

The focus group as a tool for health research: issues in design and analysis*



Deborah E. Bender¹ and Douglas Ewbank²

¹*Department of Health Policy and Administration, The School of Public Health, The University of North Carolina, Chapel Hill, NC 27599, USA*

²*Social Science Director, INCLEN, and Population Studies Center, University of Pennsylvania*

Abstract

The focus group is a technique for eliciting information from specific population subgroups. Issues addressed may be little known or relatively well known to the researcher. The method is most effectively used when the objective of the investigation is to elicit points of view of client or consumer groups which may differ from those of providers. Despite the frequency with which focus groups are used, few published materials describe the practical application of the method. This paper presents a detailed methodology for the conduct of focus groups and analysis of focus-group data with the intention of improving its use among researchers and health-care professionals. Data from two studies, immunization compliance in West Africa, and barriers to use of prenatal-care services in Bolivia, are used as illustrative examples.

Introduction

The focus group is a qualitative research method for eliciting descriptive data from population subgroups. Usually, a group of eight to twelve persons are gathered together for a group interview or discussion on a focused topic. The technique is often used to explore themes that are not well-known to the investigator, such as locally held beliefs on the value of immunization or traditional practices preferred by an ethnic subgroup concerning pregnancy and childbirth. Focus groups may also be used to elicit opinions on known topics, in order to develop an understanding of client or user perspectives on the topics. For example, when there is a need to identify points of view of clients or patients that differ from those of providers, such as in the case of compliance with a specific preventive-health recommendation, the recommendation itself can be tested with a focus group in an attempt to validate its appropriateness to a particular population. In either case, local cultural practices may differ from, or conflict with, standards of medical practice. A knowledge of differences in perspectives can assist in designing alternative standards which take into account local practice (Bender et al. 1988-89; Carey 1993).

Focus groups are widely used in the investigation of applied-research problems and are recognized as a distinct research method. The method enables researchers to generate new hypotheses; to explore intermediate variables as a means of explaining certain relationships found in survey data; or to validate findings gathered through other methods using triangulation for comparison of different perspectives

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(Stycos 1981). In focus-group research, as in qualitative methods, reasoning proceeds from observation of a series of particular facts to a general statement or hypothesis (the inductive method). The strength of qualitative methods are that they generate rich, detailed, valid process data that usually leave the study participants' perspectives intact (Steckler et al. 1992). The starting point of the focus-group research method is distinctly different from that of quantitative methods, which begin with the statement of an hypothesis and reason from the statement of that general hypothesis to particular facts (the deductive method).

The focus-group method of data collection has its roots in the group interview (Banks 1956; Goldman 1962), but was brought into prominence by market researchers during the past decade and a half (Bellinger, Bernhardt and Goldstucker 1976; Calder 1977; Linda 1982). Focus groups have been defended as a valid tool in social research (Stycos 1981; Morgan and Spanish 1984; Basch 1987) and are widely used as a research method in health (Tsu 1980; Bender and Macauley 1988-89; Willms and Lange 1992) and family-planning research (Folch-Lyons, de la Macorray and Schearer 1981; Suyono et al. 1981; Knodel and Pramualratana 1987). However, despite the widespread use of focus groups in applied research (Folch-Lyons and Trost 1981; Stewart and Shamdasani 1990), relatively little has been written that specifically directs program planners, evaluators, or health researchers trained in epidemiology or related methods, in the planning and conduct of focus groups and the analysis of focus-group findings.

The purpose of this paper is to present a rationale and methodology for the conduct and analysis of focus groups and focus-group data that is detailed enough to be used as a research guide. Two illustrative examples are presented from health research conducted in developing countries: a community-based investigation of reasons for vaccination non-compliance in two counties in Liberia, West Africa (Bender and Macauley 1988-89; Macauley and Bender 1990-91); and programmatic research designed to determine perceived barriers to use of prenatal-care services in Bolivia (Bender et al. 1988-89).

Key considerations in focus-group design

There are several key considerations in conducting a focus group (Morgan and Spanish 1984; Scrimshaw and Hurtado 1987). First, the focus group should examine a narrowly focused topic. Secondly, the topic should be of interest to both investigators and respondents. When the interest level is high, participants are more likely to provide concrete answers and highly detailed accounts of events (Merton, Fiske and Kendall 1956). Thirdly, in conducting the focus group, the emphasis should be placed on the interaction between or among group members, rather than on the interaction between the interviewer and group members. The objective is to give the researcher an understanding of the participants' perspective on the topic of interest (Merton, Fiske and Kendall 1956). The size of the budget and time available for conduct of the study are two practical constraints which will also affect the overall plan (Morgan 1988).

Two particular points of this definition bear re-emphasis. The first is that the topic be narrowly focused. Asking a group of respondents all there is to know about health or illness or health-service use in their community is not an effective strategy since neither respondents nor interviewers would have a clear sense of the key point or points of interest. The resultant data are diffuse and unfocused, difficult to analyse, and rarely contribute new knowledge to the field. In contrast, a narrowly focused question encourages focus-group participants to give specific and detailed answers about names and locally recognized symptoms of common childhood communicable diseases, commonly used language terms for those symptoms or diseases (which may be different from those known to health professionals), or mothers' reasons why prenatal care is underutilized in a periurban environment although medical care during the post-partum period in the same environment is highly valued.

