An Exploratory, mixed-method study of family planning self-care in Nepal, Niger, and Uganda: DATA DESCRIPTION DOCUMENT

1 INTRODUCTION

The World Health Organization (WHO) defines self-care as "the ability of individuals, families and communities to promote health, prevent disease, maintain health, and to cope with illness and disability with or without the support of a healthcare provider" (1). This definition encompasses self-awareness, self-management, and self-testing behaviors (2, 3). Self-care can lower barriers to health care access and help to improve health equity underserved populations, like youth (7). Despite many individual self-care behaviors having been studied in various contexts (4-6), the overall acceptability and use of SRH self-care is an emerging area of inquiry. The WHO self-care guideline emphasizes evidence gaps in low- and middle-income countries (LMICs) including values and preferences for self-care the influence of gender dynamics.

In the context of self-care, health system involvement includes support from health workers as needed, informational materials, and reliable access to supplies (8). However, with self-care the burden on health care providers is reduced, which may improve health systems efficiency in crisis contexts, during public health emergencies, or where health system capacity is low, including many LMICs (1). Self-care is envisioned as an integral component of universal health coverage (UHC), with includes "a people-centered approach to health that views people as active decision-makers in their own health" (1). Understanding the magnitude of sexual and reproductive self-care, when people prefer to use it, and how it fits in with provider-delivered services is necessary to help health systems encourage its appropriate use. To gain a broad understanding of self-care across diverse LMIC settings, we will conduct a study of self-care behaviors, acceptability, and readiness in Nepal, Niger, and Uganda. National stakeholders will gain understanding of how FP self-care approaches are being used and the preferences of their populations, to promote the appropriate use of self-care interventions.

Operational Definition of FP and SRH Self-Care

This study operationalizes self-care as accessing SRH information and products without visiting a health care facility or meeting with a community health worker (CHW) in person. We consider self-care to include clients accessing FP and SRH services through alternate sources than the formal health care system, including pharmacies, drug shop, direct to consumer services, digital tools, traditional providers, friends and family members, and others. In the context of FP, this includes

methods purchased or obtained from the channels listed without a provider consultation, including method refills.

2 STUDY AIM AND OBJECTIVES

The goal of this study is to generate evidence on acceptability of and experiences with self-care in family planning amongst women, men, and providers that can inform the development or refinement of self-care guidelines in Nepal, Niger, and Uganda.

The following objectives apply to each of the three countries.

1. To explore acceptability of self-care among women and men
2. To describe self-care behaviors and preferences among women and men
3. To examine provider perspectives on self-care

3 METHODOLOGICAL INFORMATION

3.1 Study design

This is a cross-sectional concurrent mixed-method study in Niger, Nepal and Uganda. In each country, the study includes surveys with 500 women and 250 men and in-depth interviews with a separate sample of 36 women, 20 men, 12 providers, and 12 community leaders (Community Leaders in Niger only). Women and men were randomly selected using a stratified two-stage cluster sampling design, with selection of primary sampling units (PSUs) at first stage and selection of households at second stage. In each country, the sample was stratified by geographic area (region or district or province) and urban/rural location. There were 10 strata in Nepal, 4 in Niger, and 6 in Uganda. PSUs consisted of enumeration areas in Niger and Uganda, and census wards in Nepal. The final sample consisted of all eligible female residents in sampled households and all eligible male residents in 50% of households selected for the female sample. The original sampling plan was adjusted for some EAs in Niger and Uganda to address challenges encountered during study implementation. The sampling adjustments and their implications for sampling weight estimations are discussed in the "Limitations" section.

3.2 Study population

The study population includes women of reproductive age (15-49 years), adult men (18 and older), FP providers, and community leaders. However, minor adolescent girls (aged 15-17 in Nepal and Uganda, and aged 15-20 in Niger) were only included if they are legally declared as emancipated. The table below shows detailed eligibility criteria for the study population.

