7

PHOTO BY HAFM JANSEN

Developing a Sampling Strategy

Topics covered in this chapter:

Sampling considerations in qualitative studies
Sampling considerations in quantitative research surveys

One cannot overemphasize the importance of developing an appropriate sample for the type of research design selected. Although qualitative and quantitative research use different approaches for selecting the individuals or groups to be studied, in all studies it is crucial to plan the sampling strategy carefully. Particularly in the case of population-based surveys, a poorly selected sample may harm the credibility of a study, even if the rest of the study is well executed.

Qualitative studies generally focus in depth on a relatively small number of cases selected **purposefully**. By contrast, quantitative methods typically depend on larger samples selected **randomly**. These tendencies evolve from the underlying purpose of sampling in the two traditions of inquiry. In quantitative research, the goal of sampling is to maximize how **representative** the sample is so as to be able to generalize findings from the sample to a larger population. In qualitative inquiry, the goal is to select for information richness so as to illuminate the questions under study.[1]

This chapter discusses the major issues that should be taken into account when designing a sample for qualitative or quantitative research. It also gives examples of how different strategies have been used to fit the specific needs and circumstances of research projects.

SAMPLING CONSIDERATIONS IN QUALITATIVE STUDIES

There are no hard and fast rules for sample sizes in qualitative research. As Hudelson points out, "The sample size will depend on the purpose of the research, the specific research questions to be addressed, what will be useful, what will have credibility, and what can be done with available time and resources."[2]

In qualitative sampling, the selection of respondents usually continues until the point of **redundancy** (saturation). This means that when new interviews no longer yield new information and all potential sources of variation have been adequately explored, sampling may stop. For most qualitative studies, 10 to 30 interviews and/or 4 to 8 focus groups will suffice. Table 7.1 summarizes a number of

TABLE 7.1 TYPES OF SAMPLING STRATEGIES FOR QUALITATIVE STUDIES

Type of Sampling	*Purpose*	*Example*
Intensity sampling	To provide rich information from a few select cases that manifest the phenomenon intensely (but are not extreme cases).	Interviewing survivors of date rape to learn more about how coerced sex affects women's sexuality.
Deviant case sampling	To learn from highly unusual manifestations of the phenomenon in question.	Interviewing men who do not beat their wives in a culture where wife abuse is culturally accepted.
Stratified purposeful sampling	To illustrate characteristics of particular subgroups of interest; to facilitate comparisons.	Interviewing different types of service providers (police, social workers, doctors, clergy) to compare their attitudes toward and treatment of abuse victims.
Snowball or chain sampling (Locate one or two key individuals, and then ask them to name other likely informants.)	To facilitate the identification of hard-to-find cases.	Finding commercial sex workers to interview about experiences of childhood sexual abuse by getting cases referred through friendship networks.
Maximum variation sampling (Purposely select a wide range of variation on dimensions of interest.)	To document diverse variations; can help to identify common patterns that cut across variations.	Researching variations in norms about the acceptability of wife beating by conducting focus groups among different sub groups: young urban women, old urban women, young rural men, old rural men, women who have been abused, women who have not experienced abuse.
Convenience sampling (Select whoever is easiest, closest, etc.)	To save time, money, and effort. Information collected generally has very low credibility.	Forming focus groups based on who is available that day at the local community center, rather than according to clear criteria.
Criterion sampling	To investigate in depth a particular "type" of case; identify all sources of variation.	Specifically interviewing only abused women who have left their partners within the last year in order to better understand the variety of factors that spur women to leave.

(From Patton, 1990.[3])

different approaches to qualitative sampling.

In qualitative research, the sampling strategy should be selected to help elucidate the question at hand. For example, researchers with the Nicaraguan organization *Puntos de Encuentro* embarked on a project to collect information useful for designing a national media campaign that called on men to renounce violence in their intimate relationships. They wanted to understand the beliefs and attitudes that existed in Nicaraguan culture that supported violent behavior toward women. More importantly, they wanted to know if there were any "benefits" of nonviolence that could be promoted to encourage men to reconsider their behavior (Box 5.6).

