A Mixed-methods Evaluation of a Person-centered Family Planning Intervention for Community Health Workers in India on Family Planning Outcomes

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Abstract

**Background:** Person-centered quality for family planning has been gaining increased attention, yet few interventions have focused on this, or measured associations between PCFP and family planning outcomes (uptake, continuation, etc.). In India, the first point of contact for family planning is often the community health care worker, in this case, Accredited Social Health Activists (ASHAs).

**Methods:** In this study, we evaluate a training on person-centered family planning as an add-on to a training on family planning provision for urban ASHAs in Varanasi, India in 2019 using mixed methods. We first validate a scale to measure person-centered family planning in a community health worker population, and find it to be valid. Higher person-centered family planning scores are associated with family planning uptake.

**Results:** Comparing women who saw intervention compared to control ASHAs, we find that the intervention had no impact on overall person-centered family planning scores. Women in the intervention arm were more likely to report that their ASHA had a strong preference about what method they choose, suggesting that the training increased provider pressure. However, qualitative interviews with ASHAs suggest that they value person-centered care for their interactions and absorbed the messages from the intervention.

**Conclusions:** More research is needed on how to intervene to change behaviors related to person-centered family planning. This study received IRB approval from the University of California, San Francisco (IRB # 15-25950) and was retrospectively registered at clinicaltrials.gov (NCT04206527) on 20 December 2019. [https://clinicaltrials.gov/ct2/show/NCT04206527?term=NCT04206527&draw=2&rank=1](https://clinicaltrials.gov/ct2/show/NCT04206527?term=NCT04206527&draw=2&rank=1)

**Background**

Across India, reproductive healthcare services such as access to contraceptives and facility-based delivery services are provided free of charge by the National government to facilitate efforts to improve maternal and neonatal health outcomes (1). Despite these efforts, India has the highest number of women with an unmet need for contraception, which can be linked to high rates of maternal mortality and incidence of unsafe abortions (2, 3). Despite substantial financial investments put forth by the government, the annual increase of modern contraceptive use between 2012 and 2018 among reproductive aged women in India has only been 0.1% (4).

In 2005, the Government of India launched the National Rural Health Mission (NRHM) with the objective to bring quality and affordable health care, including access to contraceptives, to communities across the country in rural settings (5). Efforts to improve quality and access by the NRHM included the deployment of Accredited Social Health Activists (ASHAs), who are female community health workers stationed directly within communities that act as the initial contact with the formalized healthcare system, focusing on maternal and child health and family planning. In general, ASHAs are female residents of the community they serve, between 25–45 years old, and have a formal education up to class 8 (6). In 2013,
the NRHM evolved into the National Health Mission (NHM) and grew to include the National Urban Health Mission. This expansion aimed to meet the unique needs of urban slum populations (7). The Government of India cited “overcrowding” of clinics and inefficient outreach and referral systems as barriers that make urban slum populations especially vulnerable to exclusion from the health system (8, 9). Each urban public health center (UPHC) caters to a slum population of between 25,000–30,000 individuals (8). As per the government guidelines, there are ASHA for every 1000–2500 population in urban areas and they can cover about 200–500 households depending upon spatial consideration. When the population covered increases to more than 2,500, another ASHA is engaged (8).

As of 2015, there is approximately 1 ASHA for every 1,000 people across the nation (10). This spread puts ASHAs in a unique position to extend the availability of family planning services to hard to reach communities, rural and urban alike. Even with a large workforce focused on family planning, 30 million women who would like to avoid pregnancy remain without access to a modern method of contraception in India (11). Recent reviews of Indian nation health policy found that quality of care is a key concern in Indian public health service delivery, and is potentially contributing to this gap (12).

In response to this significant access challenge, the Government of India has committed to deliver “quality assured [family planning] services to the hardest-to-reach in rural and urban areas” by 2020 (13). In line with this goal, quality improvement and monitoring systems have been integrated into many health programs including the NHM, as well as the Reproductive, Maternal, Newborn, Child Health and Adolescent (RMNCH + A) program, launched in 2013 (12). These quality improvement initiatives do not however regularly evaluate “patient satisfaction” nor the quality of interactions between patients and providers (12). Person-centeredness is also left out of these quality initiatives. A review of literature has found that interventions focused on person-centered care (PCC) dimensions in family planning were associated with patient satisfaction, increased knowledge, with limited and mixed results about method uptake, and sustained use (14). Dimensions of quality included in these assessments include access to services, facility infrastructure, equipment and supplies, professional standards, and continuity of care.