Women	Men	Providers	Community leaders (Niger only)
● Emancipated minors (aged 15-17)[1] or 18 – 49 years old ● Married, living together like a married couple, or having been in a romantic /sexual relationship in the past three months if not married[2] ● Currently using a modern FP method other than sterilization (themselves or their partner, as applicable), OR having an unmet need for FP[3] ● Has accepted to be audio-recorded during in-depth interviews (for IDI participants only)	● 18+ years, ● Married, living together like a married couple, or being sexually active if not married. ● Not sterilized (themselves or their partner, as applicable) ● Has accepted to be audio-recorded during in-depth interviews (for IDI participants only)	● 18+ years ● Currently providing FP methods ● Operating in the study's catchment area ● At least one year of practice ● Has accepted to be audio-recorded during in-depth interviews	● 18+ years ● Be active in a major community organization ● Have a history of previous participation in family planning activities in their community

[1] Niger defines an emancipated minor as anyone below the age of 21 who is married, has a child, or has been legally declared an "emancipated minor."
Uganda defines emancipated minors as "individuals below the age of majority who are pregnant, married, have a child, or cater for their own livelihood. The screeners used will ensure that those below the age of consent are emancipated minors; pregnant participants of any age are not qualified for the study.
Nepal's law does not allow minors' emancipation.

[2] Romantic/sexual relationship is defined as having a boyfriend or a casual male partner for women. For men, this criterion is defined as having a girlfriend or a casual female partner.

[3] Unmet need is defined here as women who are not pregnant, are not currently using a modern contraceptive method and do not wish to become pregnant i) at all or ii) within the next two years or 3) do not know when or if they want another child.

These criteria aimed to cover women who most likely need FP services and men whose orientation toward women's self-care decisions and behaviors can be assessed as well as their views of their own self-care. In addition, information on household characteristics was collected from the household head or from another adult residing in the household who could provide the relevant information using a short questionnaire.

3.3 Sampling plans and Participants' recruitment procedure

For the survey, women and men were sampled using probability-based approaches, while the selection of providers and community leaders used a purposive sampling approach.

3.3.1 Women and men recruitment

The women's and men's samples were selected using a stratified multi-stage clustered sampling design in three steps:

Enumeration areas (EAs): we conducted data collection in primary sampling units (PSUs). PSUs consisted of EAs in Niger and Uganda. In Nepal, PSUs were census wards, which are clusters of EAs. Using the most recent census data for each country's targeted areas, PSUs were stratified by province/district and rural and urban (in the case of Nepal, urban, rural lowland and rural highland). The selection of PSUs within each stratum was done using selection with probabilities proportional to size (PPS), with the number of number of households as a proxy measure of size for the PPS.

Households: A list of residential households in selected EAs was obtained from the household mapping and listing process. A random sample of the already predetermined number of households per EA was then obtained through use of random sampling via a random number generator app.

Women and men: Research assistants (RAs) in each country visited the selected households to enumerate members of the household and check them for compliance with eligibility criteria. All eligible women in the households selected for the survey with women were invited to participate in the study. Similarly, all eligible men in the 50% of households selected for the survey were invited to participate in the study. Once the screening of household residents was completed, the field team recruited a female and a co-resident male for the survey or for an IDI. The actual sample size was as follows:

	Nepal	Niger	Uganda
EAs selected	25	25	28
Households selected	600	1,406	784
Women surveyed	430	510	374
Men surveyed	244	357	222
Women – IDIs	35	30	36
Men – IDIs	19	13	20

3.3.2 Providers and Community leaders' recruitment

A purposive sample of FP providers from both the public and private sectors was selected in each country. Eligible facility-based providers, CHWs, pharmacists and drug shops operators were identified through local health officials or iNGO operating in specific health sectors. In Niger only, we also selected a purposive sample of community leaders in the selected EAs. Recruitment of community leaders was based on their interest and availability. In each country, the number of providers and community leaders interviewed was as follows:

- Nepal: 12 providers
- Niger: 11 providers, 11 community leaders
- Uganda: 12 providers

3.4 Sampling weights calculation

The final sampling weight is the inverse combined probability of household selection and participants selection in each stratum. Although the sampling strategy strived to include all eligible participants residing in the sampled households, there were some non-responses due to refusals, absence, or unavailability of some households' residents. Accounting for the probability of participants selection allows to adjust the weights for individual level non-response. In households with 100% response rate, participants probability will be equal to 1.

The weight will be calculated as follows:

$$w = \frac{1}{\pi}$$

Where:

w is the sampling weight in the stratum

π is the combined probability of selection for households and individuals within each selected household. This term equals the prob. of households' selection × prob. of participants selection. An additional component is included if segmentation is done for a selected PSU.