Rather than concentrating on collecting

information on the norms and attitudes of "typical" Nicaraguan men, the researchers decided to use "deviant case" sampling and concentrate on interviewing men who had already had a reputation for being nonviolent and renouncing machismo.[4] They were interested in finding out from these men what benefits, if any, they perceived from this choice, and what life-course events, influences, or individuals pushed them in this direction. The goal was to investigate what aspirations and life experiences help create "healthy" intimate partnerships. The findings were used to design an information campaign aimed at recruiting more men to a nonviolent lifestyle.

PHOTO BY HAFM JANSEN

SAMPLING CONSIDERATIONS IN QUANTITATIVE RESEARCH SURVEYS

In contrast to qualitative research, which generally uses nonprobability or "purposive" sampling, quantitative research relies on random sampling of informants. A probability or "representative" sample is a group of informants selected from the population in such a way that the results may be generalized to the whole population.

When a sample is referred to as **random**, it means that specific techniques have been used to ensure that every individual who meets certain eligibility criteria has an equal probability of being included in the study. Failure to adhere to these techniques can introduce error or **bias** into the sample, which may lessen the validity of the study. For example, if a household survey on violence only conducted interviews during the day, then the respondents most likely to be included in the study would be women who work at home, and women who worked outside the home would be less likely to be interviewed. Since women working outside the home may have different experiences with violence, the study results would be biased towards women who work at home. One way to reduce this particular bias would be to return to homes at night or on weekends to increase the likelihood of reaching all women.

*A probability or **representative** sample is a group of informants selected from the population in such a way that the results may be generalized to the whole population.*

The way in which the sample is chosen affects its **generalizability**, or the extent to which the situation found among a particular sample at a particular time can be applied more generally. There are many techniques for sampling, each with its own tradeoffs in terms of cost, effort, and potential to generate statistically significant results. Some strategies, such as simple random sampling, may not be feasible where there is little information available on the population under study. The following is a brief

*When a sample is referred to as **random**, it means that specific statistical techniques have been used to ensure that every individual who meets certain eligibility criteria has an equal probability of being included in the study.*

description of the more common sampling techniques used.

Many people underestimate the challenge of obtaining a well-designed sample. Mistakes are often made due to confusion over the meaning of the term **random selection**. A random selection does not mean that participants are simply selected in no particular order. In fact, the techniques for obtaining a truly random sample are quite complex, and inexperienced researchers should consult an expert in sampling before proceeding. A well thought-out and tested questionnaire used on a poorly designed sample will still render meaningless results.

Random samples are often confused with convenience or quota samples. A **convenience sample** is when informants are selected according to who is available, in no particular order. In a **quota sample** a fixed number of informants of a certain type are selected. Neither strategy will result in a random sample appropriate for survey research.

Simple random sampling

This sampling technique involves selection at random from a list of the population, known as the **sampling frame**. If properly conducted, it ensures that each person has an **equal** and **independent** chance of being included in the sample. Independence in this case means that the selection of any one individual in no way influences the selection of any other. The word "simple" does not mean that this method is any easier, but rather that steps are taken to ensure that only chance influences the selection of respondents. Random selection can be achieved using a lottery method, random number tables (found in many statistical books), or a computer program such as Epi Info. To avoid bias, it is very important to include in the sampling frame only individuals who are eligible to be interviewed by criteria such as age, sex, or residence. By the same token, if certain individuals are left off the original list due to an outdated census that does not include individuals who have recently moved into the population area, then these omissions could bias the results, particularly if migration is the result of crises such as war, natural disasters, or economic collapse. In these cases, you will need to update the sampling list.

PHOTO BY HAFM JANSEN

Systematic sampling

In random sampling, each individual or household is chosen randomly. In contrast, systematic sampling starts at a random point in the sampling frame, and every nth person is chosen. For example, if you want a sample of 100 women from a sampling frame of 5,000 women, then you would randomly select a number between one and 50 to start off the sequence, and then select every fiftieth woman thereafter. Both random and systematic sampling require a full list of the population in order to make a selection. It is also important to know how the list itself was made, and whether individuals are placed randomly or in some kind of order. If individuals from the same household or with certain characteristics are grouped together, this may result in a biased sample in which individuals with these characteristics are either overrepresented or underrepresented.