As part of a larger project on person-centered care for family planning, delivery and abortion, we developed and validated a scale to measure person-centered family planning (PCFP) in India (and Kenya), described in more detail elsewhere (15). The final validated scale in India included 22 items that fell into two domains: “autonomy, respectful care, and communication” and “health facility environment.” The scale was validated in the same state of India (Uttar Pradesh) as the current study, however, it was validated in a population of women seeking family planning services at a facility and being seen by a trained, professional health care provider. It has not yet been validated among women seeing a community health worker. There is no known measure of person-centered interactions for CHWs, who provide a large proportion of care for women, especially for family planning, globally.

Since ASHAs are the first point of contact about family planning for many women in India, we developed a training for ASHAs (described in more detail below) on PCFP to be added onto a training on family planning quality more broadly. To evaluate this intervention, we use mixed methods comprised of (1)
surveys with women seen by ASHAs that did and did not receive this additional training ("intervention") and (2) qualitative interviews with ASHAs who received the intervention. Our first aim was to test if additional PCFP training given to ASHAs was associated with changes in PCFP scores by comparing family planning related PCC scores among women who have worked with PCFP-trained ASHAs versus those women that have worked with non-PCFP trained ASHAs. Additionally, we assessed whether PCFP scores were associated with a higher likelihood of family planning method adoption, continuation, and other markers of quality. By integrating the voices of the ASHAs through qualitative interviews, we are able to explore more in depth why certain domains of PCFP may have been more salient or not for ASHAs.

Methods

Intervention:

The PCFP intervention built upon an ongoing effort by the government of Uttar Pradesh (UP), India to improve contraceptive access through deployment of ASHAs into urban areas of UP. The intervention was conducted within the context of The Challenge Initiative for Healthy Cities (TCIHC) program, which works alongside the government to provide enhanced training in family planning counselling and method options to this new cadre of urban ASHAs. The aim of TCIHC is to encourage uptake of modern family planning methods for delay of first pregnancy and/or spacing between births among urban women with unmet need aged 18 to 24.

The intervention described in this paper added to the standard family planning counselling training that ASHAs received by including a training module focused on salient PCFP domains as described by Sudhinaraset and colleagues (Sudhinaraset et al., 2018) (15). The intervention consisted of a four-hour training focused on areas of PCFP that may be most relevant to community health workers; namely respect, communication, trust, and autonomy. The training also covered the importance of person-centered care, family planning method mix and supporting clients (women) in choosing appropriate family planning methods (informed choice). The training was interactive, including case studies and role play sessions for the ASHAs to practice providing counselling to different types of clients and to think through their own experiences of poor treatment, discrimination, and their own unconscious bias. The intervention training was initially pilot tested via a training of trainers (ToT) in Uttar Pradesh and conducted with program managers, clinicians and project officers with expertise in family planning. ToT participants provided feedback on cultural acceptability and appropriateness, as well as relevance of PCFP focus areas for community health workers. The intervention training was adapted accordingly and additionally pilot-tested with a group of 21 ASHAs working in an urban area comparable to study site locations. Pre-post pilot survey results indicated that ASHAs agreed or strongly agreed that the training was helpful to their work, the training content was important for ASHAs, training in PCFP would help them to provide better care, and that they desired further training in PCFP. Further adaptations to the intervention training content were then made based on feedback received from pilot participants during the training and within qualitative responses contained in the pre-post survey. The intervention training
was conducted across two different groups of 20 urban ASHAs each in January 2019. Pre-post survey responses indicated that almost all (32/40) training participants agreed that the training in PCFP would help them to provide better care and more than two-thirds agreed that they learned something new during the intervention training.

Evaluation:

We evaluated the additional PCFP component add-on to the family planning training provided through TCIHC in 4 intervention UPHCs compared to 4 control UPHCs in Varanasi, Uttar Pradesh. Varanasi has a total population of 36.77 lakh (approximately 3.7 million) per the 2011 Indian census. Of the total population, 44.4 percent live in urban areas. About 57% of currently married women in the age group of 15–49 years were using any family method in the urban area of Varanasi district (NFHS 4, 2015-16). Intervention and control sites were matched by considering the estimated number of women with unmet family planning need, number of ASHAs, number of UPHCs, urban population of women, and age ratios.