The sampling probabilities for each selected household per stratum will be as follows:

Sampling probability for households	1st stage	Segmentation	2nd stage	Final
π_h =	$a \times \frac{MOS_\alpha}{\sum MOS_\alpha}$	$\times \frac{1}{S_\alpha}$	$\times \frac{b_\alpha}{N_\alpha}$	$= \frac{a \times b_\alpha \times MOS_\alpha}{N_\alpha \times S_\alpha \times \sum MOS_\alpha}$

a = Number of PSU to be selected in the stratum (based on proportional allocation across strata)

MOS_α = Measure of size of α-the PSU. Estimated number of households as provided by the sampling frame of PSUs

S_α = Number of segments in the α-th PSU sampled (if segmentation is conducted)

b_α = Number of sampled households in the α-th PSU or in the selected segment of the α-th PSU (as a simple adjustment for non-response at the household level, we used actual number of households with a completed survey)

N_α = Total number of households in the α-th PSU based on the updated household listings.

The above formula assumed that the probability of selection of eligible individual within a selected household was equal to 1 as we planned to recruit all eligible. However, we applied a simple adjustment for non-response at the household level to account for situations where we would not be able to recruit all eligible participants at the household level. The adjustment assumed that respondents within a household represented all eligible participants within that household. The sampling probabilities for each recruited participant in each selected household in the stratum was as follows:

Sampling probability for participants:

$$\pi_i = \frac{b_\mu}{N_\mu}$$

Where:

b_μ = Number of participants eligible for inclusion recruited in the μ-th household

N_μ = Total number of participants eligible for inclusion in the μ-th household

The combined probability of participants' selection equals:

$$\pi = \frac{a \times b_{\alpha} \times MOS_{\alpha} \times b_{\mu}}{N_{\alpha} \times S_{\alpha} \times \sum MOS_{\alpha} \times N_{\mu}}$$

Since the sample size was inflated for non-response, no replacements of households/participants were done in cases of non-response during data collection. All the households with respondents were used to represent the populations in each PSU. Sampling weights were estimated for each stratum and separately for the female and male populations.

4 DATA COLLECTION

Data collection for all 3 countries took place between May and July 2022 in the following provinces, regions, or districts:

- Nepal: provinces 1 and 5
- Niger: regions of Niamey and Zinder
- Uganda: districts of Buyende in the Busoga subregion, Greater Mbale in the Elgon subregion, and Mukono in the North-Buganda subregion

Data were collected by trained research assistants during in-person interviews. Survey data were entered at the time of the interview onto tablets in the ODK system using the **PMA Collect App** and all qualitative interviews were digitally recorded.

5 DATA MANAGEMENT

Survey data collected and entered in the field were transferred to a secure ODK server when a wireless connection was available. Data were cleaned in Stata 16 (Niger) and Stata 17 (Nepal and Uganda). The recorded interviews were transcribed by Research Assistants (RAs) and translated from the original language to English (Nepal, Uganda) and French (Niger) by professional translators. The local co-investigator or designated representative checked transcripts for completeness and quality prior to submitting them to the study team for review.

5.1 Files Information

The survey data was separated into 6 datasets (2 per country) for analysis:

N°	Filename	Short Description
1.	NP_SC_WOMEN_Data.csv	Individual female data for Nepal, combined with household and couple data. Each row represents a potentially eligible woman. The variable ***IQwomen_eligible*** takes the value 1 for women who are actually eligible and for whom individuals' data are available.

N°	Filename	Short Description
2.	NP_SC_MEN_Data.csv	Individual male data for Nepal, combined with household and couple data. Each row represents a potentially eligible man. The variable ***IQmen_eligible*** takes the value 1 for men who are actually eligible and for whom individuals' data are available.
3.	NE_SC_WOMEN_Data.csv	Individual female data for Niger, combined with household and couple data. Each row represents a potentially eligible woman. The variable ***IQwomen_eligible*** takes the value 1 for women who are actually eligible and for whom individuals' data are available.
4.	NE_SC_MEN_Data.csv	Individual male data for Niger, combined with household and couple data. Each row represents a potentially eligible man. The variable ***IQmen_eligible*** takes the value 1 for men who are actually eligible and for whom individuals' data are available.
5.	UG_SC_WOMEN_Data.csv	Individual female data for Uganda, combined with household and couple data. Each row represents a potentially eligible woman. The variable ***IQwomen_eligible*** takes the value 1 for women who are actually eligible and for whom individuals' data are available.
6.	UG_SC_MEN_Data.csv	Individual male data for Uganda, combined with household and couple data. Each row represents a potentially eligible man. The variable ***IQmen_eligible*** takes the value 1 for men who are actually eligible and for whom individuals' data are available.