Secondly, the emphasis in a focus group should be on the interaction among the group members, so as to elicit the most detailed, vivid, and valid responses from the participants (Morgan 1988; Stewart and Shamdasani 1990). Participants who discuss, debate or clarify one another's given reasons for not returning to the health post for a second or third series of childhood immunizations are considerably more likely to be concerned with the validity of their answers than with providing the interviewer with socially correct (and possible invalid) responses. Ideally, the focus group is an interaction among participants, where the investigator, while facilitating that interaction, blends quietly into the background. Except for posing guiding questions, and occasionally probing, asking an additional question or making a refocusing statement in order to sustain the group's interaction, the focus-group facilitator should be a listener and a learner.

Focus groups have numerous applications in health research. First, they are frequently used to gather exploratory data: to discover locally used linguistic labels for communicable diseases, for example; or to identify typical patterns of health-related behaviours, such as the use of childhood immunizations or of typical practices surrounding pregnancy. Secondly, focus groups can be used to develop a testable hypothesis, such as the positive relationship expected between the use of prenatal care and improved birth outcomes. Thirdly, focus groups can be nested in a large-area survey to assist in developing a detailed contextual explanation of its results. This is particularly useful when the findings are unexpected, contrary to the expected hypothesis, or apparently contradictory.

Method of design, conduct and analysis of focus groups

Design

The design structure selected for a focus-group study or sub-study will influence the character, quality and reliability of the resulting data. The researcher or research team must make reasoned and explicit judgements about a number of specific considerations. First, one may choose smaller or larger-sized groups. Groups of six to ten people are usually recommended (Morgan 1988), although focus groups held in developing countries tend to be larger (8-15 people). Small groups allow a greater contribution from each individual participant; but larger groups permit more people to participate, and thus avoid potentially uncomfortable exclusions. The ultimate decision will depend on the local culture and norms as well as on the objectives of the study. Generally, the more narrowly defined the research question is, the more effective will be fewer, rather than more, respondents. Yet if one is interviewing groups of women in their own community about a topic of concern to all of them (such as childhood illnesses or pregnancy and childbirth) it may be difficult to limit the group size without insulting the group members, and thus jeopardizing essential rapport. If these same women tend to be shy and inhibited in conversations with outsiders, as has occurred in several focus groups held in rural communities where barriers to use of prenatal care were being investigated, then a group of 20 people still may work quite well. If, on the other hand, one is interviewing village chiefs (as was done in the immunization compliance study) who are known to be loquacious or persistent in their desire to be heard, then groups of four or five people may yield the better results. The group members, when chosen, should be able to sit facing one another, in order to encourage their maximum interaction (Stewart and Shamdasani 1990).

Secondly, the sample may be selected using either random or convenience strategies (Scrimshaw and Hurtado 1987; Morgan 1988). In a health-services usage study, for instance, one may want to arrange a meeting of every tenth person who arrives at the clinic or of every tenth household in a neighbouring village. Such a strategy may be ideal in its rigour, but may be impractical. In many settings it may be unreasonable to expect a majority of the people selected to return at the requested time. If people live far away, are unfamiliar with the purpose of the questions, or are suspicious of

outsiders, they may simulate agreement with a request to return, but not appear at the expected time. In some settings, a convenience sample may be the only feasible method of gathering potential respondents, that is, one may be able to interview only those individuals who arrive on an appointed day to have their children vaccinated. When time is essential, a focus group may even be assembled before the arrival of the investigator. Then, as occurred in the case of the study of barriers to prenatal care, there may be more women and more older women than desired, waiting to share their thoughts. To turn some away puts the willingness of the others to respond frankly at risk; a careful judgement must be made. Good examples of convenience sampling include focus groups which are conducted with women's clubs, church groups, clients at a family-planning clinic, or other naturally occurring groups.

Thirdly, participants may be selected to have homogeneous or heterogeneous backgrounds. For example, if one is interested in contraceptive beliefs and practices, one may want to interview younger women separately from older women. On the other hand, holding focus groups of women of all ages in recently settled periurban areas may provide an opportunity to discuss the effects of migration and modernization on patterns of breastfeeding, since these changes may be more tied to recent migration than to maternal age. While the criteria for grouping participants will vary from one setting to another, it is necessary to select participants who will have something to say to one another, and who will be comfortable talking with one another (Morgan 1988). It is also important to develop strategies which will facilitate the expression of diverse points of view among participants, particularly when the group is heterogeneous.

Fourthly, focus groups may be designed to include participants who are known or not known to one another. When participants know one another, they will usually prod one another to tell their own stories: in one sense, the prodders become the assistants to the facilitator. However, if the subject matter being discussed is particularly sensitive, respondents may feel more comfortable sharing their points of view among relative strangers. At times, people are more willing to reveal personal behaviours, or events that have occurred to them, if no one present can repeat the story back to neighbours or friends.