PHOTO BY HAFM JANSEN

A street map used for locating households in the Japan WHO study.

Stratified sampling

Stratified sampling may be used together with either simple random sampling or systematic sampling. This ensures that the sample is as close as possible to the study population with regard to certain characteristics, such as age, sex, ethnicity, or socioeconomic status. In this case, the study population is classified into **strata**, or subgroups, and then individuals are randomly selected from each stratum. Because stratification involves additional effort, it only makes sense if the characteristic being stratified is related to the outcome under study. For the purpose of analysis it is easier if the number of individuals selected from each stratum is proportional to their actual distribution in the population. (See Box 7.1 on self-weighting samples.) For example, in a sample stratified according to urban/rural residence, the proportion of rural women in the sample would be the same as the proportion of rural women in the study population.

A **weighted stratified sample** may be preferable when there are some groups which are proportionately small in the population, but which are relevant for the purpose of the study, such as individuals from a certain geographical region or ethnic group. Ensuring that these groups are adequately represented might require an inordinately large sample size using simple random sampling techniques. In this case, it may be appropriate to oversample, or to select a disproportionately large number of respondents from this stratum. This results in a weighted sample that will have to be taken into account in the analysis process.

Multistage and cluster sampling

Multistage sampling is often used for drawing samples from very large populations covering a large geographical area. It involves selecting the sample in stages, or taking samples from samples. The population is first divided into naturally occurring **clusters** (such as villages or neighborhoods). Then a random sample of these clusters is drawn for the survey. This is the first stage of sampling. The second stage may involve either selecting all of the sampling units (respondents, households) in the selected clusters, or selecting a group of sampling units from within the clusters. Sometimes more than two stages are required. Thus, one might randomly choose districts within a province, and then randomly select villages from the selected districts as the second stage. Individual respondents would be selected from the clusters as a third stage. At each stage, simple random, systematic, or stratified techniques might be used. It is advisable to consult a statistician if you are considering a multistage sampling scheme.

The advantage of multistage sampling is that a sampling frame (e.g., a list of households) is only needed for the selected clusters (villages) rather than for the whole study population. Also, the logistics will be easier because the sample is restricted to the selected clusters and need not cover the whole study area. An example of a multistage sampling strategy in Peru is described in Box 7.3.

The disadvantages of multistage sampling are that the sample size needs to be substantially larger than if the sample was

BOX 7.1 SELF-WEIGHTING IN CLUSTER SAMPLES

The way in which the sample is chosen greatly influences the usefulness of the resulting estimates. Suppose that there is a district with only two villages:

- Village A has 4,000 women, of which 800 (20 percent) have been abused.
- Village B has 800 women, of which 40 (5 percent) have been abused.

The true prevalence of abuse in this district would be calculated as follows:

$$\frac{\text{Total cases of violence}}{\text{Total number of women}} = \frac{(800 + 40) \times 100}{(4000 + 800)} = 17.5 \text{ percent}$$

However, if we decided to determine the prevalence of abuse in this district based on a random sample of 100 women from each village, we would find the following:

- 20 out of 100 women in Village A reporting abuse.
- 5 out of 100 women in Village B reporting abuse.

Combining these two figures we would find that 25 out of the 200 women interviewed were abused, which would give us a prevalence of 12.5 percent.

What has happened here?

Our sampling procedure led us to an underestimated prevalence because the number of informants selected from each village was not in proportion to the relative size of each village. Assuming that we knew the relative sizes of the villages, we could perform a weighted analysis where the results from Village A would count five times as much as those from Village B. However, it is usually preferable to obtain a self-weighting sample. One way to do this would be to select five times more respondents from Village A than Village B. Another approach is to select the villages with probability proportional to size. This means that if you have a list of villages, a large village like Village A would be five times more likely to be selected for the sample than a village the size of Village B. After the villages were selected, you could then to select an equal number of respondents from each village. (For an example of how a self-weighting sample was obtained in Peru, see Box 7.3.)

(From Morison, 2000.[5])

selected by simple random sampling. Also, it can be more complicated to get a self-weighting sample. Another difficulty with multistage sampling can be defining clusters if the study area is, for example, a large urban area. Sometimes these have already been defined for previous censuses or surveys, but otherwise they have to be created from a map or based on some other criteria such as school or health center catchment areas.

