

Full Length Research Paper

Comparing simulated client experiences with phone survey self-reports for measuring the quality of family planning counseling: The case of DMPA-SC in Nigeria

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The quality of family planning services can have important implications for uptake and continued method use. Yet, measuring quality of care is complex, and quality itself is a multifaceted concept. In 2015, a new injectable contraceptive method, DMPA-SC (depot medroxyprogesterone acetate – subcutaneous, also known as Sayana Press®), was introduced through several private sector distribution channels in Nigeria. To examine aspects of quality for DMPA-SC service provision and contraceptive services more broadly, we compared self-reports from follow-up phone surveys with users to simulated client interactions that were designed to measure the same concepts. By using multiple methods, we sought to understand more deeply the biases associated with different data collection methods that ultimately lead to different conclusions regarding quality of contraceptive services, and to further assess to what extent these methods were suitable for detecting differences in quality across sub-groups using the case of married versus unmarried women. We found that simulated clients reported lower levels of quality across all comparable quality indicators than phone survey respondents attending the same facilities. Both methods were able to detect similar differential treatment by marital status. A mixed methods approach can provide differential insights into quality of family planning services, especially when aiming to understand both objective and subjective aspects of quality.

Keyword: Family planning counselling, contraceptive services, pregnancies, abortions, simulated client experiences.

INTRODUCTION

Global efforts to reduce unintended pregnancies and abortions and to increase utilization of contraceptive services include a range of programs and interventions specifically targeted towards improving quality of care [1, 2]. However, what constitutes quality care and how to measure it is complex. The Bruce-Jain framework (1994) for understanding the quality of contraceptive services included six domains: choice of method; information to client; technical competence; interpersonal relations; mechanisms to encourage continuity; and constellation of services [3]. Other frameworks have expanded upon this

framework to include additional domains, such as access/accessibility and patient-centeredness [4, 5]. Furthermore, a standard method for measuring quality in contraceptive services does not exist. Many measures primarily focus on technical aspects of quality that can be assessed objectively (e.g., facility stocks and infrastructure, provider competence) [1, 6]. Even studies that ask actual clients often rely on more objective questions, and struggle to capture their experiences of interpersonal or person-centered quality. Moreover, objective aspects of quality and clients' subjective perceptions may not align [7]. Tumlinson et al. (2014) detail the advantages and disadvantages of commonly-used methods for measuring the quality of contraceptive services, including facility audits, direct observations,

provider interviews, and client interviews, highlighting the fact that different methods yield different insight into different aspects of quality. For example, facility audits might identify issues related to stockouts, while direct observation may be useful for assessing provider competence. User interviews may be especially useful for assessing subjective aspects of quality, including satisfaction and client perceptions of quality. However, these methods are not without their limitations for measuring service quality, including courtesy bias, lack of reliability in self-reports, the Hawthorn effect, and recall bias.

Another methodological approach becoming increasingly common is the simulated client or “mystery client” method, wherein trained actors are sent to seek contraceptive services from a provider following a scripted interaction guide. These simulated clients then record the details of their interactions in a standard survey or interview format after they leave the facility. Ideally, this method allows for more standardization than asking actual clients or providers themselves as the actors can be trained to look for certain indicators of quality, and to have a standardized expectation of quality[8]. Recently, Tumlinson et al. (2014) used simulated clients to test the validity of client exit surveys and provider interviews (self-reported measures), and direct observations (conducted by a third party) in measuring quality; they found low specificity and positive predictive values of quality in all of these approaches. These results suggest that using different methodological approaches is necessary for understanding the complexity of women’s experiences of quality of care for contraceptive services, and that exploring the differences arising from such methods may yield new insights into how to improve both the clinical aspects and the patient-centeredness of care received.