It is advisable to seek advice of local residents or individuals who have worked with members of the target group on how best to make this particular decision. Whatever decision is made, it is important to remember that the choices one makes in the design of focus groups should depend on the objective of the study. The decisions should be guided by one's knowledge of the particular preferences of the people with whom one is working. The decisions should also be explicit (rather than accidental), because they will influence the extent and depth of the information collected.

In conducting a focus group, the initial job of the facilitator is to create a non-evaluative environment in which group members feel free to express their opinions without concern for the agreement or disagreement of others in the group (Morgan and Spanish 1984; Stewart and Shamdasani 1990). The effective facilitator encourages interaction between participants rather than between facilitator and participants. This allows the facilitator, as a quasi-observer, to assume a posture of 'sophisticated naiveté', and to raise probing questions: 'Well, why is that?'; or 'Can you tell me more about why that is so?'. Developing a one-page focus-group set of questions is recommended as a means of guiding and directing the discussion. For example, the guide in Appendix 1 was developed to assist in directing the discussion of reasons for immunization drop-out in rural Liberian communities. The four statements listed under 'I: Introduction' show the objectives of the study. They are listed above the focus-group questions to provide a ready reference for the facilitator during the conduct of each focus group. The 12 guiding questions are listed under 'II: Focus-group guide questions for mothers'. The first three questions are designed to elicit a list of diseases that most concern the respondents, and thus to check on the congruence between respondents' priorities and the list of immunizable diseases of

concern to health workers. Questions 4 to 6 ask respondents to report on their behaviours with respect to immunization, and also serve to identify respondent knowledge of available services. Questions 7 to 10, are intended to elicit problems, and alternative solutions, related to the delivery of vaccines and the health-service system. Finally, the last two questions are intended as reinforcement to health-education lessons, or to evaluate levels of knowledge regarding immunization benefit. A focus-group guide should guide, not limit, the questions that can be asked. A facilitator should follow up leads offered by participants with additional questions: after all, the purpose of conducting a focus group is to explore unknown or somewhat unfamiliar territory.

Appendix 2 is an example of a similar question set for guiding a discussion of practices related to pregnancy. The investigators were concerned to discover perceived barriers to use of health services for prenatal care and delivery in a semi-rural Bolivian population in which home births are still quite common. Was distance, cost, tradition, or some other factor primarily responsible for non-use of prenatal care? These questions were addressed in a series of focus groups, and new information emerged as the women discussed the question among themselves. It emerged that women in this environment did not perceive pregnancy to be a time of particular risk; they openly wondered, on the other hand, why the health post did not offer post-natal services, a time which they considered to pose the greatest risk to the health of the mother.¹ Births were traditionally a family, not a medical, event; husbands assisted at the delivery as frequently as birth attendants (CIAES 1991); and, because it was an area of migration, mothers-in-law did not attend births nearly as commonly as they had in the past (Bender et al. 1988-89). Cost, too, was a factor in home deliveries: although a sliding scale was available, not everyone was aware of that fact, and a hospital birth was considered to be too costly, while a home birth was free.

Health professionals may believe that they know the answers to the questions posed because they have grown up in the same general society, yet listening to women's responses and to their discussion among themselves—spoken in their own words and in their preferred idiom—reveals the cultural distance between the two. It is less important to determine whether the chasm of understanding exists because of differences in socioeconomic background, or has been created through medical or other educational training, than it is to bridge the gap by establishing a common basis of understanding, a common language, and a common set of objectives for development of culturally appropriate, medically sound health services.

Conduct

After developing the study design and a focus-group question guide, interest logically turns to the conduct of the actual focus groups and to data collection. In the actual conduct of a focus group, there are additional decisions to be considered. While the primary emphasis is on stimulating interaction among the participants, the facilitator's other responsibility is to guide the direction of the respondent's comments so that the discussion does not wander too far from the interviewer's established focus.

It is recommended that each focus group have both a facilitator and a recorder. The facilitator is responsible for conducting the groups, for encouraging quieter respondents to speak up, and for quieting garrulous talkers. If not addressed directly, the opinionated individual can redirect the group's discussion. Asking participants to respond to such a person is often an effective way of balancing the group and eliciting responses from the majority.

Although the facilitator may choose a non-directive or a directive approach in leading the focus group, caution must be exercised lest the too-involved facilitator obtain results that reflect the

¹ Recently published research on puerperal maternal tetanus confirms the validity of the concerns of these peasant women (Faveau et al. 1993).

facilitator's own interests rather than those of the participants (Knodel and Pramualratana 1987; Morgan 1988). The recorder is responsible for recording the discussion with a hand-held tape recorder; for observing the process of the focus group in detail; and for making notes on those observations complete with key phrases which place those observations in their proper context. Although there is little concern that taping will alter responses of members in the group because of the public nature of the responses, some courtesies and cautions are warranted. It is usual to inform participants that the recording is taking place, to assure group members that all recordings will remain confidential, and to explain the purpose of the discussion (Stewart and Shamdasani 1990). The importance of the recorder's role should not be underestimated; indeed, in qualitative interviews, the informant's language is data (Steckler et al. 1992). Observations made by the recorder are also important, because neither tones of voice nor rapid-fire responses can readily be captured by transcription of verbal statements.