How large a sample do you need?

The ideal sample size for a survey depends on several factors:

- **How sure do you want to be of your conclusions?** Larger sample size generally increases the precision of the results, or the confidence with which one can say that they represent a reliable measure of the phenomena under study.

- **What are the characteristics of the study population?** The more variability there is in the population, the larger the sample size needed.

- **How common is the phenomenon under study?** If any of the conditions you want to measure in your study are very rare, for example, infant mortality or maternal mortality, then you will need a very large sample size.

- **What is the purpose of the research?** The sample size calculation will also depend on whether you simply want to measure the prevalence of a condition in a population or whether you want to measure an expected difference between two groups. Programs such as Epi Info contain two different formulas for these two different approaches.

- **What kind of statistical analysis will you use?** This underscores the need to consider how you are going to analyze your data from the very beginning. The sample size must be large enough to provide for desired levels of accuracy in estimates of prevalence, and to test for the significance of differences between different variables.

- **What kind of sampling strategy will be used?** Commonly used sample size formulae and computer packages assume you are using simple random sampling. If you plan to use multistage or cluster sampling, you may need to increase your sample size to achieve the precision you require. Consider asking a statistician for help in deciding by how much the sample size needs to be increased.

It is better to collect excellent data from fewer respondents than to collect data of dubious validity and reliability from many respondents. Statistical computer packages or mathematical formulas can be used to determine sample size for a study. Box 7.2 presents a table produced by Epi Info's STATCALC program for ideal sample size calculations. This program is available online at http://www.cdc.gov/epiinfo.

If your proposed analysis calls for studying particular subgroups of your sample, the sample size will need to be expanded accordingly. For example, to determine the prevalence of violence, you may need a sample of only 300 women. But if you want to know whether the prevalence of violence varies by age, education, or socioeconomic group, then you will need a sample size sufficiently large to allow for comparisons among these groups.

The initial calculation was made based on a simple random sample from a study population of 100,000 women, where it was assumed that approximately 30 percent of women have experienced violence and that a 10 percent margin of error would be acceptable (5 percent above and 5 percent below). If these assumptions are actually true, the table indicates that with a sample size of 322 women, one would obtain a 95 percent confidence interval for the true prevalence of 25 percent and 35 percent. Note, however, that if the estimates used for sample size calculations are very inaccurate then the required precision may not be obtained.

The table also shows that differences in the size of the study population do not greatly influence sample size, whereas changes in the expected frequency and particularly the level of precision that is needed can have an enormous effect on sample size calculations. It should also be noted that the sample size will need to be increased if a multistage sample is being used. Because these calculations can be quite complex, inexperienced researchers are urged to consult with someone who is knowledgeable in survey sampling techniques.

To explore the health consequences of violence with greater precision, and to compare the occurrence of violence in different sites within each country, the WHO VAW study uses a multistage sampling strategy aiming for 3,000 interviews in two sites; 1,500 in the capital city and 1,500 in a province. However, to end up with 1,500 completed interviews, it is usually necessary to increase the estimated sample size by 10-20 percent to account

BOX 7.2 POPULATION SURVEY USING RANDOM SAMPLING (STATCALC SAMPLE SIZE AND POWER)

Population Size	100,000	10,000	10,000	10,000
Expected Frequency	30%	30%	20%	30%
Worst Acceptable Frequency	25%	25%	15%	28%
Confidence Level	***Sample Size***	***Sample Size***	***Sample Size***	***Sample Size***
80%	138	136	104	794
90%	227	222	170	1,244
95%	322	313	270	1,678
99%	554	528	407	2,583
99.9%	901	834	648	3,624
99.99%	1,256	1,128	883	4,428

How large a sample?

This is one of the most common questions asked of statisticians. A frequent but erroneous answer is "as large as possible" when it instead should be "as small as possible."

It is also important to emphasize that the amount of information that can be gained from a sample depends on its absolute size, not upon the sampling fraction, or its size as a proportion of the population size. It is actually true that 99 out of one million tells you as much about the 1 million as 99 out of one thousand tells you about the one thousand.

