative interview respondents. All interviews were recorded, transcribed, and, if necessary, translated to English prior to analysis.

A total of 215 MNCH clients and 39 health care providers were surveyed, and 10 key informants and 33 facility informants interviewed, across the four study sites (Table 1).

Table 1. Description of sample population by source location and data collection approach.

Country	State	Site	Type of health facility	Interviews			Surveys		Client flow	Subtotal by site
				Key informants	Facility in-charges	Service providers	Service providers	Clients	Client flow	
India	Jharkhand	1	Hospital	1	2	4	4	20	290	623
		2	Hospital	1	2	4	4	15	252	
		3	Hospital	1	---	---	4	19	---	
	Bihar	1	Hospital	1	---	---	4	19	---	819
		2	Hospital	---	2	---	4	16	435	
		3	Hospital	1	1	---	4	15	317	
Kenya	Embu	1	Hospital	1	2	1	2	30	342	538
		2	Health Center	---	1	1	2	5	111	
		3	Health Center	---	1	1	2	5	31	
	Bondo	1	Hospital	4	2	---	5	36	228	475
		2	Health Center	---	1	1	1	7	66	
		3	Health Center	---	1	1	1	6	---	
		4	Health Center	---	---	1*	1	7	86	
		5	Health Center	---	---	1	1	9	---	
		6	Health Center	---	2*	1*	---	6	---	
Subtotal by tool				10	17	16	39	215	2,158	2,455

* Interviews excluded from analysis after facilities sorted by level of integration (see Table 2)

Data management and analysis

Quantitative data analysis. Research assistants entered quantitative data from client and provider surveys into REDCap, version v6.0.1., a web-based software for data capture and management. Descriptive analysis was conducted using SPSS Statistics (version 22) and Stata (version 12). The investigators carried out frequency distributions and cross-tabulations and reported the outputs in percentages. No statistical testing was done.

FP integration and qualitative data analysis. We analyzed qualitative data using a grounded theory approach. Interview scripts were read iteratively and open/conceptual codes generated. We conducted the FP integration analysis in three phases. The first phase comprised of four steps, as follows: Step 1: quantitative data from client surveys, health worker surveys, and client-flow analysis by facility were collated using Microsoft Excel. We excluded two facilities from Kenya where we did not collect client flow data because they had fewer than five client respondents per service area. Step 2: three research team members separately analyzed the collated client and provider survey data to generate independent assessments of the level of PFP integration within maternal and child health services, to develop an approach similar to previous studies^{22,23}. However, wide variation in levels of integration across service areas at many facilities, made it difficult to come to agreement about the overall level of integration in each facility. To address disagreements between the independent assessment of level of integration, we further disaggregated data by service area within each facility (ANC, Labor and Delivery, PNC, Child Health) and jointly analyzed the level of PFP integration within each service area of each facility. In only two facilities were women having given birth in that visit interviewed. For each facility, analysis included the number of clients interviewed at the unit they initially sought care from (ANC, PNC or child health), and the percentage that indicated PFP was discussed. Step 3: the number of providers surveyed, and their responses to the question as to how many among the last 10 clients seen in their ‘primary’ unit to whom they provided PFP counseling or services (range 0–10). Step 4: client flow data were considered, specifically the number of clients who indicated that the purpose of the visit was ANC, labor and delivery, PNC or immunization/child health, as well as the number where the provider ticked having offered FP counseling or provision of a method. **Box 1** provides further details about the specific survey used for this analysis and explains how the three researchers compiled the data for analysis.

Box 1. Survey questions and data compilation for analysis of facility level of integration

Clients

Analysis of the client data explored the primary reason for the visit:

“I’d like to ask you a few questions about your visit to this facility today. What was the primary reason for your visit?” Response options included: 1. Antenatal care, 2. Intrapartum/Labor room, 3. Postnatal/ Postpartum, 4. Child welfare/ Pediatrics, 5. Family planning, 6. Other, 98. Don’t know, 99. No response

Later in the questionnaire, clients were asked: “Now I’d like to talk to you about the main reason for your visit today. During your visit to (*automatically populated with primary reason from question above*), did you discuss family planning?” with yes/no response options. This was the question used to assess level of integration, after disaggregation of clients according to whether they primarily visited for ANC, PNC, child health or labor and delivery.

Providers

Providers often work in multiple service areas in a facility, but were asked to select one area (from a list of ANC, Intrapartum/Labor room, Postnatal/Postpartum care, Child welfare/Pediatrics) that would become the subject of subsequent questions.

Later in the survey, providers were asked to quantify these responses with: “I would like to ask you a couple of questions about the last ten clients you have seen who were [pregnant / recently gave birth / or had given birth in the last two years]. Of those ten women, to how many did you either provide family planning counseling or a family planning method?”

Client flow

Data were stratified by the same primary reason for visit as above, and we captured a cell count of the number of clients visiting the facility for that reason during data collection as a denominator. Then the count of all clients whose form included a mention of FP counseling or FP services for each of the primary visit reasons strata were included in the numerator.

Data compilation and review

We created a spreadsheet with rows for each health facilities and columns for each type of service (ANC, PNC, child health, or labor and delivery). We first included a count of all data points for each (client, provider surveys, client flow data) as a denominator. Then, for each facility and type of service, we populated the number of clients reporting FP discussion, the number among last 10 clients seen that a provider reported offering FP counseling, and the clients whose forms included FP integration, as numerators. For providers, this resulted in a series of numbers from 0–10. The average of those numbers was used. For the other data, simple percentages were calculated.

Similar to previous studies^{22,23}, we used an ordinal scoring system to characterize the level of service integration, where 1 = low levels of integration (0–29% of MNCH client visits included PFP and survey data suggested little integration), 2 = moderate levels of integration (30–59% of visits included PFP and survey data suggested some integration), and 3 = high levels of integration (60–100% of visits included PFP and survey data suggested integration). In cases where there was not concordance between client flow and interview data, we relied on the client flow data as a more robust source. Independent rankings were then reviewed by all three researchers, although at that point the analysis relied on scores so the discussion focused more on whether there was sufficient data to determine an integration level. We set a minimum of 5 clients responses. There was insufficient data to consistently analyze level of PFP integration in PNC and child health services. We thus used the levels of integration in ANC to disaggregate health facilities with high and moderate levels of integration and grouped these as well integrated (shown in bold text in **Table 2**) and those with low-levels of integration we termed poorly integrated (shown in non-bold text in **Table 2**). The decision to group the middle tier of integration as “well integrated” was made on the

Table 2. Levels of FP integration into different services areas by facility and country. KO03 and KO06 excluded because insufficient data for all units. Text indicates where on broad range of level of integration (30–100%). If there are two notations, it indicates differences in client flow and client survey data, where at least 5 clients were surveyed about that service area. Bold text indicates well-integrated care, non-bold indicates poorly integrated care.