The facilitator must be skilled at using probing techniques and pacing the group. It is not reasonable to expect a full and detailed answer from a simple question. Rather, to elicit high-quality information one must be willing to wait, to encourage and cajole. In addition, an effective facilitator should not move the group too rapidly nor dwell on a subject for too long. The facilitator assumes the responsibility for creating a non-threatening, supportive climate, interjecting probing comments and transitional questions, and encouraging the involvement of all members (Basch 1987). One should not expect to be able to discuss every topic in equal depth in each group. Instead, the emphasis in a focus group should be placed on eliciting the maximum detail in response to each question, not on standardizing responses. Finally, offering lunch, a snack, or a group photograph to participants is a way of thanking them for their involvement, and reminds the investigators that the time of respondents is valuable, too.

Finally, some equipment is needed: a hand-held tape recorder; an adequate number of cassette tapes, pre-labelled with the date and number of each focus group; additional fresh batteries; pads of paper; and pencils or pens. Such additional requisites tend to be taken for granted, but too many otherwise well-planned data-collection sessions have been compromised for lack of attention to these apparently routine details.

Analysis

The most challenging part of focus-group research is the transcription and analysis of the focus-group interviews—the data (Miles and Huberman 1984; Scrimshaw and Hurtado 1987; Morgan 1988). The analysis of focus-group interviews requires judgement and skill. It is in this aspect that the focus group, as one among several qualitative methods, differs most from quantitative research. The two basic approaches to analysing focus groups are systematic coding using content analysis, and ethnographic summarization. The narrative provided by each group of participants can be summarized numerically, and often is. However, the rich context in which the words of the respondents are embedded offers a unique opportunity to search the text, and the context, for additional meaning, for a previously unknown clue explanatory of behaviour, or a nuance which yields a different interpretation of previous knowledge.

The first step in the analysis of focus-group data is the transcription of the individual, pre-labelled tapes. If the focus group has been recorded in a language different from the language in which the analysis will take place, then the transcription must also be translated. Standard rules for back-translation should be followed. The completed transcription should be compared with hand-written notes to fill in inaudible phrases or gaps in the tapes. In addition, hand-written notes, taken by the recorder during the focus-group interview, assist in describing the context and the flow of the interview. These notes identify long pauses between replies, nervous laughter in response to a sensitive question, or angry or frustrated tones of voice. When describing the interviews as 'contextualized data' (data in

their context) it is invaluable to be able to include these more descriptive indicators in addition to more straightforward reporting of content (Miles and Huberman 1984).

The investigators are then ready for the formal process of analysis. This is not to suggest that insights into preferred patterns and preferences do not occur during the conduct of a focus group: they do. In fact, if several field workers are collecting data at more than one site, they should meet periodically to discuss alternative explanations, disagreements, emerging hypotheses, and potential revisions to the data-collection guides (Scrimshaw and Hurtado 1987). Checks, either with other investigators or with notes which clearly lay out the objectives of the study, can prevent an investigator from being side-tracked from the task of making coherent sense of what is happening by small but poignant details—the emotions expressed by a particular informant, a key phrase, or an explanatory aside made after a focus group (Miles and Huberman 1984).

The analysis of the transcription can be conducted manually or by computer, using word-processing programs such as *Nota Bene* or *Ethnograph*, which were developed to assist in qualitative analysis, or *Word Perfect* or *Microsoft Word* using the 'search' feature. While computer programs enforce consistency, they do nothing that cannot be done by hand. Conversely, computer analysis poses a risk of performing an oversimplified analysis through too-early identification of core text as key to the 'answer'. Excessive reliance on computers may yield results that are flat and oversimplified; it is shortsighted to assume that computers are capable of gleaning the meaning embedded in the narrative data (Becker 1993).

Investigators will want to conduct a content analysis of the responses and construct representative tables to organize and display the data. Next, they will want to develop an ethnographic summary of the data using direct quotes, with narrative explanation. The balance between these analytic approaches will depend on the research question and the nature of the audience for whom the research is being conducted. If the research question is exploratory, then the analysis should focus on developing alternative possibilities; if the research question tests an hypothesis, then the analysis should try to determine the best answer to the problem.

If one is addressing an audience which is accustomed to viewing tables and graphs in order to interpret the data, then it is wise to start with data tables, showing percentages, which organize focus-group data in an easily interpreted format. Then, having established a foundation for discussion, the investigator can move to presentation of patterns of narrative, demonstrating the identification of themes important to the analysis. If, on the other hand, one is preparing to hold a follow-up meeting with village chiefs (who, in the immunization compliance study, had received training as health-team-extendors), the preferable format is to present a short set of straightforward graphs, using numbers and percentages, which illustrate the two or three points of most interest to them: better that they ask for more than leave quietly halfway through your lengthy presentation.