(From Persson and Wall, 2003.[6])

BOX 7.3 SAMPLING IN PERU

The WHO VAW Study was carried out in two sites in Peru: Lima, the capital, and Cusco, a mountainous region with a mostly Quechua-speaking population. The research team used two very different sampling strategies for the study.

Lima

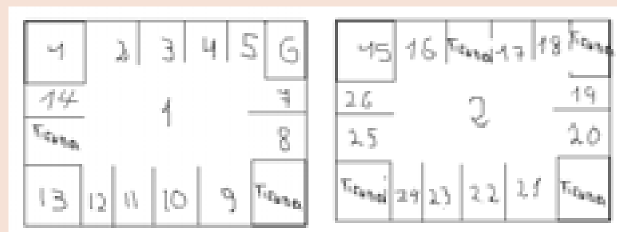
1. The team obtained from the National Institute of Statistics and Information (INEI) a list of selected clusters. INEI had divided Lima into 12,000 clusters with about 50 to 150 houses in each cluster. The team randomly selected 166 clusters, using probability proportional to size (assigning a weighted value to the larger clusters to give them a greater likelihood of being selected). INEI provided the team with maps that showed where the clusters were in relation to each other, and a map of each selected cluster indicating buildings such as houses, shops, and warehouses.
2. Because the maps had been made a few years earlier, the Peru team had to update them to take migration into account. A team of enumerators was sent to each cluster a few weeks before fieldwork began and went to each building to verify how many households lived there. They also obtained information regarding the number of eligible women in each household. A total of 21,322 households were enumerated in this process.
3. Based on this information, the team estimated that they would need a sample size of 2,000 in order to end up with 1,500 completed interviews after accounting for refusals and households without eligible women. Therefore, 12 households were selected in each of the 166 clusters. The sampling interval varied according to the size of the cluster. In a cluster with 120 households, every tenth household was chosen, in a cluster with 72 households every sixth house was chosen, and so forth. In the clusters with less than 48 households, a different strategy was used. To avoid interviewing women living very close to each other (this might undermine confidentiality), a minimum interval of four houses between selected households was established. This meant that in a cluster with 36 households, only nine women would be interviewed, instead of 12.
4. To choose the households, the team supervisor chose a house in each cluster at random using the same technique to start off the numbering (for example the northernmost house in a block). Interviewers then followed the sampling interval to select the houses where women would be interviewed. No replacements were allowed in the case of households without eligible women.

Community leaders mapping out villages in Cusco, Peru

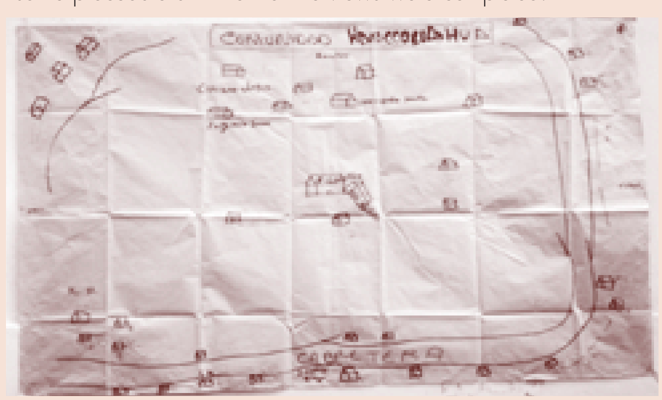
Cusco

A multistage sampling strategy was used in Cusco, where there are a few rural towns, and the rest of the population is dispersed throughout the mountains. The region has 12 provinces, and includes the regional capital, Cusco, where a large part of the population lives. The other provinces are mostly rural.

1. Four provinces were selected randomly. These included the town of Cusco plus three rural provinces.
2. INEI selected 46 clusters for the town of Cusco and 66 for the three provinces. Each cluster was selected with probability proportional to size. INEI had maps only for the town, and these were updated in the same fashion as in Lima. In Cusco, 12,558 buildings were enumerated with 5,619 households. Twenty-three households were selected to be visited in each cluster.
3. For the rural clusters, only general maps were available indicating where larger towns were located. In the larger towns, the team made a quick inventory of households and sketched a map. The total number of households was divided by 23 to obtain the sampling interval. The first household was selected randomly, then the rest were selected systematically.