	Facility code	Antenatal care*	Labor & delivery	Postnatal care	Child health
India	IJ01	High	<i>No data</i>	High	Med-high
	IJ02	High	<i>No data</i>	High	Low
	IJ03	High	<i>No data</i>	<i>No data</i>	<i>Insufficient data</i>
	IB01	High	High	<i>No data</i>	<i>No data</i>
	IB02	Med	High	Low	Low
	IB03	Low	<i>No data</i>	<i>Insufficient data</i>	Low
Kenya	KE01	Low	<i>No data</i>	Low	Low
	KE02	Low	<i>No data</i>	<i>Insufficient data</i>	Low
	KE03	Low	<i>No data</i>	<i>No data</i>	Low
	KO01	Low	<i>No data</i>	Med	Low
	KO02	Med	<i>No data</i>	High	Med
	KO04	High	<i>No data</i>	High	Med-low
	KO05	<i>Insufficient data</i>	<i>No data</i>	<i>No data</i>	High

*Unlike the other service areas, integration of FP in antenatal care involves only FP information, counseling, possibly condoms and referrals. In other service areas, there should also be provision of a contraceptive method or intra-facility referral for provision.

assumption that this integration was unlikely to be by chance, but as a result of the program having some effect.

The second phase of analysis involved reviewing the semi-structured interview transcripts to identify factors enabling and limiting integration of PFP services at each facility and coded the text using a combination of thematic and free-coding in ATLAS.ti 7.5 (Scientific Software Development GmbH, Berlin, Germany). We reviewed qualitative findings across sites to identify characteristics common to well-integrated facilities separately from those that were poorly integrated.

In the third phase, we analyzed antenatal care client reports of privacy, interactions with staff, and waiting times to compare experiences at well-integrated and poorly integrated facilities by calculating percentages per site. We did not use the same approach for postnatal care or child health clients because of the small numbers of these respondents. To synthesize findings, we triangulated analyses described above, and examined trends in client, provider and management experiences at well-integrated and poorly integrated facilities in each study county, country, and overall.

Ethical considerations

The study was approved by the Johns Hopkins School of Public Health institution review board (No 5517), IHMR’s Institutional

Review Board in India, and the Kenya Medical Research Institute (KEMRI) Ethical Review Committee in Kenya. All participants provided oral informed consent, in accordance with approved research protocols, in order to avoid collecting personal identifiers for study participants.

Results

This study assessed the extent to which PFP is integrated in MNCH services and identified factors affecting service delivery in four distinct public sector settings, two in Kenya and two in India. Kenyan sites included 2 hospitals (1 in Embu, 1 in Bondo) and 7 health centers (2 in Embu, 5 in Bondo), while all six facilities selected in India were hospitals. All facilities had been providing PFP services for at least two years. Clients’ mean (SD) age was 24.4 (4.8) years, and the majority were married (100% in India; 80% in Bondo, and 85% in Embu). Clients’ level of education varied greatly; 60% of clients in India had completed secondary school or higher, compared to 80% of clients in Embu, Kenya and 20% of clients in Bondo, Kenya. Data from provider and client exit interviews are available on [Open Science Framework](#)²⁰.

Phase 1: Levels of service integration

Table 2 shows the level of PFP integration across groupings of MNCH services at each facility: 1) within maternal health services (ANC or labor/delivery) and 2) within child health

services (postnatal and well- or sick- child care services). Of the 13 facilities examined, only two (one from Kenya and one from India) were deemed to have a high level of integration in both groupings of MNCH services. There were six facilities (three from Kenya and three from India) that demonstrated a high level of service integration in either maternal health or child health services.

Because some determinants of integration may be a function of contextual factors, it is reasonable to expect facilities within the same national or subnational health system to be more similar to each other than to facilities in other areas. Our analysis revealed some similarities in levels of integration by facility type and service area, but scores were not consistent enough to draw strong conclusions about overall levels of integration achieved in all study sites. For example, in Jharkhand, India, PFPF appeared to be well integrated in maternal health services, but only one of three facilities had integrated PFPF in child health services. Health centers in Bondo, Kenya, integrated PFPF in child health services relatively well and performed better than the larger health facility that supports them (the sub-county hospital). Health facilities (a hospital and two health centers) in Embu, Kenya, showed the lowest degree of PFPF integration, while facilities in Bihar, India, showed the most variation between well- and poorly integrated services. Analysis was also limited by imbalance in the number of clients surveyed at each facility. It is worth noting that the number of clients surveyed at well-integrated facilities in India was about four times greater than at poorly integrated facilities.

Phase 2: Factors influencing success of service integration

Although levels of integration varied by service area and health facility, common themes were expressed in semi-structured interviews at both well-integrated and poorly integrated facilities. The themes were related to the importance of: (1) dedicating appropriate space for PFPF services, (2) considering health workforce composition, capacity, and motivation, and (3) ensuring consistent and affordable supply of a range of contraceptive methods. The influence of these factors on the level of PFPF integration were also evident in findings from provider and client surveys.

Appropriate space for PFPF services. Space provisions, including appropriate spaces for PPIUD insertion, were frequently mentioned as factors enabling PFPF integration. Highly integrated facilities were more likely to have dedicated spaces for PFPF counseling, which may or may not be separate rooms but provide privacy and space for client and counselor. However, our findings also show that a dedicated space for PFPF services alone is not sufficient for successful integration of services, and that not all dedicated spaces adequately meet provider needs:

“...the original plan did not have the integration aspect in mind. So the current existing room could be very small, like the one we are seated in... Now that [PFPF] is coming in, you may need an extra tray table for demonstration. You need a couch for examination and, if that space is not there, then you find it can be a challenge until the staff can generally say there is nothing we can do.” [Provider, Bondo, well-integrated]

In addition to not having dedicated spaces for PFPF services, poorly integrated facilities were characterized by chaotic environments:

“It is in different room therefore they face problem in inserting IUCD...[T]here is no special room [for inserting PPIUD]. And most importantly, I want our counseling room to be improved. I mean when a client visits my room after meeting the doctor, then she must feel at ease here and can talk to us in relaxed state of mind...And here, also, you hear continuous noise to the point where, if someone tries to speak, nobody can listen clearly. This place is just besides the outpatient department; therefore, there is a continuous rush over here.” [Counselor, Bihar poorly integrated]

Additional infrastructure issues, such as the physical layout of a facility, may pose challenges to effective integration of PFPF services. Data collection team members shared that one Bihar facility layout required clients to navigate complicated pathways to various units; this facility was independently ranked as being poorly integrated.