5.2 Variable Naming Conventions

Variables are named based on the question number, with the prefix of either "men_q" or "women_q" to represent individual questionnaire types for male or female respondents, respectively. For instance, the 101st question in the female individual questionnaire is named "women_q101" in the databases for each of the three countries. Variables not following this nomenclature correspond to:

- Household and couple questionnaire variables.
- IDs variables (HH_IDs, metainstanceid)
- Variables not included in the questionnaires but providing essential information for analysis, such as sampling weight and participant eligibility.

Non-questionnaire variables present in the data are described in the section "DEFINITION OF VARIABLES".

5.3 Merging and Transforming Datasets for Analysis

Initially, we matched individual data for males and females in each country with corresponding household data. Individual data are linked to household data through unique identifiers for each household, represented by the variable ***HH_IDs***. Women and men who belong to the same household carry the same value for the HH_IDs variable in the same country. Depending on the needs of the analysis, it is possible to append women's and men's data for the same country, or for different countries. However, please note that variable categories may vary between databases when performing this type of data manipulation. It is important to carefully examine the codebook associated with each database before combining.

5.4 Data deidentification and Missing Data

We implemented the following techniques to remove direct or indirect identifying information from the dataset.

- **Irrelevant Information Deletion**: In adherence to the R4S program's data management plan, we systematically removed identifiable data elements, such as names, dates (including birthdates and interview dates), device identifiers, serial numbers, and URLs.
- **Geographic Unit Encoding**: To protect geographical information, we encoded units below the county level with anonymous IDs, preserving data utility for analysis without revealing specific locations.
- **Household Identifier Replacement**: To further anonymize the dataset, we substituted zone, structure, and household numbers with randomly generated identifiers.

There were no issues with missing data, since all questions asked to participants were required. However, not all questions were asked to all respondents. Those skip patterns are shown in the data collection forms.

6 DEFINITION OF VARIABLES

Unique identifiers	
metainstanceid	Participant identification number
Non-questionnaire variables	
HH_IDs	Household ID
resid_status	Residential status 1 = Urban 2 = Rural

women_screen_out	Variable indicating whether a woman is eligible for the study after answering the eligibility questions. 0 = woman not screened out (eligible) 1 = woman screened out for the study (non-eligible)
women_proposed_idi	Does the data collector want to recruit a woman for the IDI if she is eligible? 1 = Yes 2 = No
women_idi_consent	If the data collector wanted to recruit a woman who was eligible for the IDI, did the woman give her consent to take part in the qualitative interview? 1 = Yes 2 = No
IQwomen_eligible	Variable that takes the value 1 to indicate that a woman is eligible and completed the quantitative survey, not that she was recruited for the qualitative interview. **Creation:** `IQwomen_eligible = 1 if women_proposed_idi == 2 or women_idi_consent == 2`
emanHQ	Is the woman an emancipated minor? 1 = Yes 0 = No
men_screen_out	Variable indicating whether a man is eligible for the study after answering the eligibility questions. 0 = man not screened out (eligible) 1 = man screened out for the study (non-eligible)
men_proposed_idi	Does the data collector want to recruit a man for the IDI if he is eligible? 1 = Yes 2 = No
men_idi_consent	If the data collector wanted to recruit a man who was eligible for the IDI, did the man give his consent to take part in the qualitative interview? 1 = Yes 2 = No
IQmen_eligible	Variable that takes the value 1 to indicate that a man is eligible and completed the quantitative survey, not that he was recruited for the qualitative interview.

	Creation: IQwomen_eligible = 1 if women_proposed_idi == 2 or women_idi_consent == 2
IRQquest_result	Questionnaire result
Sampling variables	
stratid	Stratum ID
EA	Primary Sampling Unit
samp_prob_females	Woman sampling selection probability
samp_weight_females	Woman sampling weight
samp_prob_males	Man sampling selection probability
samp_weight_males	Man sampling weight
Key outcomes variables (not in the databases**)**	
reprod_empwt	Reproductive empowerment score (**only women**) **Creation:** All items of the reproductive empowerment scale (i.e., Q701-Q720), except items 13 and 14 (Q713 and 714), are scored on a Likert scale i.e., Strongly disagree (score 1), Disagree (2), Agree (3) and Strongly agree (4). **The scoring of item numbers 13 and 14 depends on the culture and context where the scale will be implemented.** In contexts where joint decision making is considered most empowering and decision making by non-partners is considered least empowering, one option for scoring is 4=My partner and myself jointly; 3=Myself; 2=My partner; 1=All other options. The score of reproductive empowerment among women will be generated by summing the reproductive empowerment scale items (Q701-Q720) and then dividing the total score by the number of questions answered by the number of items (20)
self_eff	Self-efficacy score (**only women**) **Creation:** The score of self-efficacy among women will be generated by averaging the questions Q801-Q806. These questions are scored from 0 (cannot do at all) to 10 (highly certain can do). The self-efficacy score will be generated by summing the numerical responses to each scale item (whole numbers from 0 to 10) and then dividing the total score by the number of items in the scale.