4. In the rural area, no information was available. To generate detailed maps, the team held meetings with the leaders of rural communities and local women's clubs. The leaders were informed about the general goals of the study and the approximate dates that fieldwork would be performed in their communities. The leaders prepared maps of each village, with all houses and landmarks indicated, and then together mapped out the routes that fieldworkers would follow to reach the villages.
5. With the help of the maps, one household was randomly selected, and from this starting point all households were visited following a spiral direction, until 23 households with eligible women were visited. Because households were very dispersed, it was not necessary to have a minimum sampling interval. If one village did not have 23 households in it, then the closest village was visited, following the same procedure until the 23 interviews were completed.



Community map with schools, roads marked.

(From Guezmes et al, 2002.[7])

for missing households, where there is no eligible woman, or where the selected respondent is unavailable or refuses to participate in the study.

Obtaining a sampling frame

As pointed out earlier, to select a random sample, it is necessary to have a list or map of all households or individuals (depending on the sampling unit) in the study population. Wherever possible, previously developed **sampling frames** should be used, for example:

- Official census data.
- Voter registration records.
- Census carried out by the Health Ministry for immunization or malaria campaigns.
- Sampling frames developed by other large-scale studies carried out in the country (such as Demographic and Health Surveys or Living Standards Measurement Surveys).

Each of these options will have to be reviewed carefully to assess the quality of the information. In some kinds of official data, certain individuals may be left out (for example, resident foreigners or domestic servants). Moreover, unless the data were collected quite recently, it will probably be necessary to update the records. Even so, this will be much less time-consuming and costly than developing your own sampling frame. If there is nothing already available then you will have to develop your own sampling frame. This is often done by **enumerating** (listing and mapping) households and/or eligible respondents in the selected clusters. An example of some other approaches used in Liberia in a conflict situation is shown in Box 7.4.

BOX 7.4 CREATIVE SAMPLING IN LIBERIA

A study in Liberia on violence against women during the civil war used several different survey sites to maximize the breadth of representation, including market places, high schools, urban communities, and displaced persons camps. Each site required a different sampling strategy. Although each strategy yielded a good approximation of the situation of women from the specific target group sampled, it should be noted that one cannot combine the three groups to obtain a prevalence estimate for Liberian women as a whole.

- **Sampling older women:** In the market places, the sampling unit was a market stall. Surveyors drew a detailed map of the number and location of tables, from which the computed sampling interval and specific tables were randomly selected. Because lotteries were common in Liberia, the team made colorful "lucky tickets" for the tables that had been randomly selected. After introducing herself to a market woman, the interviewer placed the ticket on the table, saying "lucky ticket" and invited the woman to participate in the survey.
- **Sampling young girls:** The team derived a sampling plan for the high schools by obtaining from the teachers the number of girls in attendance that day in grades nine through twelve. After the sampling interval was computed, the girls in each class counted off starting from "one" to the sampling interval. If the sampling interval was four, for example, every girl who counted off "four" was invited to participate in the survey. The sampling was done publicly so that everyone knew that the girls had not been selected because of any particular experience, thereby preventing any stigma that might be attached to being selected to participate in a survey about sexual violence.
- **Sampling refugees:** The availability of food distribution census data made it easier to sample in the communities and in the displaced persons camps. After calculating the sampling interval, households were systematically chosen by selecting a starting household at random using the last two digits of the serial number on a Liberian $5 bill chosen at random.

(From Swiss et al, 1998.[8])

Who is eligible to be interviewed?

Other sections addressed the importance, for safety reasons, of interviewing only one woman per household. However, each research team will have to consider carefully what criteria to use for eligibility. In other words, which women within the household can be considered as a possible informant? For example, will domestic servants be included? What about visiting friends or relatives, or lodgers such as students who are renting a room in the house?