We collected surveys with women who had been visited by an ASHA in both control and intervention areas approximately 3 months post-intervention. In order to detect a 10% difference in mean PCC score between intervention and control groups, we interviewed 542 women per arm, for a total of 1,084 women. Within each arm, we interviewed 271 women who had taken up family planning and 271 women who had not. Survey data was collected between April-June of 2019. We also conducted qualitative interviews with a subset of ASHAs in both intervention and control areas (N = 20) lasting between one to two hours. Interviews were conducted in April and May of 2019.

Surveys with women: Eligibility criteria for the survey included women in the age group of 15–49 years who had been seen by an ASHA from one of the 4 intervention or 4 control UPHCs in the last three months and adopted or switched to a new method. Women who were previously using a method and did not change the method in the last three months were excluded from the study. Women in both control and interventions areas who had seen an ASHA within the previous three months were surveyed to understand the quality of their experience with the ASHA and whether the woman had taken up a FP method of her choice following interaction with the ASHA. Women who agreed to participate in the study provided verbal consent and were interviewed at their residence. Women who did not meet eligibility criteria, refused participation following an explanation of the study’s purpose or who refused to consent to participation were excluded from the study. A standard structured questionnaire was employed by trained data collectors and each interview took approximately 30–40 minutes.

Qualitative interviews with ASHAs: A sample cohort of twenty ASHAs was purposively selected from the intervention and control arm of the study. ASHA were sampled to be roughly half in control and half in intervention groups and within each of those, some to had been working for < 3 years and some more than 3 years as ASHA. In-depth interview guides were developed to elicit the perspectives of ASHAs on their experiences providing family planning counselling to clients. Intervention participants were also asked about their perception of the integration of PCFP into their existing family planning practices. Before starting each interview, verbal informed consent was collected from participants by the lead
interviewer. Participants were also informed that involvement in the interview was voluntary and that they were free to terminate participation at any point. Using an introductory script, participants were also informed that no information from the voluntary interview would be shared with their supervisors, clinic staff, or any government officials in a way that could identify them. Interviews were audio recorded and notes were taken throughout their duration. Audio recordings were transcribed in Hindi and then translated into English for analysis.

This study received IRB approval from the University of California, San Francisco (IRB # 15-25950).

Analysis

Quantitative Measures:

Person-centered care: There were 15 individual items asked to women about their person-centered care experience with the ASHA. We adapted the PCFP scale discussed above that was validated in Uttar Pradesh for women who sought care in a facility to be more appropriate for women seeing an ASHA (15). Some items were dropped that specifically related to more technical procedures or facility environment, leaving 15 of the original 22 items. Remaining items were slightly re-worded to be reflective of visits in the home with an ASHA.

Our first step was to validate the PCFP scale previously validated in India among women who saw a provider in a facility among women who saw the ASHA. We followed the same factor analysis procedures as in the initial validation, described in detail in Sudhinaraset et al (15). The initial validation paper identified two sub-scales. We only included items from the “autonomy, respectful care, and communication” subscale because the other sub-scale was related to the health facility environment which was not relevant for community health workers visiting women in their homes. We found that all of the items in the facility-validated PCFP sub-scale loaded well onto 1 factor in this analysis (alpha = 0.939). Therefore all items included in the original PCFP scale used in this analysis.

We thus created a summary score that ranged from 0–43, with higher meaning that the woman had an overall more positive, person-centered experience. We wanted to also explore each item individually. Each item was ranked on a 4-point scale (“none of the time”, “some of the time”, “most of the time” and “all of the time”, for most indicators). To make interpretation and analysis easier, we created a binary value for each item where the lowest two response categories were grouped and the highest two grouped.

Other indicators of person-centered interactions: To better understand how our measure of PCFP is associated with other commonly used measures, we looked at two other measure of interactions between clients and providers. The first is a question that asked if the woman felt the ASHA was involved too much, too little, or the right amount in the decisions about what method to choose. This was made into a binary variable of “too much/too little” compared to the right amount. The second was a question asking the women if the ASHA had a preference about what method she choose: Extremely strong preference,
strong, moderate, slight, none. A binary was created of extremely strong and strong compared to all others.

Family Planning use: The primary outcome variable was family planning uptake at 3 months post-ASHA training. This was measured by a question that women answered asking if she had adopted a family planning after meeting with an ASHA within the previous three months, or if she switched to a new method since the ASHA's visit.