Methods of analysis

The three steps of analysis described above will be discussed below. The two common methods in content analysis are identification of themes, and incidence density. In theme identification, the researcher is looking for particular patterns, themes, concerns or responses which are posed repeatedly by the focus-group respondents. The group (rather than the individual) is the unit of analysis (Knodel and Pramualratana 1987; Morgan 1988). For example, in Appendix 3 the names of diseases which groups of mothers regard as major health problems for children are listed as transcribed.

Table 1

Diseases mentioned by numbers of groups of mothers as frequent health problems for children in Bomi and Cape Mount

| Disease | Bomi | Cape Mount | All groups mentioning item (%) |
|----------------|------|------------|--------------------------------|
| Measles | 10 | 10 | 100 |
| Diarrhoea | 9 | 7 | 80 |
| Tetanus | 9 | 5 | 70 |
| Scabies | 7 | 5 | 60 |
| Malaria | 5 | 5 | 50 |
| Fever | 4 | 6 | 50 |
| Polio | 5 | 5 | 50 |
| Whooping cough | 7 | 2 | 45 |
| Pneumonia | 3 | 3 | 30 |
| Vomiting | 4 | 3 | 35 |
| Thrush | 5 | — | 25 |
| N | 10 | 10 | |

When constructing tables to classify data or identify themes, a disease is listed in the table if it is mentioned by a group; however, it is listed only once, no matter how many times respondents in a particular group mention it. The number of groups, not the number of individuals, is used as the denominator. The results of such an analysis of themes, with the number of groups constituting the denominator for each county separately and the two counties (20 groups) together are displayed in tabular form in Table 1. The maximum number for each county is ten, irrespective of how many times the theme was mentioned by a group. These results can be represented as numbers or percentages. Measles is clearly recognized as a priority health problem by mothers in all of the focus groups. Scabies, an important although non-immunizable disease, is mentioned by seven of the groups in Bomi County and by five of the groups in Cape Mount County; overall 60 per cent of groups mentioned scabies as a priority health concern.

Using the group as the unit of analysis is the most common method of data analysis. Simple statistical frequencies are most effective in depicting the more important characteristics of the problem being investigated.²

The same data could also be represented in pie charts, to provide a visual representation of the relative importance of different diseases (not pictured). A graphic representation is particularly appropriate if the findings are being interpreted for community members themselves, who may be more accustomed to thinking visually than numerically. Graphs can also be used effectively to compare responses of two groups, for instance, mothers' perceptions of common diseases *versus* those of health providers. More complex statistical analyses are not feasible because of the limited, and primarily qualitative, nature of the data.

In Appendix 4 a second example of coding themes using the group as the unit of analysis is displayed. In this instance, the investigators have used large and small letters to code narrative responses. This sample of text gives examples of narrative responses of illnesses which are believed to befall women in the post-partum period. The two traditional illnesses named are *sobre-parto* and *pasmo*, coded 'A' and 'B', respectively. The one instance of haemorrhage discussed is coded 'C'. Where the narrative text is especially rich, as in Groups 2 and 4, the investigators have also coded symptoms, each circled, said to be characteristic of a *sobre-parto* (coded 'a' to 'h'). In this way, one

² If the number of focus groups is sufficiently large, the chi-squared test of significance can be applied, preferably a Fisher-exact test which is more accurate with small samples.

can begin to identify inclusion and exclusion criteria which are useful in deriving a functional definition of a previously unrecognized illness category.

The ethnographic summary is developed through repeated reading of the narratives for their underlying meaning—something bigger, more abstract, and more elusive than a count of words. When the investigator has a clear sense of what the respondents are trying to convey, quotations illustrative of key points are selected from the transcript and woven together with an accompanying narrative explanation.

Themes identified in the analyses are of two types. 'Sought information' refers to expected themes, such as recognition of measles as a major health problem. However, investigators should also be attentive to the occurrence of 'emergent themes', that is, unexpected insights offered by respondents. In the case of childhood immunization in West Africa, the mention of scabies and malaria, two diseases for which no vaccinations are available, is an example of an emergent theme. These diseases appear to have been of greater priority to groups of mothers than polio or whooping cough for which immunizations are available (Table 1). Women also suggested several strategies for change in the protocol of the program. There were the expected themes, such as changing the dates or times of the immunization offerings, and providing more frequent opportunities to seek immunizations. In one group, one woman made the comment 'Don't ask us [these questions]; we're not in charge here'. A second woman picked up the theme several comments later: 'If you want us to come, you be working with the chief. He be in charge'. A third woman retorted, 'If he tells us to be there; we be there'. In one sense, the women were not answering the questions raised by the interviewer. In another more important way, however, they were making a critical suggestion that would have been lost in a survey, or, at best, grouped into a catch-all 'other' category. Use of the focus-group methodology not only permits, but encourages the investigator to listen for such unexpected responses as clues for the solution of the problem. A further refinement of the women's comments, which was eventually developed into the intervention strategy, resulted during a discussion of the data with Liberian counterparts.