Researchers have resolved these issues in different ways, and each solution has its own advantages and tradeoffs. For example, if whether a woman slept in the household the night before is used as a basic criterion, then domestic servants may be included in their place of work. However, in this case, much of the economic status information collected about the household will not reflect this woman's

BOX 7.5 TWO METHODS FOR SELECTING INFORMANTS

PHOTO BY HAFM JANSEN

Lottery

Make a list of all the women in the household who are eligible to participate in the study according to the study criteria (such as over 15, ever been partnered). Be sure to include women even if they are not in the house at the time of the visit. Write the name of each woman on a separate piece of paper and place the papers in a paper bag. Ask someone in the household (perhaps the oldest person) to select a paper from the bag. Advantages of this method are the simplicity of administration and that it makes clear to everyone in the household that the person has been selected by chance, not because of any special characteristics. The disadvantage of this method is that it is difficult to monitor whether interviewers are using the system correctly.

Randomized chart

A randomized chart may be helpful for selecting a woman to interview once you have a complete list of all members of the household. This method makes it fairly easy to monitor whether fieldworkers are using the procedure correctly, but it is less transparent to household members.

Check the last digit on the number of the questionnaire. This indicates the row to use. Then, check on the list of household members the total number of women between 15 and 49 who have ever been married or partnered. This indicates the column to use. The number that appears in the intersection of the row and column indicates the number of the woman who should be interviewed.

Last digit on the questionnaire	***Number of eligible women in the household***							
	1	***2***	***3***	***4***	***5***	***6***	***7***	***8***
0	1	2	2	4	3	6	5	4
1	1	1	3	1	4	1	6	5
2	1	2	1	2	5	2	7	6
3	1	1	2	3	1	3	1	7
4	1	2	3	4	2	4	2	8
5	1	1	1	1	3	5	3	1
6	1	2	2	2	4	6	4	2
7	1	1	3	3	5	1	5	3
8	1	2	1	4	1	2	6	4
9	1	1	2	1	2	3	7	5

true status. On the other hand, if domestic servants are not considered eligible in their place of work, then it is important to make sure that they may have an opportunity to be included in their permanent households. This places an additional burden on interviewers because to avoid having a high nonresponse rate, it will be necessary to return in some cases on specific days or evenings when the woman will be home. The key to not introducing bias into the sample is to remember that eligibility criteria must be determined in such a way that all eligible women within the cluster have an equal opportunity to be chosen as informants, whether at their homes, place of work, or school.

The WHO VAW study decided to consider permanent lodgers and domestic servants who spend fewer than two nights per week away from the household as eligible informants. Women who worked in the household as domestic servants but spent at least two nights a week away would not be included. These women could potentially be selected to be interviewed in their own homes on their days off work.

To avoid biasing the sample, it is important that interviewers select the woman to be interviewed using random methods, and not simply the first woman to answer the door, or the oldest, or the one who seems most available. In the WHO VAW study, this was achieved by choosing women's names out of a paper bag. In Nicaragua, a random number chart was used to select the women to interview. Box 7.5 describes how to use these methods. If you are using a list of women's names generated from a sampling frame of individuals, and it is possible to determine whether two women are living in the same household, then you can select one woman from each pair by alternating between the older and younger woman.

1. Crabtree B, Miller W. *Doing Qualitative Research*. Newbury Park: Sage; 1992.
2. Hudelson P. *Qualitative Research for Health Programs*. Geneva: Division of Mental Health, World Health Organization; 1994.
3. Patton M. *Qualitative Evaluation and Research Methods*. 2nd ed. Newbury Park: Sage Publications; 1990.
4. Montoya O. *Nadando contra Corriente: Buscando Pistas para Prevenir la Violencia Masculina en las Relaciones de Pareja*. Managua, Nicaragua: Fundación Puntos de Encuentro; 1998.
5. Morison L. Self-weighting in Cluster Samples. Personal Communication. London; 2002.
6. Persson LÅ, Wall S. *Epidemiology for Public Health*. Umeå, Sweden: Umeå International School of Public Health; 2003.
7. Guezmes A, Palomino N, Ramos M. *Violencia Sexual y Física contra las Mujeres en el Perú*. Lima: Flora Tristan, Organización Munidial de la Salud, Universidad Peruana Cayetano Heredia; 2002.
8. Swiss S, Jennings PJ, Aryee GV, et al. Violence against women during the Liberian civil conflict. *Journal of the American Medical Association*. 1998;279:625-629.