Given these insights, we chose to use mixed methods—namely simulated clients and client self-reports via a follow-up phone survey—to assess the quality of services received by women seeking contraceptive services and particularly for obtaining DMPA-SC (depot medroxyprogesterone acetate – subcutaneous, also known as Sayana Press®), a new injectable contraceptive recently introduced into the Nigeria market. Furthermore, because this new delivery method for DMPA was specifically designed to reduce barriers to contraceptive uptake for underserved populations, including adolescent and young women [9], we sought to additionally examine differences in contraceptive services experienced by unmarried women compared to married women. The overarching aim was to assess how the quality of service provision could be improved in order to encourage greater uptake and method continuation.

Despite recent increases, contraceptive use is generally low in Nigeria, reaching 11.1% in 2013 for modern methods [10]. Injectables are increasingly popular, and comprise the largest increase in the contraceptive

prevalence rate among married women in the past three years [11]. However, these gains are not equal. Although unmarried Nigerian women are more likely to use modern contraception, they are also at increased risk for unintended pregnancies, suggesting that consistency in use of effective methods remains poor [12, 13]. In general, adolescents and young adults have substantial unmet need for sexual and reproductive health services and related information [14], and many avoid seeking services due to poor quality of care (Blanc *et al.* 2016).

Unlike other countries where DMPA-SC has been introduced and studied as small pilot projects [15–17], DMPA-SC was introduced in Nigeria in 2015 via a mass market approach. Distribution occurred through multiple channels—facilities, drug shops, and specially-trained community-based distributors—in the private health care sector which accounts for the majority of all health services provided, and in particular for contraceptive services[10]. This presented an opportunity to assess actual user experiences with DMPA-SC from the broader population of new and continuing contraception users under real world conditions. Our data collection focused on DMPA-SC service provision from selected private sector providers across even states in Southwest Nigeria (where the introductory efforts were concentrated) in 2016. In order to more fully understand the experiences of married and unmarried users, we chose to use multiple methods to assess various aspects of quality of service provision. In this paper, we directly compared the quality of care along specific measures collected from both the simulated clients sent to providers selling DMPA-SC and the follow-up phone surveys with women who recently obtained DMPA-SC at the same facility. To understand whether these varied methodological approaches could identify the same differences in the quality of care among population sub-groups, we further analyzed the responses by marital status.

METHODOLOGY

Sampling frame

Data was collected between March and October 2016 in seven states in south-western Nigeria (Ekiti, Kwara, Lagos, Ogun, Ondo, Osun, Oyo). These states were targeted for the initial private sector introduction of DMPA-SC. From March to May 2015, we recruited a convenience sample of providers who had purchased at least 25 units of DMPA-SC from the distributor. Providers included private clinics or hospitals, pharmacies or retail drug outlets, government clinics or hospitals, and specially-trained community-based distributors (qualified as licensed Community Health Extension Workers). In total, 205 providers consented to participate in the study. Each was asked to help recruit women who purchased DMPA-SC from them for follow-up survey and interview. Providers were instructed to ask clients who received an

injectable contraceptive (of any type) if they were willing to be called for a short phone interview and to record their contact information if they consented. Providers received a small incentive (1500 Naira or ~US\$4.25 of mobile phone credits) for keeping the list of potential respondents. After dropping 76 providers who did not record any injectable contraceptive user willing to be contacted and two public facilities that were misclassified as private providers, 127 providers constituted the sampling frame for the resulting phone survey and simulated client interactions.

Phone survey of DMPA-SC users

All women purchasing DMPA-SC at an enrolled provider site and who consented to be contacted (N=994) were called to complete a survey administered over the phone, usually lasting about 15-20 minutes. The survey was administered by a trained, bilingual (English and Yoruba, the dominant local language) interviewer over the phone. Respondents were compensated with 200 Naira (~US\$0.57) of mobile phone credits for completing the survey. A total of 541 women completed the phone survey. Respondents were asked about demographic and socioeconomic characteristics, prior contraceptive use, as well as the quality measures discussed below.