Socio-demographic control variables: We controlled for a number of socio-demographic factors which could impact women's family planning use and person-centered experiences, based on previous studies in this setting. We controlled for age in groups (18–24, 25–29, 30–34 and over 35), education in groups (illiterate/no school/primary, post-primary/vocational/secondary, college or above, and still in school), and occupation (being a homemaker or not). We also controlled for caste groups (scheduled caste/tribe (lowest), other backwards castes, and general caste) and religion (Muslim vs. Hindu). Finally, we controlled for if the woman stated that she desired more children, as this is important for understand family planning uptake.

Quantitative Analysis: First, we show the socio-demographic characteristic of women in the intervention and control groups, and overall, including testing for significant differences, using percentages and chi-squared tests. Next, we explored whether person-centered care scores or individual items (as binary values) differed between intervention and control participants, using means, percentages, and t-tests. We then ran multi-variable logistic regression models, controlling for the socio-demographics described above, to explore the association between being in the intervention and the full PCC score. Next, we explored the association, again using multi-variable logistic regression models, between PCC-scores and family planning uptake, controlling for the same socio-demographic variables. All analyses were run using STATA version 15 (16).

Qualitative Analysis: Initial summary memos were drafted for each interview transcript and continuously refined throughout the data analysis process. Each interview transcript then went through a multi-phase iterative coding process using ATLAS.ti version 8.4.2 (17). The coding process involved cycles of open coding, axial coding, and selective coding. A codebook was developed and continuously refined until agreed upon by three researchers (NDS, KG, CM). Any additions or changes to the codebook were documented. In addition to a codebook, a data matrix was created to visualize emerging themes and refine potential theories. Data was analysed using Grounded Theory and analysis continued until thematic saturation was deemed to be reached (18).

Results

Description of study population: Most women were 25–29 year old (38.4%), with 30.4% being 18–24, 18.4% being 30–34 and 12.5% over 35 years (Table 1). Most women were illiterate or had none or primary school (40.1%), 19.3% had post-primary/vocational/secondary school, 33.1% college or above and 7.5% were still in school. Most were homemakers (93.8%). Most were other backwards caste (64.5%), or
Scheduled caste/Scheduled tribe (21.8%) and were Hindu (81.8%). Just under half wanted more children (46.7%). There were significant differences between intervention and control groups, with the intervention group being slightly older, less educated, more other backwards caste/less general caste, more Muslim, having more sons and desiring fewer additional children.
|                                | Control   |       |         | Intervention |       |         | Total |       |
|--------------------------------|-----------|-------|---------|--------------|-------|---------|-------|-------|
|                                | No.       | %     | No.     | %            | No.   | %       | No.   | %     |
| **Age group***                 |           |       |         |              |       |         |       |       |
| 18-24                          | 177       | 32.7  | 154     | 28.4         | 331   | 30.5    |       |       |
| 25-29                          | 227       | 41.9  | 189     | 34.9         | 416   | 38.4    |       |       |
| 30-34                          | 99        | 18.3  | 102     | 18.8         | 201   | 18.5    |       |       |
| 35 and over                    | 39        | 7.2   | 97      | 17.9         | 136   | 12.5    |       |       |
| **Education***                 |           |       |         |              |       |         |       |       |
| Illiterate/No school/Primary   | 199       | 36.7  | 236     | 43.5         | 435   | 40.1    |       |       |
| Post-primary/vocational/Secondary | 121     | 22.3  | 88      | 16.2         | 209   | 19.3    |       |       |
| College or above               | 188       | 34.7  | 171     | 31.5         | 359   | 33.1    |       |       |
| still in school                | 34        | 6.3   | 47      | 8.7          | 81    | 7.5     |       |       |
| **Occupation**                 |           |       |         |              |       |         |       |       |
| Working                        | 38        | 7     | 29      | 5.4          | 67    | 6.2     |       |       |
| Homemaker                      | 504       | 93    | 513     | 94.6         | 1,017.00 | 93.8 |       |       |
| **Caste group***               |           |       |         |              |       |         |       |       |
| SC/ST                          | 137       | 25.3  | 99      | 18.3         | 236   | 21.8    |       |       |
| OBC                            | 317       | 58.6  | 381     | 70.3         | 698   | 64.5    |       |       |
| General                        | 87        | 16.1  | 62      | 11.4         | 149   | 13.8    |       |       |
| **What is your religion***     |           |       |         |              |       |         |       |       |
| Hindu                          | 498       | 92.1  | 388     | 71.6         | 886   | 81.8    |       |       |
| Muslim                         | 43        | 7.9   | 154     | 28.4         | 197   | 18.2    |       |       |
Desire More Children*

|       | Control | Intervention |
|-------|---------|--------------|
| No    | 257     | 310          |
| Yes   | 276     | 496          |