Health workforce composition, capacity, and motivation. Having a dedicated, well-trained PFPF counselor on staff was another factor identified as contributing to successful integration of services, as it increases the likelihood that clients will have their PFPF needs addressed in the same visit. As an in-charge of a well-integrated Jharkhand facility explained, *“We have the counselor here specifically for counseling, and she is able to give enough time.”* Well-integrated facilities were also more likely to have motivated staff willing and able to take on additional responsibilities. One Bihar provider at a well-integrated site noted, *“I have learned by hearing others. And I made my mind that [counseling] is my responsibility, and I have to do it.”*

Staffing and wait time are often linked in provider statements, but providers who are motivated to implement integrated services may portray the issue differently. For example, a service provider from a well-integrated facility noted:

“[Integration] is good because everybody can provide the services, and the client does not need to wait for one person or go to a particular service provision place for the [family planning], and that has really helped in reducing the [loss] of clients, as well as reducing the time they take when they come for those services.” [Provider, Bondo, well-integrated]

Poorly integrated facilities were often staffed by individuals either unable or unwilling to take on responsibilities beyond what they saw as their traditional job tasks. In many cases, the facilities ascribed this to shortages of health workers, especially in rural and remote areas. A nurse in a poorly integrated site in Bihar, India, explained that at the facility where she works, *“No one fulfills his/her responsibilities appropriately due to scarcity of staff.”* Additionally, service providers in Embu echoed this constraint, explaining that the integration of PFPF counseling has increased wait times for clients, generating complaints that negatively impact job satisfaction. As one Bondo In-charge explained, *“If the staffing improves, then I*

think the services will also improve more because sometimes someone may not have all time...like now you see [a family planning patient] is waiting for you...so sometimes one may be tempted to move faster than it should be and that may compromise the service."

A related but distinct issue around staffing relates to provider training and preparation to offer integrated services. As a manager in a poorly integrated facility in Embu, Kenya, explained, "What we needed most was training of which we still need up to now. As you have heard, we had one person trained on PPIUD who now left, so we would like more people to be trained." Providers also saw training on PFP counseling and service provision as a professional development opportunity and noted the integration of counseling in other service areas provided clients with opportunities for closer interaction with service providers, resulting in increased trust in the health system:

"So things are going well here in district hospital. However, one portion, in particular, is weak from our side and [that] is counseling. Counseling, which is related to ANC period. Counseling is weaker; therefore, we are not able to effectively facilitate the decision-making of mothers visiting our facilities. Mothers who visit the facilities for delivery needed time for mind-making, for taking decisions. So if our counseling is improved, then our overall performance would be improved."
[Key Informant, Jharkhand]

Although we only surveyed 17 ANC providers, responses found that higher proportions of providers in well-integrated facilities reported having knowledge and skills to provide both PFP counseling and services, compared to providers in poorly integrated facilities.

Consistent, affordable supply of contraceptive methods. Key informants and facility staff in Kenya and India highlighted the importance of access to and affordability of contraceptive commodities. A Jharkhand facility in-charge in a well-integrated facility also mentioned the role of educational materials, recalling earlier times before a counsellor joined the staff: "We were not able to tell about the methods, and, also, we didn't have this kit so we were not sure whether [the mother] understood about the methods or not." Because the type of family planning supplies needed vary across service areas, it was challenging to assess differences in commodity availability within our relatively small sample of well- and poorly integrated facilities.

At some facilities, staff reported that increased demand for contraceptives generated by integrating services initially resulted in stock-outs, but, over time, they were able to establish systems to address this issue. Others reported occasional stock-outs or little information on availability of commodities. Facilities with mid to high levels of PFP integration tended to have a well-functioning supply chain management system while some poorly integrated facilities did not monitor their supply levels. As a government official with oversight responsibilities for a poorly integrated facility in Bihar explained, "Yes, there have been [stock-outs] sometimes. [...] I cannot tell you much about this, frankly speaking as many times our staff could not check these things."

In some facilities, commodities may be available, but repeated travel to the facility remained a barrier to the continuum of care. For example, a manager in a poorly integrated facility in Embu, Kenya noted "...depending on where she is coming from and her status she may not be able to afford all these journeys, so [PPIUD] saves time for everybody."

Context matters: Additional factors affecting the success of integration efforts. In addition to the issues discussed above, two context-specific themes were raised throughout semi-structured interviews in Jharkhand and Bihar, India, as major factors affecting the success of integration efforts: provider-client power dynamics and demand-side financing programs.

In both Bihar and Jharkhand, providers articulated that they think some challenges to PFP uptake are due to what they perceive as clients' religious beliefs and education levels. In Jharkhand, a head nurse described the clients as "backwards," "uncivilized," and "uneducated." In Bihar, providers counsel religious clients that not spacing and caring for kids is a sin against God. Providers in both Jharkhand and Bihar opined that Muslim women refuse PFP because of their cultural beliefs, specifically citing that if a woman is operated on, she will not be placed for burial after death. Additionally, providers highlighted that how they counsel a woman is often based on the number of children the woman already has rather than the woman's expressed preferences or needs. As one counselor in Bihar (well-integrated facility) explained, "We try to motivate those for sterilization who have two children." While these attitudes are independent from integration efforts, integration implies an increase in number of providers discussing family planning with clients and that these providers need additional guidance on the rights of family planning clients to make voluntary and autonomous decisions about contraception.

In addition, many key informants and facility staff in both states of India mentioned the effects of financial incentives, specifically the JSY conditional cash transfer program, on PFP uptake. Incentives are frequently used in India to assist in motivating clients as well as health workers. The role of incentives varied across Bihar and Jharkhand, but respondents in all sites agreed that they are very important. In Jharkhand, an in-charge of a well-integrated facility highlights how the incentives have shifted community norms and helped motivate other clients to come: "we keep on telling one thing, so people understand and after that they tell others also. Then they are also getting money [JSY], so people come." However, whether these incentives are in the best interest of the client is cloudy.

Semi-structured interviews conducted in Kenya did not yield as rich descriptions of factors affecting the success of service integration efforts as interviews conducted in India. However, one provider in Bondo expressed a sense of teamwork with the sub-county health management team:

"So all the commodities, the infrastructure, the equipment, the furniture and, of course, that consistent support supervision. Even as we make report, we forward [the report to] them and they are able to share with us. This...is the support in itself because, maybe during that preparation of that report,

there is a glaring error that [is noticed] and I missed it. So the sub-county record person during that editing time, just a phone call, they have done this [asked about data, and corrected an error]. [Provider, Bondo, well-integrated]

This teamwork approach was also expressed by providers resolving commodity issues or coordinating with mobile teams to offer female sterilization at their facility.