Simulated clients

From the 127 providers who provided phone survey respondents, we purposively selected a subsample of 60 providers with which to conduct simulated client interactions. Providers were first stratified by channel type, and then further stratified into four categories based on DMPA-SC client volume: (1) high: 30+ clients; (2) medium: 10-29 clients; (3) low: 1-9 clients; and (4) very low: 0 clients. Within each channel, providers were then selected based on the following procedures, which were slightly different for each channel due to the particularities of the resulting sample. For hospitals/clinics, we selected 13 facilities that had sold any DMPA-SC and that recorded the highest volumes of other (i.e., non-DMPA-SC such as Depo Provera or Noristerat) injectable sales, and two high volume facilities for other injectables but which had low volumes of DMPA-SC. For pharmacies and retail drug outlets, we selected all facilities that had sold any DMPA-SC and that recorded the highest volumes of other injectables until a total of 15 facilities were identified in each channel. For community-based distributors, we purposively selected a mix of high, medium and low volume agents proportional to the total number of distributors in each volume category, while also aiming to achieve representation across the six states in which they were found (one state did not have a qualifying distributor in the sampling frame at the time). When data collection was nearly completed, a status review found three facilities where simulated client

interactions could not be completed (one clinic and two community-based distributors) after multiple attempts. These providers were replaced with a provider selected from the same channel within the same DMPA-SC volume stratum.

At each selected provider, two different simulated client interactions were conducted reflecting two profiles of women: (1) a sexually active, unmarried adolescent woman aged 18 without children, seeking a contraceptive method for pregnancy prevention (“unmarried”), and (2) a married woman aged 28 with two children, seeking a contraceptive method for birth spacing (“married”). Each provider was approached two times about one week apart—one interaction for each of the two profiles. A total of eight trained simulated client actors (four for each profile) were sent to selected providers to follow a scripted interaction. The actors were standardized in terms of age-appropriate attire typical of a middle-income woman. Actors were trained to approach the provider stating that she was interested in getting contraception and to ask for someone who could help her. The provider was then allowed to lead the counseling conversation. Only at the end of the session was the actor instructed to ask specifically about DMPA-SC if it was not already mentioned by the provider. Providers were not informed of the visit ahead of time. After the visit, simulated clients immediately completed a short survey administered by another member of the research team about her interaction with the provider. The survey was conducted in a location where the provider could not see the simulated client (e.g., in the car down the street), but as soon as possible to optimize recall. Of the 117 completed interactions in which the actor was able to successfully engage the provider with her initial inquiry for contraceptive information, 112 interactions were completed pairwise for the married and unmarried profiles at the same provider location. We restrict our analysis to this subset of pairwise, completed interactions.

Measures of quality and analysis

For the analysis of phone survey responses and simulated client interactions, we focused on indicators for the technical aspects of quality of care that were captured in both the phone survey and simulated client survey. We chose these measures to facilitate the direct comparison because they are arguably more objective, relying less on users’ or clients’ subjective interpretation of how the interaction unfolded. In all, there were eight items included in the technical competency domain, which primarily focused on if the provider had asked the client about past contraceptive use, experiences of side effects, complicating health factors, childbearing goals, pregnancy status, expected side effects of DMPA-SC, instructions for dealing with problems, and information on length of pregnancy prevention protection (see Table 1).

For each item, questions in the phone and simulated client surveys were worded and structured as similarly as possible. Each user or simulated client actor was asked to respond “yes” or “no” to each item question, and a dummy variable indicator was constructed for each “yes” response.

For each data source, we calculate the overall sample response frequency for each technical competency quality item measure. We also calculate the responses by marital status. Simple chi-square tests were then used to explore differences by marital status or profile within each data collection approach.

Ethical approval

This study received ethical approval from the Institutional Review Board at the University of California, San Francisco, and from the National Health Research Ethics Committee of the Ministry of Health, Government of Nigeria.