(*significant at the p<0.05 level difference between control and intervention

The qualitative sample (N = 20) included 11 intervention ASHAs who had participated in the PCFP training and nine control ASHAs who did not. Respondent ages ranged from 28 to 42 years (mean: 34.8). One half of the sample had completed lower secondary school up to grade ten and the other half had completed upper secondary school up to grade 12.

**Quantitative evaluation findings from the survey with clients**

The overall PCC score was not significantly different between the intervention and control groups, with a mean of about 29.3 (range from 0–43) (Table 2). Women in the control arm in general rated individual PCFP items slightly lower, although this difference was only significant for 4 items: the ASHA introducing herself, showing respect, feeling the ASHA wanted the best for her and being allowed a person of her choice to stay during the visit.
Table 2:
Differences in person-centered care items between women who saw intervention and control ASHAs, percentages shown unless otherwise stated

|                                      | Control, percent of women reporting the two highest responses | Intervention, percent of women reporting the two highest responses |
|--------------------------------------|-------------------------------------------------------------|-----------------------------------------------------------------|
|                                      | N               | %        | N               | %        |
| Total                                | 541             | 100      | 536             | 100      |
| PCC score (mean, IQR)                | 29.19           | (27,35)  | 29.30           | (28,36)  |
| Percent who report that the ASHA introduced herself when she came (p=0.0000) | 470             | 86.9     | 517             | 96.5     |
| Percent who report that the ASHA treated her with respect (p=0.0000) | 481             | 88.9     | 520             | 97       |
| Percent who report that the ASHA wanted the best for her (p=0.0464) | 449             | 83       | 468             | 87.3     |
| Percent who report that the ASHA they were given enough information about their care in order to feel like they understood what was happening | 420             | 77.6     | 423             | 78.9     |
| Percent who report that the ASHA involved her in decisions | 409             | 75.6     | 410             | 76.5     |
| Percent who report that the ASHA | 442             | 81.7     | 436             | 81.3     |
Percent who report that the ASHA clearly explained things

|                |         |         |         |         |
|----------------|---------|---------|---------|---------|
|                | 450     | 83.2    | 450     | 84      |

Percent who report that the ASHA answer in a way they could understand when they had questions

|                |         |         |         |         |
|----------------|---------|---------|---------|---------|
|                | 398     | 73.6    | 380     | 70.9    |

Percent who report that the ASHA supported their anxieties and fears about family planning procedure or method choice

|                |         |         |         |         |
|----------------|---------|---------|---------|---------|
|                | 451     | 83.4    | 464     | 86.6    |

Percent who report that they felt they could ask the ASHA any questions they had

|                |         |         |         |         |
|----------------|---------|---------|---------|---------|
|                | 362     | 66.9    | 390     | 72.8    |

Percent who report that they felt they were allowed to have someone they wanted to stay with them during the visit (p=0.0366)

|                |         |         |         |         |
|----------------|---------|---------|---------|---------|
|                | 434     | 80.2    | 442     | 82.5    |

Percent who report that they felt the ASHA was available when they want to speak to her, had questions, or
- **Percent who report that they felt the ASHA took the best care of them**
  - 415 (76.7%), 400 (74.6%)

- **Percent who report that they felt the ASHA cared about them as a person**
  - 454 (83.9%), 447 (83.4%)

- **Percent who report that they had complete trust in the ASHA with regards to their care**
  - 433 (80%), 442 (82.5%)

***p<0.000, **p<0.01, *p<0.05

Table 3 shows that women who had higher person-centered family planning scores (rated their interaction as better) for their interaction with the ASHA had increased odds of taking up a family planning method (OR = 1.04***, p = 0.000). Receiving care from an intervention ASHA was not associated with PCFP scores. Receiving care from an intervention ASHA was also not associated with saying that the ASHA was involved the “right amount.” However, receiving care from an intervention ASHA was associated with increased odds of a woman saying that the ASHA had a “strong” or “extremely strong” preference for what method she chose (OR = 1.861,p = 0.000).
Table 3
Association between PCFP score and current family planning use, and the impact of the intervention on person-centered related outcomes, logistic regression models (Odds ratio, standard errors).