'Working with the chief', said one interviewer, 'we already do that. We ask his permission when we arrive at the village. . .'

'But the women are already in the field many times, and he cannot call them back', responded another.

'It doesn't seem like we're really working with the chief, if we only ask his permission when we arrive. Maybe he should be part of our health team. Maybe if we asked him ahead of time, checked for a convenient day or time, he would ask the women to stay home', the first interviewer thought aloud.

This example demonstrates the occurrence of an emergent theme, and the emergence of its fullest meaning through the process of analysis by the research team of investigators.

In the Bolivian study of barriers to use of prenatal care, women unexpectedly, and repeatedly, referred to post-partum health problems. Based on their experiences, the time around the birth and during the days immediately following the birth was the period of highest risk.

'For three days we must be very careful; we cannot drink or wash in cold water, because it will give us *sobre- parto*'.

'I got *sobre-parto* because I got out of bed too soon; I swelled up so completely, I couldn't even see'.

'If a woman doesn't take care of herself and gets *sobre-parto*, we take her to the hospital, if she doesn't get care quickly, she can die'.

It was after giving birth that women died. It was then that they needed medical care. Although the women knew to go directly to the hospital in the case of haemorrhage after birth, they expressed surprise that the doctors did not offer routine post-natal care in addition to pre-natal care. This preference is clearly related to the recognition of *sobre-parto* as well as *pasmo* and *escalofrios* as serious illnesses that occur during the post-partum period. At the same time, however, the women do not see the potential for preventing many of the risky moments by means of pre-natal care.

A logical and compelling argument for why women consider themselves to be at greater risk after than before birth emerges from the analysis of the focus-group narratives concerning reproductive-health conditions (frequency of home delivery, poor hygienic conditions in some hospitals, high rates of maternal mortality, and women's traditional explanations of post-partum illnesses). In both examples, the respondents' conversation provides a perspective on health-services planners and providers that may otherwise be unavailable. In the West African immunization example, Ministry of Health officials adopted a new strategy for improving compliance. Village chiefs and traditional midwives were invited to participate in an immunization-training workshop and their assistance was sought to achieve full compliance in their villages (Macauley and Bender 1990-91). In the example of Bolivian pre-natal care, a post-natal visit within two weeks of the birth was added to the standard protocol in the service-delivery area where the research was conducted. In addition, through a subsequently funded WHO Safe Motherhood Project, training in prevention of post-natal risk was added to the non-formal educational intervention offered in community centres to all women of reproductive age (Bender, Santander and McCann 1993). These two distinctive understandings of client perspective were useful, if not essential, in determining responses that are responsive to user priorities and that may thus improve utilization, compliance and health outcomes.

The second method of analysis is incidence density, which is defined as the number of times a theme is mentioned within each group.³ To establish incidence density, the transcribed narrative text is coded using the procedures for identifying sought and emergent themes discussed above. Then the number of times a particular theme is mentioned within a group, or across all groups (irrespective of the number of groups) is tallied. In recording incidence-density data, it is more effective to choose as the content to be counted a particular reaction to a theme rather than simply counting repetitions of the occurrence of the theme itself.

Incidence-density data are helpful in comparing the relative importance of identified themes to respondents. For example, in Appendix 4, the seriousness of *sobre-parto* is emphasized by repeated mention of its dangerousness and the risk of death. In the narrative for Group 2 alone, words to that effect occur six times (see underlining). Frequent mention of *sobre-parto* in other groups is a clear indication of generalized concern.

It is also important that the investigator decides which words should be grouped as synonyms. For example, in Appendix 3 Group 10, the words 'dehydration' and 'diarrhoea' are grouped as one category; in Group 4 'scabies' and 'craw craw' are regarded as synonyms. The decision on how to group depends on the meaning of the terms, and whether the investigator is interested in sets of related symptoms, or in making subtle distinctions between terms.

Before completing the analysis, the text as a whole should be re-read for additional clues that will assist in the fullest interpretation of the data. This re-reading is different from poring over pages of

³ This differs from the epidemiologist's use of the term.

cross-tabulations because the answer is not on the written page, but rather the interpretation emerges from the page as the reader ponders the words, combining and recombining phrases and themes. In a sense, the re-reading is similar to a clinical interview in which the symptoms given do not lead to a clear-cut diagnosis and the clinician must review the symptoms, sorting and re-ordering their priority to arrive at a probable diagnosis. Returning to Group 2 in Appendix 4, the references to the use of boiled water and use of medical care establish a possible link between the traditional illness called *sobre-parto* and the medical concept of a post-partum infection. Further in-depth research with selected women who have had this experience and with physicians or nurses who had cared for women coming to the hospital during the immediate post-partum period would establish the degree of overlap or congruence between the two conditions.