RESULTS

The phone survey included 541 women who had visited a private facility for DMPA-SC and were using it. As shown in Table 1, almost two-thirds (65.8%) of phone survey participants visited a community-based distributor to obtain DMPA-SC, followed by private hospital/clinic/maternity homes (11.1%), and government hospital/clinic/maternity home (private providers employed at public facilities) (11.7%). About 6% of women attended a pharmacy, and 3.7% attended a retail drug shop. Few women attended private doctors or nurses. The majority of women were currently married (93.0%) and age 25 or older (only 9% were under 25). Most switched from another modern method, with just over one-quarter being new users of contraception. Simulated clients completed visits for both profiles at a total of 122 facilities (Table 2). The majority of these facilities or providers were located in urban areas (72.1%), with most of the remainder in peri-urban areas (24.6%). Less than half of providers visited were female (42.6%).

Phone survey responses compared to simulated client findings

Both methods record a perceived difference in quality of care received by married and unmarried family planning clients, with unmarried younger women receiving less favorable treatment. The main difference between both methods is in the magnitude of this difference. Overwhelmingly, clients interviewed in the phone survey reported higher levels of quality and less variation across item measures compared to simulated clients (Table 3). Compared to the simulated clients, about twice as many women in the phone survey reported being asked if they

had used contraception before, or asked if they wanted more/any children. Phone survey respondents were more than three times as likely as simulated clients to report being asked about other health problems, and asked about or tested for pregnancy. Phone survey respondents were almost three times as likely as simulated clients to report that they were described side effects of DMPA-SC. The most similar element of quality between the different method approaches was being told how long DMPA-SC protects against pregnancy (82.3% of simulated clients compared to 99.1% of phone survey respondents). While at least 70% of phone survey respondents reported experiencing each measure of quality asked, length of protection of pregnancy was the only measure of quality to surpass this level of coverage among simulated clients.

Differences in quality of care between unmarried and married clients (actual users)

In the phone survey, unmarried women were provided significantly poorer quality services for two of the technical competence components (i.e., being asked if they had ever used a family planning method and asked if they wanted more children in the future). Unmarried respondents were significantly less likely than married clients to have been asked about other health problems like infections and high blood pressure. They were also less likely to have been told of any likely side effects of DMPA-SC, or told what to do if they experienced side effects compared to their married counterparts.

Differences in quality of care between unmarried and married clients (simulated clients)

The simulated client data yielded similar results from the user interviews about lower quality of care received by unmarried contraceptive clients. Unmarried simulated clients reported being asked if they were currently pregnant or wanted to have any children in the future significantly less frequently than married simulated clients. They were less likely than married simulated clients to be asked if they had used contraception before. They were also significantly less likely than married simulated clients to be told how long DMPA-SC protects against pregnancy.

DISCUSSION

To assess the quality of contraceptive counseling in the provision of DMPA-SC delivered through private sector providers in South West Nigeria, we compared measures of technical quality from users’ experiences self-reported in a follow-up phone survey and with simulated client visits. Our findings suggest that different methodological approaches can yield similar results but with varying intensity about the quality of care. Both methods were

Table 1. Phone survey sample characteristics.

	Phone survey N (%)
State	
Ekiti	38 (7.0)
Lagos	194 (35.9)
Kwara	15 (2.8)
Ogun	108 (19.9)
Ondo	44 (8.1)
Osun	36 (6.7)
Oyo	106 (19.6)
Type of facility or provider attended	
Community-based distributor	356 (65.8)
Retail drug outlet	20 (3.7)
Pharmacy	31 (5.7)
Private hospital/clinic/maternity home	60 (11.1)
Government hospital/clinic/maternity home	63 (11.7)
Private doctor/nurse	5 (0.9)
Other	5 (0.9)
Age Group	
<25	47 (9.1)
25-34	287 (55.6)
35+	182 (35.3)
Marital Status	
Not currently married	33 (6.1)
Currently married	503 (93.0)
Don't know/No response	5 (0.9)
Prior family planning use	
New user	154 (28.5)
Switched from other modern method	332 (61.4)
Switched from traditional method	55 (10.2)
Total	541