|                                | Currently using family planning | PCFP score | ASHA had a strong or extremely strong preference about Method | ASHA was Involved the right amount |
|--------------------------------|---------------------------------|------------|---------------------------------------------------------------|-----------------------------------|
| PCFP score                     | 1.041***                        |            |                                                               |                                   |
|                                | (0.00748)                       |            |                                                               |                                   |
| Intervention                   |                                 | 0.876      | 1.861***                                                      | 1.098                             |
|                                | (0.528)                         | (0.249)    |                                                               | (0.152)                           |
| Age (compared to 18–24)        |                                 |            |                                                               |                                   |
| 25–29                          | 0.911                           | 0.249**    | 1.234                                                        | 0.900                             |
|                                | (0.143)                         | (0.176)    |                                                               | (0.145)                           |
| 30–34                          | 1.093                           | 0.163**    | 1.146                                                        | 0.912                             |
|                                | (0.211)                         | (0.142)    |                                                               | (0.180)                           |
| Over 35                        | 0.468***                        | 0.0299***  | 0.466***                                                      | 0.484***                          |
|                                | (0.111)                         | (0.0312)   |                                                               | (0.126)                           |
| Education (compared to illiterate/none/primary) |                                |            |                                                               |                                   |
| Secondary/post secondary       | 1.148                           | 0.452      | 1.287                                                        | 0.702*                            |
|                                | (0.204)                         | (0.361)    |                                                               | (0.129)                           |
| College                        | 0.998                           | 0.0457***  | 1.246                                                        | 0.601***                          |
|                                | (0.153)                         | (0.0312)   |                                                               | (0.0964)                          |
| Still in school                | 1.001                           | 4.087      | 1.235                                                        | 0.975                             |
|                                | (0.255)                         | (4.712)    |                                                               | (0.251)                           |

*** p < 0.01, ** p < 0.05, * p < 0.1
|                                      | Currently using family planning | PCFP score | ASHA had a strong or extremely strong preference about Method | ASHA was involved the right amount |
|--------------------------------------|---------------------------------|------------|---------------------------------------------------------------|-----------------------------------|
| Occupation (homemaker compared to working) | 0.648 (0.176)                  | 3.062 (3.693) | 1.303 (0.354)                                                | 1.103 (0.326)                     |
| Caste (compared to Scheduled Caste/tribe) |                                 |            |                                                               |                                   |
| Other Backwards Caste                | 1.178 (0.192)                  | 3.356* (2.465) | 0.898 (0.146)                                                | 1.298 (0.224)                     |
| General                              | 1.154 (0.258)                  | 4.657 (4.667) | 0.981 (0.217)                                                | 1.437 (0.337)                     |
| Religion (Muslim vs Hindu)           | 0.907 (0.159)                  | 0.460 (0.370) | 1.017 (0.180)                                                | 0.896 (0.167)                     |
| Desire More Children                 | 1.123 (0.153)                  | 0.196*** (0.120) | 0.945 (0.127)                                                | 1.027 (0.144)                     |
| Constant                             | 0.479* (0.210)                 | 4.476e + 13*** (7.532e + 13) | 0.501* (0.189)                                               | 0.582 (0.235)                     |
| Observations                         | 1,056                          | 1,056       | 1,056                                                        | 1,056                             |
| R-squared                            |                                | 0.048       |                                                               |                                   |

*** p < 0.01, ** p < 0.05, * p < 0.1

**ASHA’s perspectives on the PCFP training from the qualitative interviews**

Part of the reason that we might not have seen an effect of the intervention on PCFP came to light in the qualitative interviews. Both intervention and control ASHAs already had deeply engrained PCFP values, including respect, support, communication, and maintaining privacy. Despite this, the intervention ASHAs still felt that there was value in the PCFP training, and described how it changed their perspective or practice related to various domains of PCFP.
One ASHA noted that the training changed the way she thought about her role as an ASHA. Afterwards, the ASHA not only started viewing herself as an agent of change, but also recognized that using disrespectful treatment can impact a beneficiary’s choice to pursue family planning care. In her interview she shared what she and some of her fellow ASHAs garnered from the training: “We have to first change our behavior (before) we can change others’. This is what we found different. Suppose if someone (behaved) badly with me, if (I) would have also done the same, then they wouldn’t have called us back” (Respondent 4).