Phase 3: Client experiences

All ANC clients surveyed were asked about privacy concerns if PFP was discussed during their visit. A greater proportion of clients in Kenya than in India, reported acceptable levels of privacy (88.2% in Kenya versus 39.5% in India) and feeling comfortable discussing private/sensitive health concerns (84.7% in Kenya versus 45% in India). When comparing well-integrated and poorly integrated facilities in Kenya, the vast majority of clients at facilities in both categories reported that visual and auditory privacy were not a problem (92.7% at well-integrated facilities versus 87.3% at poorly integrated facilities). In India, by contrast, stark differences emerged between well- and poorly integrated facilities. At well-integrated facilities, the majority (69.7%) of clients reported privacy as a problem, compared with 20.0% at poorly integrated facilities, as shown in Table 3. In all sites, having

concerns about visual/auditory privacy was correlated with concerns about discussing private/sensitive health concerns.

In the qualitative analysis, some providers reported that long client wait time was a disadvantage of integrating PFP counseling with MNCH services. This concern was not highlighted as consistently by ANC clients in Kenya, where only 35.7% of clients in well-integrated facilities and 38.0% in poorly integrated facilities reported wait time as a problem. However, in India, the majority of ANC clients (66.7%) in highly integrated facilities reported wait time as a problem as compared with only 26.7% of ANC clients at poorly integrated facilities, as shown in Table 3. We note that all well-integrated facilities in Kenya were health centers, whereas all sampled India facilities were hospitals.

Discussion

Our findings suggest that programs to encourage integration take hold unevenly across facilities, and we have sought to better understand how to encourage greater effective integration of services. Despite very different contexts, the factors identified as contributors or barriers to successful integration of PFP in MNCH services were remarkably similar in both India and Kenya. Common themes identified across settings related to (1) dedicating appropriate space for PFP services,

Table 3. Antenatal care clients report on privacy, interactions with staff, and waiting time.

Characteristic		Kenya			India		
		Well integrated (n = 14)	Poorly integrated (n = 71)	Total (n = 85)	Well integrated (n = 66)	Poorly integrated (n = 15)	Total ^a (n = 81)
Visual & auditory privacy	Not a problem	13 (92.9%)	62 (87.3%)	75 (88.2%)	20 (30.3%)	12 (80.0%)	32 (39.5%)
	Minor/major problem	1 (7.1%)	9 (12.7%)	10 (11.8%)	46 (69.7%)	3 (20.0%)	49 (60.5%)
Comfort discussing private or sensitive health concerns	Not a problem	12 (85.7%)	60 (84.5%)	72 (84.7%)	25 (37.9%)	11 (73.3%)	36 (44.4%)
	Minor/major problem	2 (14.3%)	11 (15.5%)	13 (15.3%)	41 (62.1%)	4 (26.7%)	45 (55.6%)
# Waiting time	Not a problem	9 (64.3%)	44 (62.0%)	53 (62.4%)	22 (33.3%)	11 (73.3%)	33 (40.7%)
	Minor/major problem	5 (35.7%)	27 (38.0%)	32 (37.6%)	44 (66.7%)	4 (26.7%)	48 (59.3%)
Perception of how staff treat clients	Not a problem	13 (92.9%)	67 (94.4%)	80 (94.1%)	31 (47.0%)	12 (80.0%)	43 (53.1%)
	Minor/major problem	1 (7.1%)	4 (5.6%)	5 (5.9%)	35 (53.0%)	3 (20.0%)	38 (46.9%)

^a In total, 215 clients were interviewed as indicated in Table 1 and responded to a series of "statement" questions: minor problem; major problem, or no problem. These responses were cross-tabulated with the variable on the level of integration at ANC (poor vs. well). Based on earlier analysis and categorization of the integration, some health facilities ended up NOT having a level of ANC integration being assigned to them, due to "inadequacy of available information". Correspondingly, the responses of clients in these respective health facilities were "dropped" during cross-tabulation. In Kenya, 26 records were dropped, while in India, 23 records were dropped, for a total of 49 records.

(2) considering health workforce composition, capacity, and motivation, and (3) ensuring consistent and affordable supply of a range of contraceptive methods.

These findings are consistent with emerging evidence from other settings. Integration of health services is often assumed to be an efficient strategy for increasing access to care and a “diagonal approach to building primary healthcare” has been espoused²⁴. Technical experts generally agree that optimal delivery of PPFp requires: taking advantage of existing contact points; direct provision of PPFp counseling or services during maternal, newborn, and child health (MNCH) consultations; or facilitated referrals to a co-located family planning provider^{4,25}. Without interventions to coordinate the care provided, however, co-locating services in a facility has not been shown to increase the use of multiple services²⁶. For example, in Uttar Pradesh, India, only a minority of antenatal and postnatal care clients receive advice about PPFp or birth spacing; as a result, unmet need for family planning has not decreased^{27,28}. Further, a systematic review of integrated HIV and family planning services noted that facilitated referrals between co-located services were difficult to implement without a solid health system foundation, and weak fidelity to the designed service integration intervention may have led to lower than expected family planning uptake²⁹. Changing the organization of services for the purposes of integration requires one or more interventions, such as training, new tools, supervision, and performance improvement. At the same time, fully integrating PPFp services across the continuum of care may have trade-offs for resource allocation and attention to other aspects of service quality⁸.

Respondents from well-integrated Kenyan facilities cited provider competence and availability of FP commodities as facilitators, whereas poorly integrated facility respondents cited inadequate space, staff shortages, workload, and commodity stock-outs as barriers. While commodities are necessary for any service, integrated or not, shortages act as a disincentive to integrate services as that may exacerbate the problem of stockouts. Respondents from well-integrated facilities frequently complained about lack of space, yet they seemed to work around this challenge, indicating factors beyond space are critical for successful integration. Providers from well-integrated Indian facilities described having a room for the dedicated counselor, motivation to provide client-centered care, providers who believe in PPFp benefits, acceptance of workload, training for staff, continuous supply of FP commodities, and incentives for PPIUD insertions as favorable. Service providers in poorly integrated facilities in India said not all client costs were covered and reported low motivation (e.g., PPFp counseling was not their job), although underlying reasons for variances in provider motivation within the same system could not be ascertained in this study. Other researchers have noted that integration of physical and human resources (‘structural integration’) is insufficient to ensure that clients consistently receive integrated services (‘functional integration’)³⁰.

Within geographic locality, program support was generally similar, yet the level of integration of PPFp within maternal health

services or child health services varied. Of note, one Jharkhand facility has gone beyond initial program interventions to integrate PPFp strongly into child health services. Facilities in Bihar had the most variation in level of integration. In that state, qualitative results suggested that providers were much more motivated by incentives.

This findings of this study are in line with the findings of Mayhew *et al.*, that there is considerable heterogeneity in levels of integration across their study sites in Africa, including Kenya³⁰. The emphasis on incentives in Bihar could also imply that counseling is more systematic for women in labor and delivery and the immediate postpartum period, with potential missed opportunities in ANC. We cannot reliably report on the level of service integration or how consistently PPFp is integrated in a childbirth visit from our data. Nevertheless, quality PPFp should begin with ANC as women often need time to consult and consider their contraceptive method of choice³¹. The opportunity to do so was more evident in our sample of facilities in Jharkhand. The ethical issues associated with incentives have been noted in the literature³².