fert_awrn	Fertility awareness score (**women and men**) **Creation:** • Recoding (women) o Q204: 2 = 1; all else = 0 o Q205: 2 = 1; all else = 0 o Q206: 1 = 1; all else = 0 o Q207: 2 = 1; all else = 0 o Q208: 4 = 1; all else = 0 o Q209: 2 = 1; all else = 0 • Recoding (men) o Q208: 2 = 1; all else = 0 o Q209: 2 = 1; all else = 0 o Q210: 1 = 1; all else = 0 o Q211: 2 = 1; all else = 0 o Q212: 4 = 1; all else = 0 o Q213: 2 = 1; all else = 0 Fertility awareness score: sum across all the recoded variables (Q204-209 for women and Q208-213 for men)

7 LIMITATIONS

This study presents limitations that could potentially impact the validity and reliability of the data. The cross-sectional design of this study provides limited insight related to the dynamic nature of self-care. Indeed, women and men could potentially adopt various self-care behaviors over the life course based on circumstances. Although we attempted to address this limitation by asking retrospective questions, self-care dynamics will not be accurately captured in this study. Moreover, the use of retrospective questions in this inquiry was limited by recall bias, especially for events that occurred more than three months before the interview.

The sampling design poses an additional limitation given that the study population may not adequately represent the general population in the three countries. Sample size calculations are intended to make the sample more robust but are not intended to support statistical generalizability and are largely descriptive. Further challenges to the study's external validity concern our approach to recruiting women and men who are not married or in a relationship in the three countries. Self-care perceptions, attitudes, and behaviors might be shaped by sexual activity within these populations. However, since asking unmarried individuals about their sexual activity is sensitive in the local contexts, we used romantic or sexual partnership status as a proxy for sexual activity to minimize the risk of social harm. Although this approach is not ideal, it might better reflect sexual activity in this population since we captured sexually active individuals who

might feel uncomfortable answering direct questions about sexual behaviors during a survey. However, our final sample also includes abstinent individuals who are not focus on this study.

On the other hand, the surveys in Niger and Uganda experienced field difficulties, resulting in changes in the number of households sampled and interviewed.

In Niger

After several days of collecting data and recording the number of eligible women and men, we discovered that the target sample size would not be attained. In the original calculations, we assumed that at least one eligible participant would be available in each household. However, the field data showed that only 0.5 participants per household were eligible. As a result, we revised the number of households to be chosen to approximate the final target sample size. The updated sample of households comprised a total of **1,320** households, which exceeded the initially planned **600**. Due to delays in relaying the updated numbers to the field teams, some teams visited a slightly higher number of households, resulting in a final selection of **1,406** households. Sampling weights calculation were adjusted to account for the new number of households selected in each EA, but calculation followed the same formulas as above since the selection method did not change with the additional selection and sampling weights were calculated based on completed surveys.

In Uganda

During data collection in Uganda, mapping errors occurred in two Primary Sampling Units (PSUs), Kagala A and Nenyodde B, due to changes in physical features like church relocations since the 2014 national population census. In Kagala A, the initial mapping identified 328 households, but after correction, it turned out to have 434 households. The adjusted selection probabilities were calculated based on the originally mapped PSU to account for this increase. In Nenyodde B, households from neighboring areas (Nenyodde A, and C) were mistakenly included, and only 5 households out of the 25 sampled were within its actual boundaries. The probability calculations for selecting households for interviews were adjusted, considering the larger Nenyodde area encompassing Nenyodde A, B, and C. This resulted in adjusted probabilities for female and male interviews in line with the revised PSU boundaries.

As mentioned above, the calculation of sampling weights has been modified in both countries to reflect changes made to the sampling design during the survey implementation. It is our view that the changes made to the computation of sampling weights allow the results to be generalized to each Niger region and Uganda county.

8 REFERENCES

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