able to detect systematic differences in quality for women of different marital statuses. Across all measures, phone survey respondents perceived higher levels of quality than simulated clients, however, the direction of the difference in quality of care between young unmarried clients and older married clients was similar: younger unmarried women received lower quality of care for contraceptive services. In sensitivity analyses, we restricted the analyses to the same set of providers who saw both simulated clients and phone survey respondents; responses were similar in magnitude and direction.

These findings support previous research suggesting that asking women directly about their experiences can lead to higher quality scores than more objective approaches (such as simulated clients), even for aspects of technical quality that may be less open to subjective rating and only require a yes/no response. While actual users' responses may better capture their perceived experiences, these results may be less useful to program implementers because they are determined by the socio-cultural expectations governing such interactions, which in this case, are reflective of a population that may have low expectations of quality of care. In contrast, a key

Table 2. Sample of providers visited by simulated clients.

	Providers N (%)
State	
Ekiti	18 (14.8)
Lagos	44 (36.1)
Kwara	12 (9.8)
Ogun	8 (6.6)
Ondo	10 (8.2)
Osun	10 (8.2)
Oyo	20 (16.4)
Type of facility	
Community-based distributor	30 (24.6)
Retail drug outlet	30 (24.6)
Pharmacy	30 (24.6)
Private hospital/clinic/maternity home	32 (26.2)
Government hospital/clinic/maternity home	0
Private doctor/nurse	0
Location of facility	
Urban	88 (72.1)
Peri-urban	30 (24.6)
Rural	4 (3.3)
Gender of provider	
Female	52 (42.6)
Male	70 (57.4)
Total	122

advantage of the simulated client approach is the standardization of perspectives on quality [8], which ultimately yield greater variation in quality measurements with which to identify where improvements in service provision are needed.

In fact, our findings coupled with our experiences in training our simulated client actors suggest that self-reported user perceptions may reflect more reflexive reactions or reactions based on social expectation, rather than a more detached, independent assessment of quality that researchers or program implementers intend. Many of our simulated client actors similarly perceived higher levels of quality in role play during initial training sessions than after eventual calibration. When mock patient-provider interactions were analyzed more systematically to standardize ratings, actors' perceptions of quality declined, particularly among unmarried profile actors. Compared to the older women actors assuming the married profile, our younger women actors did not seem to expect to receive higher quality care, and thus initially rated the mock interactions to be higher quality than older women for the same observed encounter.

Thus, questions about the quality of clinical care and counseling may be less salient for unmarried women seeking contraceptive services who do not expect to receive higher quality of care or who may have few reference points with which to assess relative quality of care. Other studies have found that younger contraceptive users in Nigeria have limited contact with contraceptive services [14]. However, when expectations of quality are standardized across individuals, unmarried women may be more likely to recognize relatively worse quality of care, potentially explaining the larger magnitude of differences by marital status found with simulated clients as compared to phone survey respondents. Thus, users' assessments of the quality contraceptive service provision should be interpreted in light of prevailing social and cultural expectations, which may differ across subgroups.

Additionally, women's expectations of quality may not necessarily align with programmatic or international standards of quality. While our results suggest that user self-reports may provide a better summary depiction of their lived experiences, it may behoove researchers to

Table 3. Proportion of respondents reporting technical competency quality measures in the phone survey compared to simulated client reports.