In Embu, Kenya, the level of service integration was unsurprisingly lower than in other sites, most likely due to the short duration of project support and the elapsed time between end of project and this assessment—about 5 years. Furthermore, attrition of trained providers affected service integration in those sites, particularly the smaller facilities. Sweeney and colleagues, in their study of HIV, sexual and reproductive health and postnatal care integration, reported on the slow pace of change to integrate health services³³. This implies that a short intervention period to effect change in service integration may not bring about lasting change as was seen in Embu. In comparison, integration was stronger in Bondo health centers, which have fewer staff who tend to provide a greater number of services, as compared to hospitals which have more staff who tend to work in distinct units providing a smaller number of services. Integration of services was also stronger in postnatal or child health services, as compared to ANC or labor and delivery services, which may reflect the ease of service integration when the program emphasizes integrating PPFp into infant and young child services.

Most of the poorly integrated facilities had staff who reported high workloads, lack of skills to insert PPIUDs, frequent stock-outs of family planning commodities, and client privacy challenges. On the other hand, providers in well-integrated facilities in India and Kenya reported greater commitment to high-quality services for clients. This contrasts with the study by Church *et al.*, which found that providers rarely saw personal benefits of integrated care HIV and reproductive health care, perceiving benefits mostly for clients³⁴. Clients seeking ANC services in well-integrated facilities in Kenya did not report concerns with wait time or privacy. In well-integrated facilities in India, however, these factors, along with lack of concern for client autonomy and method choices, were reported as minor or major problems. Our relatively small, descriptive client sample precludes drawing firm conclusions about client reports of privacy

concerns between well- and poorly-integrated facilities, but this merits further exploration. Other studies in India have found that providers negatively judge clients' education, family planning needs, and ability to understand contraceptive options, thereby imposing unnecessary barriers to acquiring family planning methods³⁵. This study suggests that integrating FP services within other services suffers the same provider bias issue. Nevertheless, provider reports of barriers to integration in this study are not conclusive given that time-motion studies show that health workers exaggerate time needed for a given health intervention³⁰.

When reviewed through the lens of poorly versus well-integrated services, analysis of client responses on different aspects of service quality (privacy, comfort, wait time, staff treatment of clients) provided interesting insights. For example, a higher proportion of clients in well-integrated facilities in India, compared to those in poorly integrated facilities, reported problems with various aspects of services, which may seem striking. However, clients from poorly integrated facilities were less likely to be exposed to PFP services, which are often considered to be a sensitive issue in our Indian study sites. Similarly, clients from well-integrated facilities were more likely to receive PFP services, which may have led to increased concerns of privacy and discomfort discussing sensitive issues. Greater frequency of concerns about a lack of privacy and comfort discussing PFP, as reported by clients in India compared with Kenya, may be due to perceived cultural sensitivity about family planning overall, which have been reported elsewhere³⁶.

In India, the finding that wait times were more likely to be perceived as a problem in well-integrated facilities is also not surprising given high client volumes in these facilities. This finding is also consistent with case studies of integration in sub-Saharan Africa³⁷. Of concern in the Indian sites is the disproportionate number of clients reporting mistreatment by staff as a problem in well-integrated facilities, compared with poorly integrated facilities. Furthermore, the influence of monetary incentives may induce certain providers to apply more pressure on women to adopt a contraceptive method, which would amount to coercion and against the principle of informed choice when providing family planning services.

As an exploratory study attempting to identify trends in health facility and service delivery characteristics across four distinctly different program settings, our analysis is not without limitations. Our analysis of levels of integration relies heavily on an assessment done through a client-flow and data collection activity that was not feasible to conduct with women attending facilities for childbirth so may not accurately represent levels of PFP integration across all MNCH services. In addition, the 1-week duration of observation may not accurately represent levels of integration over time. We acknowledge that systematic observation of provider-client interactions in a clinic setting over a longer time period would probably have generated more robust data. Second, the number of facilities sampled in each location was small and precluded generating insights about the type or size of facility that may be more amenable to integrating services. The purposive sampling also implies that

our results may not be generalizable. Third, as with all client and provider surveys conducted on-site at health facilities, there is a risk of courtesy bias. Fourth, our interview data focused heavily on ANC clients as opposed to immediate postpartum clients, as the study team felt it burdensome to ask women to participate in an hour-long interview immediately after giving birth. However, a substantial number of PNC clients were interviewed at the child health services, thus perspectives of postpartum women were included in our analysis and the use of a mixed method approach with data collection tools designed to explore many aspects of service provision allowed us to gather valuable insights in settings where there is limited evidence on effective strategies for service integration. We also recommend additional research on establishing measures of service integration that should be validated in randomly selected facilities.

Our findings highlight the complexities that must be considered in implementation and evaluation of health service integration. Policymakers contemplating increased integration should thus base their strategies on an understanding of the diversity in the health facilities they seek to affect. Policymakers also need new ways to measure whether integration of services is actually taking place as prescribed. Our findings showed that, even after program support to integrate services, actual levels of service integration varied greatly.

Conclusions

Through triangulation of data from clients, providers and a client flow tool, our study sought to innovatively measure and qualitatively understand the level of PFP integration with antenatal and child health services and factors that enabled or limited this integration at facilities that receive program support to integrate PFP into maternal and child services. The factors identified were common across Kenya and India. Common themes emerged from interviews with providers and facility in-charges at both well- and poorly integrated facilities: issues influencing integration included allocation of physical space for PFP service delivery, health workforce composition and capacity, and commodity availability, having staff to manage the combined services, client wait times, the organization of services to ensure that commodities are readily available, and as well as duration and nature of related program support. Service providers in well-integrated facilities are more likely to express motivation for client-centered, integrated care. Our analysis contributes to the limited literature on the integration of PFP with maternal and child health services. The results are not clear cut but show the complexity and nuances of effectively implementing and scaling up integrated services. Better measures are needed to verify whether services are integrated as prescribed by national policies.

Data availability

Underlying data

Dryad: Data from: Postpartum family planning integration with maternal, newborn, and child health services: a cross-sectional analysis of client flow patterns in India and Kenya. <https://doi.org/10.5061/dryad.11313>¹⁹. The base dataset for client flow data is available in SAV, DTA and CSV formats. A codebook is available in DOCX format. Data were generated in a previous study¹⁸.

Open Science Framework: PFPF Integration in India and Kenya. <https://doi.org/10.17605/OSF.IO/5TFA7²⁰>. The following underlying data files are available:

- Provider interviews (Tool 3b_FINAL.csv) with codebook (Tool 3b_CODEBOOK_SEED_2.csv).
- Client exit interviews (Tool 5a_FINAL.csv) with codebook (Tool 5a_CODEBOOK_SEED_2.csv).