Other insights derived from re-reading the data may lead to a revised set of priorities (such as the recognition of common disease problems for which there are no immunizations) or recognition of an additional need (such as a preference for post-natal rather than pre-natal care) as well as a completely new piece of information (such as *sobre-parto* and *pasmo* being disease categories not recognized by Western medicine). The focus group, like other qualitative methods, permits the investigator to reason empirically, moving from particular facts to a broader generalization.

Reliability and validity

Focus-group data can be tested for reliability by comparing the responses of focus groups. For instance, if most groups mention measles as a major health problem, then one can be confident of the reliability of reporting. However, if no two groups give the same response as an explanation of the cause of measles, one should not place too much faith in the reliability of the responses. Secondly, one can also compare focus-group findings with those from other methods of data collection, such as structured questionnaires, clinical histories or medical records, or immunization records on Road to Health Cards.

The narrative statements in Appendix 4 demonstrate another example of reliability testing across groups. Each of the six groups gave similar answers with respect to precautions to be taken during the post-partum period, even though each group's answers were expressed in different ways.

In order to avoid jeopardizing the validity of focus-group data, every precaution must be taken to avoid finishing participants' responses, or asking leading questions that can hinder validity. Finally, the health-education lecture must be saved for another occasion. The purpose of a focus group is to gather data relevant to the respondents' point of view, not to provide them with 'correct' textbook responses. This, of course, does not preclude the appropriateness of giving information in response to questions raised by those being interviewed. Ideally, such a question-and-answer session should be separated from data collection by a clear break in the proceedings, perhaps after refreshments.

Focus-group limitations

While focus groups are an effective research method in many situations, their applicability is not universal (Morgan and Spanish 1984; Morgan 1988). A researcher has less control over the direction of the discussion in a focus group than a one-to-one setting, whether it be an in-depth interview or the application of a survey. An uninterested or otherwise determined group may require a strong hand. The necessity of preserving the context of the data gained through focus groups may make the data more difficult to analyse, unless a researcher is very familiar with the setting. Because of the contextual nature of the data, it is also more difficult than in a survey setting to train a team of interviewers to assist in the data collection (Willms and Lange 1992). Well-trained interviewers must know not only the instrument, but also the cultural context in which they are to work. Because focus-group participants are rarely selected randomly, some responses may be non-representative.

Finally the sheer logistics of conduct and analysis of focus-group research, including the selection and assembly of representative groups of respondents, taping and transcription of the narrative, and, sometimes, translation to the dominant language, require more time, money, and energy than one initially expects (Knodel and Pramualratana 1987). Selective analysis of two or three of the most revealing responses can be helpful, but will involve trade-offs. Selecting a narrowly focused topic at the outset is still the most effective safeguard.

When using focus-group findings to illustrate a health problem or a specific group's understanding of the causes and preferred treatments of a health problem, it is also important to remember not to ask more of the data than they can give. The primary purpose of the focus-group method is to illuminate, to describe, and to explain narrow categories of inquiry within the context used by the respondents.

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Appendix 1

Immunization drop-outs and maternal behaviour: focus-group question guide

Questions for use in the development of focus groups for evaluation of drop-out rates in immunization campaign in Liberia, West Africa.

I Introduction

The question set focuses on gathering information on four levels:

- A. Understanding the health and illness reality as perceived by the group being interviewed.
- B. Identification of problems in the current delivery system according to each of the groups being interviewed.
- C. Recommendations for changes or improvements as suggested by each of the three groups.
- D. Educational reinforcement of the importance of vaccinations to the health status of children under five.

II Focus-group guiding questions for mothers

1. What are the major health problems for children in this part of the country?
- 2a. (If vaccine preventable diseases are not mentioned, ask 2a before 2b). Are any of the diseases for which there are immunizations a problem among your children?
- 2b. (Use 2b only if vaccine preventable diseases are mentioned). Can some of these diseases be prevented by vaccination?
3. Which ones? Can you name them?
4. Have you received vaccinations for any of these diseases for your own children?
5. Where do you get these vaccinations? Any other places? How far do you have to walk (ride in taxi) to reach the vaccination post? How long does that take? (In case of the taxi ride) How much does that cost?
6. When do you get these vaccinations? Any other times during the year?
7. Are there any problems in getting these vaccinations for your children?
8. Can you describe any of these problems which you or your co-workers have had, especially those at the health post or the site of vaccinations in greater detail?
9. What changes would you like to see made in the vaccination program?
10. Have other health workers with whom you have talked made suggestions for improvements in the vaccination program? What are those suggestions?
11. How would these changes make it easier for you to reach the goal of full immunization for 80 to 100 per cent of children under three years of age in this area?
12. Why is it so important that we continue to try to find better ways to administer vaccinations? What is it that is important about these vaccinations?

Appendix 2

Practices during pregnancy and childbirth and barriers to use of health-care services

Selected questions from Guide for focus group discussions with mothers' clubs in periurban Bolivia.