Quality measure (Did the provider...)	Phone Survey				Simulated Clients			
	All (N=536)*	Unmarried (N=33)	Married (N=503)	p-value	All (N=112)	Unmarried (N=56)	Married (N=56)	p-value
...ask if you had ever used family planning before? (Yes)	89.4	75.8	90.2	0.009	57.3	40.7	74.1	0.000
...ask if you had ever experienced any side effects? (Yes)	84.9	75.8	85.5	0.133				
...ask if you had had any other health problems (e.g., infections, high blood pressure)? (Yes)	74.8	42.4	77.0	0.000	4.3	3.4	5.2	0.637
...ask if you wanted to have any/more children in the future? (Yes)	87.4	75.8	88.4	0.033	45.3	20.3	70.7	0.000
...do anything to find out if you were pregnant?/Ask if you were pregnant? (Yes)	91.6	84.9	92.1	0.149	18.8	8.5	29.3	0.004
... describe any side effects of SayanaPress? (Yes)	71.4	48.5	73.0	0.003	26.2	26.8	25.5	0.887
... tell you what to do if you had problems with the SayanaPress injection? (Yes)	71.9	54.6	73.1	0.022				
... tell you how long it protects against pregnancy?/tell you the accurate amount of time? (Yes)	99.1	100.0	99.0	0.566	85.3	78.7	91.8	0.042

question if the common aspects of quality adopted by researchers and practitioners are salient to the women represented by the sample. While this study was only able to directly compare quality measures for a limited subset of technical competency measures purposively chosen for that purpose, the relevant dimensions of quality for a particular population may be highly context-dependent. For example, recent research on person-centered quality of care for childbirth in Kenya found that even rural and urban populations of the same country identified different important indicators for quality [18]. These differences in quality ratings between methods were similar to those found by Tumlinson et al. between their simulated clients and user self-reports in exit interviews [6]. Thus, even though our phone surveys were conducted with some delay after the service was rendered rather than immediately afterward vis-a-vis exit interviews, recall bias for more technical quality measures did not appear to affect overall user ratings. Several study limitations should be noted. First, while simulated clients went

to the same facilities as phone survey respondents, this does not mean that they saw the same provider. This is most likely especially true for the larger facilities, but also the pharmacies. Thus, the comparison between these two methods may not be reflective of interactions with the same provider, only the same facility. Phone survey interviews with actual users were conducted within a few weeks of the provider interaction, which may introduce recall bias, unlike with our simulated client data obtained from clients debriefed within 30 minutes of their interaction with providers. Although simulated client interactions and profiles were standardized across actors as much as possible, providers may still perceive actors to be members of better educated and wealthier classes given their mannerisms and speech. Due to the large geographic area covered by the DMPA-SC program under study, local actors from targeted communities could not be recruited for all selected localities. Respondents for the phone survey were disproportionately drawn from clients

of community-based distributors, who were more likely to provide services to unmarried women, than other provider types. Yet, most of our results still hold when the phone survey sample is restricted to the same set of providers included in the simulated client interactions, although this sample size is too small to make any claims of significance.

CONCLUSIONS

Measuring the quality of contraceptive provision is essential for improving the experiences of clients, and subsequently increasing the uptake and continuation of contraceptive use. However, measuring the quality of contraceptive services has proven to be difficult as different approaches have specific limitations and advantages. Our study has compared two different approaches to measuring quality of contraceptive services in the private healthcare sector. Both approaches confirmed that unmarried clients receive lower quality of care compared to married clients. The simulated client method is more time- and resource-intensive than exit or follow-up interviews. However, this method has the potential to provide a more standardized perspective on the quality of the provider-client interaction, while still collecting valuable information on important differences in user experiences across subgroups. It is not affected by recall bias unlike phone interviews conducted several weeks after the interaction. It can also allow for better control of the effects of social expectations unlike all other direct interviews of actual clients, including client exit. Depending on the research and intervention agenda, having standardized, comparable data might be most beneficial, for example, when comparing programs or across populations. On the other hand, other research might benefit more from understanding women's lived experiences of provider interactions and quality, as well as their expectations and perceptions of specific aspects of quality, for example when aiming to improve a specific program. These findings can help future researchers select the most appropriate methodological approach for their research goals.

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