In addition, we collected, transcribed and translated, where appropriate, in-depth interviews (qualitative data). The study team feels it would be impossible to completely de-identify qualitative interviews. Furthermore, since the protocol approved by 3 ethical review committees (United States, India and Kenya) did not allow for sharing of qualitative data, we are not able to provide this dataset. If researchers would like to use the qualitative data, to either replicate our analysis or for other purposes, they may contact the corresponding author. They will be asked to sign a data use agreement prior to receiving any transcripts. We may also request that they obtain permission from the corresponding in-country IRBs.

Extended data

Open Science Framework: PFPF Integration in India and Kenya. <https://doi.org/10.17605/OSF.IO/5TFA7²⁰>. The following extended data files are available:

- Key Informant Interview Guide – Tool 1 (PFPF_Integration_IRB5517_Tool1-KI_IntGde_English_v3_2014May06.docx)
- Facility In-Charge Interview Guide (bilingual) – Tool 2 (PFPF_Integration_IRB5517_Tool2-Fac_InChg_IntGde_Bilingual_India_v2_2014May06.docx)
- Facility-Based Provider Interview Guide – Tool 3a (PFPF_Integration_IRB5517_Tool3a-Fac_Prov_IntGde_Bilingual_India_v2_2014May06.docx)
- India: Facility-Based Provider Survey – Tool 3b (PFPF_Integration_IRB5517_Tool3b-Fac_Prov_Survey_India_v2_2014May02.docx)

- Kenya: Facility-Based Provider Survey – Tool 3b (PFPF_Integration_IRB5517_Tool3b-Fac_Prov_Survey_Kenya_v2_2014Jun05.docx)
- India: Client Survey – Tool 5a (PFPF_Integration_IRB5517_Tool5a-Client_Survey_India_v2_2014May21.docx)
- Kenya, Luo: Client Survey – Tool 5a (PFPF_Integration_IRB5517_Tool5a-Client_Survey_Kenya_v2_2014Jun05_Luo_TRACKED.doc)
- Kenya, Swahili: Client Survey – Tool 5a (PFPF_Integration_IRB5517_Tool5a-Client_Survey_Kenya_v2_2014Jun05_Swahili_TRACKED.docx)
- Kenya, English: Client Survey – Tool 5a (PFPF_Integration_IRB5517_Tool5a-Client_Survey_Kenya_v2_2014Jun05_TRACKED.docx)
- Integration Client Flow Form – Tool 5b (PFPF_Integration_IRB5517_Tool5b-Client_Flow_ENG_2014May03.pdf)

Data are available under the terms of the [Creative Commons Zero “No rights reserved” data waiver](#) (CC0 1.0 Public domain dedication).

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Marina A.S. Daniele 

King's College London, London, UK

No further comments to make.

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Reproductive health

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

Reviewer Report 28 January 2020

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Ilene S Speizer

Department of Maternal and Child Health, Gillings School of Global Public Health, "University of North Carolina at Chapel Hill, Chapel Hill, NC, USA

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Evaluation researcher focusing on family planning programs

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

Version 1

Reviewer Report 27 August 2019

<https://doi.org/10.5256/f1000research.18817.r51874>

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**Ilene S Speizer**

Department of Maternal and Child Health, Gillings School of Global Public Health, "University of North Carolina at Chapel Hill, Chapel Hill, NC, USA

This paper examines integration levels of MNCH and FP services in hospitals in two states in India and a hospital and health centers in two counties in Kenya. The strength of the paper is the use of multiple data sources (qualitative and quantitative) to inform the analysis on an important topic. A limitation of the paper is the small sample of facilities in each country which means it is not possible to determine if some facilities (e.g., hospitals or health centers) are more amenable to integration than others. Related to this is that the selection of facilities suggests a preference for higher performing (on integration) facilities and thus, even though not all the included facilities were highly integrated, the results cannot be generalized across other similar types of facilities. An additional limitation includes that it is not possible to distinguish whether the findings are indicative of higher/lower integration and/or higher/lower quality of services. Quality discussions are notably absent from the paper and might be worth including since integration is a component of higher quality services. Below I highlight a few other comments:

1. The authors mention the India government initiative to have dedicated PFP counselors in health facilities. The authors fail to note if the included India facilities have a dedicated counselor or not and if this is correlated with the level of integration observed in this study.
2. More detail is needed on the measurement of integration. The description of "as done in other studies" is vague and not informative enough for this paper.
3. Table 1 – the median age of participants is provided – is this for clients or for all study participants including providers and key informant interviews? I expect this is just for clients and thus this should be clarified.
4. Table 2 – you talk about "dark gray" but in the formatted version of the table, it is not clear what is "dark gray." Also, do you need a "facility overall" column that is inferred in the text?
5. For the quotes, it would be useful to know if the respondent is in a high, medium or low integrated facility. This is included with some but not all the quotes.

6. The text starts with “All MNCH clients” when it is discussing Table 3, however, Table 3 only includes ANC clients. Make sure this is clear in the text (and possibly explain why only the ANC clients are shown).
7. The consistent and affordable supply of FP and the provider bias sections are particularly relevant to the quality of care issue mentioned above. Quality could be raised in the introduction to help tie integration to quality and the issues in this section.
8. The explanation of the inconsistent results in India relate to client volume (which makes sense), however, this is the first time that client volume is mentioned in the paper. Given that all facilities in India are hospitals, I wondered how client volume plays into the results. Can client volume be discussed earlier. Also, are some of these hospitals private and others public and does that affect integration (and quality)? For Kenya, it explicitly says that public facilities were included but this detail was not found for India.

Is the work clearly and accurately presented and does it cite the current literature?

Yes

Is the study design appropriate and is the work technically sound?

Partly

Are sufficient details of methods and analysis provided to allow replication by others?

Yes

If applicable, is the statistical analysis and its interpretation appropriate?

Partly

Are all the source data underlying the results available to ensure full reproducibility?

Yes

Are the conclusions drawn adequately supported by the results?

Partly

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Evaluation researcher focusing on family planning programs

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.

Author Response 20 Dec 2019

Anne Pfitzer, Jhpiego, Washington, USA

Thank you for including an assessment of strengths and limitations in your review. We acknowledge the limitation of a small number of facilities in each country. Also, we selected facilities that received programmatic support, thus we can be very clear that finding on integration are not generalizable. In fact, we believe our findings suggest that programs to encourage

integration take hold unevenly across facilities, and we have sought to better understand how to encourage greater effective integration of services.