I. Pregnancy-related questions

1. When a women realizes that she is pregnant, what things does she do to take care of herself?
2. Do traditional birth attendants visit women during their pregnancy here? What things do they do?
3. What problems have you heard that women have sometimes during pregnancy? What do the women here do when then they have these problems?
4. Where do you prefer to give birth (at home or at the hospital/health post)? Why do you go (or not go) to the hospital or health post to give birth?
5. Who ought to be with the woman during the birth? What things do each of those persons do to help her?

II. Barriers to use of health services

6. When a woman is pregnant, do you think that she ought to go to a doctor or the health post for prenatal care?
7. What does the doctor do during the visits? Why are these things done? What do you think of the things the doctor does?
8. How far is the health post from you home? How long does it take you to get there? How do you travel (vehicle or on foot)?
9. Do you know the health services offered by the health post? What are they? What do you think of these services?
10. Do you know the vaccination that is given to pregnant women? What does this vaccination do? Is it good or not?
11. Have you ever used the services offered by the health post in your locale?
12. What suggestions do you have for improving those services?

Appendix 3

Responses to village mothers participating in focus groups in Bomi County, Liberia, West Africa

Focus: understanding the health and illness reality as perceived by the group being interviewed.

Question 1: What are the major health problems for children in this part of the country? ... or in Liberian English ... 'What kind of sicknesses give your children a hard time here'?

- G1. (Tarkpoima) pneumonia, tetanus, chicken pox, fever, malaria, running stomach, measles, polio, convulsions.
- G2. (Beh Salee) pneumonia, fever, measles, vomiting, running stomach, jerking disease, malaria, polio.
- G3. (Beh Town) diarrhoea, scabies, open mole, measles, thrush, tetanus.
- G4. (Bopalu) thrush, measles, open mole, malaria, whooping cough, crawl crawl, scabies, diarrhoea.
- G5. (Gbama Town) diarrhoea, cough, crawl crawl, thrush, measles, tetanus, whooping cough, polio.
- G6. (Gohgan Town) fever, cough, open mole (dehydration), vomiting, diarrhoea, tetanus, measles, scabies, whooping cough, polio.
- G7. (Mlay Town) measles, scabies, cough, thrush, measles, whooping cough, tetanus.
- G8. (Malema Town) malaria, vomiting, diarrhoea, fever, whooping cough, cough, pneumonia, measles, tetanus.
- G9. (Mecca Town) malaria, vomiting, diarrhoea, fever, whooping cough, cough, pneumonia, measles, tetanus.
- G10. (Suehn Town) measles, chicken pox, thrush, scabies, polio, diarrhoea, dehydration, vomiting, cough, fever, whooping cough, tetanus.

Appendix 4

Barriers to use of pre-natal care services in highland Bolivia. Examples of 'emergent themes'

Question string: (a) What do you do, what special precautions do you take, during pregnancy ... (b) ...during the delivery... (c) during the post-partum period?

- G1. The only problem that we know in this community is the *sobre-parto* (post-partum infection). This is when the mother doesn't take care of herself well, like she gets in contact with the cold or cold water; *sobre-parto* is a type of paralysis...your feet swell...you get very sick...and this is the reason many women are taken to the hospital, because if you don't get attended to rapidly you die.
- G2. After the delivery you can have several problems such as the woman swells up; she gets *sobre-parto*...this is because she doesn't take care of herself...she comes in contact with the cold or she drinks cold water...when we have a problem after delivery, we go directly to the doctor, because it is very dangerous and we could die. If we get haemorrhage, we go directly to the hospital. The other thing that can happen to us *pasmo*...that's when our hair and teeth fall out, when we drink cold water...for that reason we always drink boiled water...*sobre -parto* is this...the mother is yellow she swells up...she can't walk; she becomes very cold as though she had taken a bath in cold water...and afterwards she can die if she doesn't get rapid medical attention. Sometimes the mother with *sobre-parto* can be saved, if they take her quickly to the hospital...other times not even the doctor can save her...if it is very serious.
- G3. The only problem that she can have after delivery is *sobre-parto*...that is when the mother doesn't take care of herself well...she comes in contact with the cold...or after a day she begins to wash with cold water. When she gets sick with *sobre-parto* she should go straight to the hospital, because if she doesn't she can die.
- G4. We only know *sobre-parto*. That's when the mother gets up very quickly from the bed, and she comes in contact with the cold or a lot of heat, then she swells up, she has chills and a fever, and she suffers more than during the delivery. It has happened to me...my stomach started to hurt again after the delivery. My head hurt. I swelled up from my feet to my head...they had to take me to the hospital in Quillaquolla where they gave me lots of medicines and injections...I was so sick that I could not even open my eyes. Before we had the health post here we saw many cases of *sobre-parto* here, now that we have the post, we are well taken care of and nothing happens to us.
- G5. *sobre-parto*, *pasmo*, blood loss, and retained placenta.
- G6. One of the problems we know about is *sobre-parto*...that's when the mother swells up...she has chills...because she got up before she was healthy and strong...I got it because I got up too soon from the bed...the wind hit me...I swelled up all over...I couldn't even see, but I got better without any medicines.