Communication was another main topic in the PCFP training. One respondent shared how the PCFP training changed her perspective on respectful communication:

*I would get angry before, not now. I tell them, “Don’t get anything done, at least you can talk with me. If you are busy now, I shall come after an hour and talk to you.” When I talk to them softly, they understand me. And if she is busy, she will not listen to me. I should talk with her later. Then she will think about what I said. I should talk with the beneficiary according to her convenience* (Respondent 16).

Respondents directly and indirectly spoke about elements of effective communication throughout their interviews. ASHAs noted that when providing care, it was important to communicate in a way that beneficiaries will understand. As one ASHA shared about applying clear communication to family planning counselling: “We have to explain all thing(s) about family planning, in their language. If we explain (to) them in theoretical language, then they will understand nothing” (Respondent 5).

In the PCFP training, ASHAs learned about respecting autonomy when meeting with beneficiaries. One intervention respondent reflected on PCFP teachings: “We should listen to them [beneficiaries]. We should not impose our choice on them. We should not talk with them in harsh manner; not be angry with them. I should not say, ‘Get Multiload inserted.’ This is imposing. I should ask her, “What is (your) choice?” (Respondent 1) A second respondent reiterated this and went on to specify how she applies PCFP components like respect and autonomy when interacting with beneficiaries: “Suppose if they’re not ready to use methods like sterilization or IUCD for whatever maybe the reason. [I] have to try to understand their problem. I cannot force them to use such methods. We cannot pressure them” (Respondent 5).

One intervention respondent reflected on what she learned about transparency at the PCFP training: “I got to learn that we should tell both good and bad things to the beneficiaries. We should tell all the products of family planning and let her choose. We cannot force them” (Respondent 13).

Another ASHA reflected on applying the PCFP dimension ‘privacy’ in the home setting to help create space for beneficiary-led decision-making. She found confidentiality and privacy to be the most important aspects of PCFP training:

*Most important of all was keeping everything confidential. Suppose we have visited...a (beneficiary) and everyone in her family is sitting nearby. Suppose I need to ask her about the Multiload, however other*
family members don’t know about her thinking of getting Multiload done. Therefore, confidentiality becomes important here, so we will take her aside and discuss in private (Respondent 2).

Another ASHA talked about how the PCFP training directly impacted her privacy practices and changed her strategy for speaking with women about family planning: "We have to talk with her [the beneficiary] separately so that no one knows about it – secrecy. Before (the PCFP training) we started talking (with) others, so even if she wanted to take benefit, she could not" (Respondent 1).

Discussion

Our findings add to limited previous research that person-centered care is associated with family planning outcomes, namely, family planning uptake and continuation (14). This confirms that efforts to improve women’s experience receiving family planning are likely important not only for the experience itself, but actually lead to health behavior change. The next step—figuring out how to actually improve person-centered quality—may be more challenging, as we discuss below.

This evaluation did not find an impact of the add-on person-centered quality module to the family planning training offered by TCIHC on women’s overall PCFP scores. A few items in the PCPC scale were significantly associated with the intervention, including the ASHA introducing herself, and treating the respondent with respect. There are several possible explanations for this finding, the first of which is simply that a short training such as this is not effective for behavior change among community health workers and interventions that are longer or include multiple sessions over time, are more integrated into initial training, or target system level cultural change may be more appropriate.

Another set of explanations revolved around the items asked themselves. The items in the PCFP scale were validated in Uttar Pradesh, but in a different population (women seeking care in facilities) (15). Although we adapted the items and removed those we felt were not relevant, it is possible that different types of questions or topics would be more relevant to the ASHA-client interaction. The items held together in the factor analysis and loaded together in the same way, however, these might not be the most salient to women interacting with an ASHA. Conducting cognitive interviews to test these adapted items and exploring other possible domains that should have been covered would have helped to ascertain if this was the explanation.