We respectfully dispute your assertion that integration is a component of higher quality services. We looked at traditional quality measures across levels of integration (and in fact there may be a tradeoff in quality with greater integration if not careful), but considered integration a distinct aspect of service delivery. That being said, we added a sentence to the introduction highlighting parallels between integration and quality.

We would have liked to respond more specifically to the suggestion about clarifying whether all study facilities had a counsellor. However, we did not collect this information. We can report that we had transcripts of qualitative interviews with counsellors in 4 out of the 6 Indian hospitals.

The comment about detail on measurement of integration is consistent with other reviewers. Our response is also the same.

We decided that it is not appropriate to include a note about the median age of clients in Table 1 and removed it.

The suggestion about detailing the respondents facilities' level of integration for the qualitative quotes echoes the 2nd reviewer. We have added this.

Thank you for the keen observations about inconsistencies. Specifically,

1. About the legend of Table 2 – the text was not amended when we changed the formatting of the table. This has been corrected.
2. Discrepancies between the text and Table 3. All MNCH clients were asked that question, but we only report on ANC clients because of small numbers of PNC and child health clients (indicated in methods section). We have revised.
3. We added a statement about client volume in the sample description of the methods section.
4. The lack of precision about public vs private settings. We have added a clarification that all facilities in this study were public in the sampling section of the methods.

Competing Interests: We do not have any competing interests as related to this peer review.

Reviewer Report 27 August 2019

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Marina A.S. Daniele

King's College London, London, UK

This study is a timely and important effort to expand on the evidence base for successful PPF integration with maternal and newborn health services. The attempt to evaluate programmatic experiences in a systematic way is commendable.

The researchers have a good knowledge of existing evidence and gaps and display this clearly in the introduction and discussion.

The methods section begins with an appropriate context setting section, describing integration programmes in the study sites. As done here, it is often useful for triangulation purposes to combine qualitative and quantitative methods. The client flow method used appears to be robust and cost-effective. The semi-structured interviews also appear to be sound in design and quality. As pointed out by the authors themselves in the discussion, observation of care would have provided important insights.

However, I have doubts concerning the quality of the data generated from the provider and client surveys. The numbers are fairly small, and there is a notable risk of courtesy bias. In this regard, I am particularly curious about the extent to which providers, especially, were aware that the researchers were assessing family planning integration, and whether they felt they could be completely honest about the extent to which they did or did not provide PPF services. It would be useful for the authors to comment on these issues in the discussion. The area I am most uncertain about is the ability of the data on privacy, waiting time and interactions with staff to support the kind of analysis presented. The numbers appear to be very small, so I am not sure that they support quantitative comparisons between facilities. Qualitative interviews with clients might have been a better way to explore their experience of care.

In addition, it is difficult to express a full opinion about the soundness of all the analysis done because of a somewhat confusing presentation of methods and results. I had to read the methods section several times in order to understand what was done, with what purpose, and in what order. Sentences describing the purpose of each phase, and step, should precede those describing which type of data was considered in turn.

The development of an integration score for facilities is an essential part of the analysis, but different (more or less collated or aggregated by service area) classifications of integration levels are described in the methods, presented in Table 2, and referred to in the results section. I also could not find a clear explanation about why, out of 15 facilities in the sample, integration scores are only presented for 13.

While containing interesting findings, the results section could be reorganised to be more clear, perhaps with more correspondence with the analysis phases as described in the methods, e.g. into three subject areas rather than two, the third being client experience. As it is, the second section of the results (Factors influencing success) appears quite long and difficult to navigate. However, I am not certain that the parts on client experience should be retained, given the reservations about data quality that I expressed above.

Although, it could benefit from some streamlining and re-organisation, the Discussion reflects the strengths and weaknesses of the study and discusses the findings in the light of relevant contextual factors which aid the interpretation. The piece could be improved by giving more prominence to the paragraphs discussing what the implications for policymakers and future researchers are.

Is the work clearly and accurately presented and does it cite the current literature?

Partly

Is the study design appropriate and is the work technically sound?

Yes

Are sufficient details of methods and analysis provided to allow replication by others?

Partly

If applicable, is the statistical analysis and its interpretation appropriate?

Partly

Are all the source data underlying the results available to ensure full reproducibility?

Yes

Are the conclusions drawn adequately supported by the results?

Yes

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Reproductive health

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.

Author Response 20 Dec 2019

Anne Pfitzer, Jhpiego, Washington, USA

Thank you for your acknowledgement of the value of reporting on program evaluations. We also appreciate the reviewer taking time to provide a summary of the paper.

We added a sentence to the Discussion section, noting potential for courtesy bias in provider interviews.

The consent form did describe the purpose of the study: "We are trying to understand how family planning is included with other health services at this facility particularly maternal, newborn child health and nutrition services." and "...ask you a series of questions related to maternal, newborn, child health and nutrition services offered at this facility, the inclusion of family planning in these services and what impact the inclusion of family planning has hada) on these services and in general at this facility (providers, incharges) or b) ...on you as a client (clients)". However, we also assured them that we were not recording their names or identifying facilities so there was no way to link their statements to them and we would not report results by facility name. The Study Information Sheet given to in charges and posted in facilities stated: "The aim of this study is to strengthen the body of programmatic learning around the integration of PFP services into maternal, newborn, child health and nutrition services. It is a descriptive evaluation that will investigate and compare details on services for pregnant women and those who have had a child in the last 2 years and how they integrate aspects of maternal and infant young child nutrition and/or family planning in selected facilities and community programs in Bondo and Embu sub-counties in Kenya and Jharkhand and Bihar states in India. The objectives of the study are to describe implementation models, to understand barriers and facilitating factors related to the implementation and scale up of each model, and to describe client perceptions of each model."

The previous reviewer also commented on scoring for integration and waiting time and privacy. However, the methods described that analysis was in phases, with the first phase on levels of integration, phase 2 relating qualitative results to whether facilities are well integrated or not, and phase 3 the effect of these models of integration on clients experience of care. We have reorganized the results to include a clearer section on experience of care.

We acknowledge the small number of respondents, which adds a degree of uncertainty around the responses regarding aspects of quality of care such as privacy and waiting times. The reviewer is correct that qualitative interviews with client may have provided richer understanding of the quantitative data. However, we have little reason to doubt clients who expressed concerns about the services they received. As the reviewer pointed out, courtesy bias would suggest under-reporting of unsatisfactory or nuisances during a health visit.

The concerns about the presentation of methods are similar to the previous reviewer's. We have sought to address this by adding a text box to further describe the methodology, including the specific questions which were used to assess levels of integration.

As to why only 13 facilities have integration scores, the reviewer likely missed a sentence under the Data Management and analysis section (paragraph with heading "FP integration and qualitative data analysis" in bold) which states: "We excluded two facilities from Kenya where we did not collect client flow data because they had fewer than five client respondents per service area." In addition, Table 2 notations point to two facilities labeled KO03 and KO06 who are excluded and the reasons why are stated.