A related explanation is that the items that were significantly associated with the intervention, most specifically respect, are actually a better summary indicator of what we define as PCFP than the entire list of indicators included. In fact, many other scholars who are researching “person-centered” care call this same construct “respectful care”, especially in the maternity literature, but increasingly in the family planning literature as well (19–22). Perhaps a simpler and more direct approach to obtain the same information about women's experiences could be to simply ask this singular question, as it encompasses multiple related constructs that may constitute “respect” to women.
With regard to the other two items that were significantly associated with the intervention, having the ASHA introduce herself might have stood out because this is a very easily obtainable, remembered and measured experience, and it was something that was specifically discussed in the PCFP training. Thus, it might have been more likely to have led to behavior change. This suggests that tangible examples of approaches to provide person-centered care that ASHAs could implement to improve experiences might be necessary to focus on and highlight in subsequent trainings. In summary, concrete behavior change points might be more amenable to intervention than vaguer concepts such as “showing the best care.”

One explanation for the lack of impact on a number of the items related to communication, choice of methods, and information is that these were covered in the training that ASHAs in both control and intervention areas received, as they related more to standard family planning counseling techniques and approaches. Thus, our added PCFP component might not have had an additional effect for intervention versus control ASHAs for these domains because these behaviors were addressed in both arms of the study. This suggests that our add-on training for PCFP could have focused more narrowly, which may have increased the impact on topics not covered in the other training. Unfortunately, we did not have the full, final standard training at the time of the development of our PCFP intervention, and could not make these adjustments prior to the evaluation. The findings in the qualitative interviews that both intervention and control of ASHAs were aware of and seemed to practice domains of PCFP, suggests that this content was not new or unique to our intervention, adding support to this hypothesis.

The qualitative findings do suggest that, despite the lack of impact on actual PCFP scores, ASHAs who were part of the intervention clearly absorbed the material, and felt that it led to changes in their thinking and behaviour. They also overwhelmingly liked the intervention and none mentioned feeling like it was material they already knew or did not need to know. This is promising in that it suggests that future, more focused interventions would likely be well received. However, it still begs the question of how to translate knowledge change into changes in behaviour.

We do find that women who saw intervention ASHAs were more likely to report that the provider had a strong or extremely strong preference for what method she choose. One of the main topics covered in the intervention was shared decision-making and the importance of not pressuring women to choose one specific method or another. However, it appears that women who saw intervention ASHAs felt that the ASHA had a strong preference, suggesting that this message was not incorporated into behaviour, and may have actually had the opposite effect. It is possible that women feeling pressured by the ASHA was an explanation for the lack of impact of the training on subsequent PCFP scores.

This study has numerous strengths, including matched control and intervention ASHAs, mixed methods, and an adequate sample size to test for significance. However, it also has several limitations, including those addressed above related to similarities between intervention and control training materials, and not having tested and validated the PCFP measure in a population of women seeking care for community health workers. Additionally, we only tested this intervention in one urban part of Uttar Pradesh (Varanasi), therefore results are not generalizable to rural or other parts of Uttar Pradesh or India. It is possible that...
women living in rural areas have a different type of relationship with their ASHA as they are likely to know the ASHA better given small village sizes and thus, PCFP may be less or more important.

**Conclusion**

Strengthening the case for the importance of person-centered care for family planning on family planning outcomes is important, and something we add to in this study. However, questions as to the best approach to do this, especially for community health workers, remain. We also provide evidence for the use of the PCFP scale among this different, often neglected, population of providers (community health workers). However, it is possible that other items are relevant in the context of home-centered care with community health workers who women most likely already know, and who provide other forms of care as well such as nutritional counseling. To conclude, community health workers are the first point of care for family planning provision in many countries and much more is needed to support this cadre, to help them provide high quality family planning care, and to understand how the nature of care provision differs between these and other health care providers.

**Abbreviations**

PCC  
Person-centered care  
PCFP  
Person-centered family planning  
TCIHC  
The Challenge Initiative for Health Cities  
ASHA  
Accredited Social Health Activist

**Declarations**

*Ethics approval and consent to participate:*

This study was approved by the Institutional Review Board at The University of California, San Francisco # .... All subjects have provided verbal or written consent to participate in study activities under this approval.

*Consent for publication:*

All identifying information has been removed for qualitative quotes or quantitative survey results contained within this publication, thus consent for publication is not applicable.

*Availability of data and materials:*
The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Competing Interests:

The authors declare that they have no competing interests.

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Authors contributions:

NDS, KG, and KPR designed the intervention. NDS and KG designed the survey and qualitative tool, with support from CM. ABS and KPR led quantitative data collection. CM led qualitative data collection. NDS conducted all quantitative analysis; NDS, KG and CM conducted qualitative data analysis. All authors contributed to, read and approved the final manuscript.

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