We agree that re-organizing the Results section to reflect the phases of our analysis makes sense. Thank you for the suggestion. We appreciate the concerns about the small numbers of clients for the client experience phase of the analysis. However, we choose to retain the data on client experiences since our study did not include qualitative interviews with clients to obtain their perspectives, and those perspectives are important.

We added a statement to introduce the discussion which seeks to frame the implications for policymakers.

Competing Interests: We have no competing interests in relation to this peer review.

Reviewer Report 10 June 2019

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Priya Nanda

Equity and Social Change, Research and Evaluation, Bill & Melinda Gates Foundation, New Delhi, Delhi, India

This is a very interesting study that draws its interpretations from a very small sample in Kenya and India. They compare the state on integration and quality of services across different size facilities in each study sites. The data is biased as it draws on high client load in well integrated facilities than poorly integrated facilities. Providers who were available were interviewed but there is no information whether these are the providers who were also trained in PFPF.

It is not clear why the research team did not use facility client flow data over the last 3-4 weeks as a robust way to understand flows rather than through observation during the says of study visit.

I like the approach of hierarchy of evidence and when there is disagreement between expert analyse and client flow giving preference to client flow data. Can the researchers explain when and in what instances did these disagreements happen? What might be other factors that the experts were looking at—this might help in understanding what are other metrics for well integration that the study could have looked at?

The definition of integration in this study may be limited. Would the authors like to reflect on how else they may have defined and measured it? For example they look at whether the client at ANC or other departments is getting FP counselling. What about capacity of counsellor to counsel on PFPF—is that a given that its is good in well integrated facilities? Is there more informed choice and method availability in well integrated facilities?

It would be helpful if the authors provide briefs on how scoring was done for integration. I see that they looked at wait times and privacy but its not clear to me whether these were attributes of well integrated or outcomes at well integrated facilities?

When a facility is badly integrated, does it get lower client load—is there a way to say that from the experience of well and medium integrated facilities? Is it possible to get high client load at facilities that are more crowded but yet are badly integrated where client flow pathways are more complicated?

In this study, its difficult to discern what went into the analysis as a definition of integration and what from the analysis is coming out as a determinant of integration?

The results are interesting yet the methodology is unclear and seems a bit bias-what the authors report as determinants are also definitions of what is coded as well integrated?

Bihar in fact shows contrary results where privacy and waiting times are worse in well integrated facilities. These results needs their own discussions—its possible that well integrated services take longer time but privacy cannot be lower in well integrated facilities? Or it can if integration is only about offering services at different points of contact.

In order to contextualize the information from respondents, it would be useful if the qualitative information is cited from coming from a well or poorly integrated facilities. For example, in facilities where providers are talking about poor counselling or poor training, are those also facilities that were coded as poorly integrated?

The article brings out issues of provider bias in the section on context. This is a key issue that needs to emphasised, as they clearly suggest that integrated services do not necessarily address provider bias or rights adequately.

The authors discuss the limitations of the study well which is one reason I am not bringing it up in my

review. However their discussion draws heavily from other studies, as this study itself presents inconclusive and mixed evidence. I think the study would be stronger if we started the analysis with fixed parameters on which questions were asked and then triangulated the qualitative data to match whether the fixed parameters for well integrated match with qualitative analysis of attributes of good quality services (which may or may not have high correlation with integration).

Is the work clearly and accurately presented and does it cite the current literature?

Yes

Is the study design appropriate and is the work technically sound?

Yes

Are sufficient details of methods and analysis provided to allow replication by others?

Yes

If applicable, is the statistical analysis and its interpretation appropriate?

Partly

Are all the source data underlying the results available to ensure full reproducibility?

No source data required

Are the conclusions drawn adequately supported by the results?

Yes

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Health Systems research and gender issues.

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.

Author Response 08 Jan 2020

Anne Pfitzer, Jhpiego, Washington, USA

Thank you for your thoughtful review.

In response to the issue of bias because higher client load in well-integrated facilities than poorly integrated ones: We should clarify that we had more clients surveyed in Indian well-integrated facilities, but this is not necessarily indicative of client loads. However, this is an interesting observation nevertheless. The purposive selection of facilities clearly had limitations, but client load was not a criterion for the study (although high volume of deliveries was a criteria for PFPF program support). While this may introduce bias, we were surprised about this finding as we would think that facilities with higher loads would have more difficulty with integration. We did find we had to make a correction and clarify that the issue of client respondents was specific to India, not Kenya.

Regarding information as to whether provider interviewed were trained in PFPF: we asked providers whether they had confidence in their abilities, whether they had the skills to do it, and

whether they received sufficient support, but not if they were trained. We chose to report on more direct indications of provider performance and did not examine relationship between self-reported training experience, confidence, skills, support and level of integration.

For the client flow methods, we chose one week as we felt it would address any fluctuations due to weekly occurrences, such as market days. While more client flow data might have been more robust, this was the amount of time feasible within project resources.

On the approach of hierarchy of evidence and analysis of levels of integration: additional text and text box have been added to provide further detail and transparency in classification of facilities. Disagreements occurred in cases where provider and client reports were inconsistent with each other and small numbers of respondents presented challenges for comparison; this was addressed by establishment of decision rules regarding inclusion criteria and hierarchy of data sources.

The reviewer makes a valid comment about the limitations of looking strictly at integration of services without also addressing the quality of services, which would have required an observation. We do not have such information, only that all facilities received roughly equivalent program support within the programs described in the paper.

On the issue of wait times and privacy, we should also note that wait times and privacy were not part of the determination of integration, but we sought instead to understand whether the level of integration had an effect on clients' reporting of these attributes of services. But in reference to a later comment, we have added a bit more interpretation of the findings regarding privacy issues in the discussion section. Indeed our findings suggest that integration and quality are not entirely correlated, but this may be partly because a comparison of the effects of integration on quality is an imperfect one as we didn't ask clients a counterfactual of whether they would have preferred longer wait times for example in exchange for additional services provided during the visit.

The reviewer's questions about levels of integration and client load are interesting questions. However, we do not feel our dataset can answer them.

We appreciate the need to contextualize the qualitative responses, so we went back to the transcripts, in order to re-identify all the quotes and classified them. We have thus clarified whether they were from well-integrated or poorly integrated facilities. In the process, we had to make additional corrections when quotes were mislabeled. In one or two cases, we made cuts because some quotes may have been misinterpreted when segmented out of context.

The review also makes a good point about provider bias related to context. We have added a sentence about bias as a separate issue to integration.

We found the feedback about the questions asked very helpful and have added a text box outlining the questions used in the analysis of integration. As noted, we clearly outline the limitations of this study and highlight complexities to be considered in future evaluations of family planning integration in other health services.

Competing Interests: We declare no competing interests

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