

## Collecting data using a semi-structured interview: a discussion paper

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Accepted for publication 26 May 1993

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BARRIBALL K. L. & WHILE A. (1994) *Journal of Advanced Nursing* 19, 328–335

### **Collecting data using a semi-structured interview: a discussion paper**

This paper discusses some of the measures used by a research team to overcome threats to validity and reliability of a semi-structured interview exploring the perceptions and needs of continuing professional education among nurses in practice in two district health authorities.

### **INTRODUCTION**

Every research project consists of several phases, begins with the selection of a topic to study and ends with the dissemination of the research findings. Each step within this research process has the potential to influence the research output and it is important that all researchers attempt 'to avoid as much error as possible during all phases of the research in order to increase the credibility of the results' (Brink 1989).

In order to attain credibility, the research process must be both valid and reliable which, as Brink has argued, is a major challenge when a project is based upon a semi-structured interview. This challenge provides the focus for the discussion below, which highlights the attempts made by a research team to address the issues of validity and reliability in a project based upon a semi-structured interview method used on one occasion with each nurse respondent. References made to the research team's experiences during main data collection refer to only one of the district health authorities used in this study where 252 interviews have been conducted and data collection completed.

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### **BACKGROUND TO THE STUDY**

Whilst continuing professional education in nursing has attracted comparatively limited research interest during the last decade or so, a few studies have explored the views of nurses towards, and their participation in, continuing professional education (e.g. Studdy & Hunt 1980, Clarke & Rees 1989, Mackereth 1989, Lindsay 1990, Nugent 1990, Larcombe & Maggs 1991, Chapman & Hall 1992). Interestingly, Clarke & Rees (1989) have highlighted the significance of the non-respondents in many of these studies. They have argued that the evidence suggests that the views of nurses who have had minimal or no experience of continuing professional education may be little known because these nurses are unlikely to perceive the relevance of a questionnaire about continuing professional education to themselves and are, therefore, unlikely to have the motivation to respond.

### **Non-response**

Non-respondents can distort the final results of any research project and if response rates are low or particular groups are unrepresented within the whole sample, valid conclusions cannot be drawn (Williamson 1981). Indeed, non-response may mean that researchers are left with a 'highly selective sample of individuals' who are

unrepresentative of the total population (Denzin 1989). In this context, ensuring that the categories of nursing staff under- or un-represented in existing research findings (i.e. night staff, enrolled nurses, nurses working part-time and nursing auxiliaries) were recruited to the study became a major consideration and influenced both the design and method selected.

### Design

As it was impractical to attempt to interview every nurse employed by the two district health authorities selected for this study, it was decided that a total population survey or census sample of randomly selected clinical units would provide the best sample to overcome bias inherent in other published studies. It was anticipated that a census sample within each selected clinical unit had the potential to secure the inclusion of staff known to have differential access, views and experience of continuing professional education.

The clinical units were randomly selected by the research team to represent the specialities of paediatrics, community care, general medicine and surgery, care of the elderly, mental health, maternity and learning disabilities. While these are not exhaustive of the variety of units available within any one district health authority, it was anticipated that this broad selection would improve the representativeness of the sample and improve the validity of the findings. It may be the case, for example, that nurses practising in different specialities view continuing professional education differently.

Further, there is the possibility that clinical specialities tend to employ different types of staff (i.e. enrolled nurses, nursing auxiliaries and permanent night staff) who may, or may not, vary in their perceptions and needs to continuing professional education.

Two district health authorities were recruited to the study to reduce the potential bias which one particular continuing professional education policy may create. However, as both sites are within the same regional health authority and, therefore, working within the same directives, comparisons between the two district health authorities are possible and may produce some interesting and useful findings.

### METHOD

There were a number of advantages to using the personal interview as the method for data collection:

- 1 it has the potential to overcome the poor response rates of a questionnaire survey (Austin 1981);

- 2 it is well suited to the exploration of attitudes, values, beliefs and motives (Richardson *et al.* 1965, Smith 1975);
- 3 it provides the opportunity to evaluate the validity of the respondent's answers by observing non-verbal indicators, which is particularly useful when discussing sensitive issues (Gordon 1975);
- 4 it can facilitate comparability by ensuring that all questions are answered by each respondent (Bailey 1987);
- 5 it ensures that the respondent is unable to receive assistance from others while formulating a response (Bailey 1987).

In the context of the above discussion, the widely acknowledged higher response rates obtained with the personal interview technique was particularly appealing (e.g. Cormack 1984, Treece & Treece 1986, Bailey 1987). Kidder (1981) has suggested that response rates of between 70% and 80% are not untypical for interview surveys as many potential respondents who do not have the confidence to write down responses will often participate. Perhaps more importantly, face to face contact with a researcher can motivate respondents to participate who would otherwise not bother with a questionnaire (Gordon 1975).

Once access to the clinical units had been agreed, initial contact with each member of staff included in the sample was then made through a personal letter explaining who the researchers were and the purpose of the research project. A contact telephone number was also given if anyone required more information. As the two nurse researchers made regular and informal visits to each unit all questions or queries were dealt with in person and no one used the contact telephone number to gain further project details. However, the contact telephone was used by respondents to cancel or re-arrange interviews and became a valuable link between the research team and the sample group.

Each unit included in the study was also given a poster about the project which included photographs of the two nurse researchers so that all staff, including those not in the sample (i.e. student nurses, ward clerks and doctors), and patients and visitors were informed that a research project was in progress. These two preliminary steps made initial face to face contact between the nurse researchers and individuals in the sample more meaningful.

### Outcomes

Each member of the sample group was approached personally by one of the nurse researchers to discuss the

project, answer any questions and arrange a convenient time for the interview. This high level of face to face contact with each potential respondent had three important outcomes:

- 1 interest and confidence in the project visibly increased on a number of the units as familiarity with the nurse researchers grew;
- 2 nurses who were perhaps hesitant about participating initially were able to think about the project and ask questions over a period of several weeks;
- 3 the researchers were able to discuss with non-respondents their reasons for not wishing to participate and ask them if they would complete a brief questionnaire.

The latter two outcomes are of particular significance in the light of Clarke & Rees' (1989) discussion about the validity of existing research findings in the field of continuing professional education in nursing.

First, night staff, nurses near retirement, nursing auxiliaries and part-time staff often expressed surprise that they were to be included in the study and needed reassurance that their participation was valued and relevant. Many of these nurses would not have participated in this study without personal contact with one or both of the nurse researchers and it is unlikely that they would have completed an exploratory questionnaire about continuing professional education without encouragement and support.

Second, the information obtained from non-respondents ( $n=13$ ) will be used in analysis to explore whether a significant relationship between, for example, non-participation in continuing professional education and non-response exists and will, therefore, be useful in discussing the validity of the final results. Only two nurses did not wish to complete the questionnaire.

### The semi-structured interview method

Semi-structured interviews were selected as the means of data collection because of two primary considerations. First, they are well suited for the exploration of the perceptions and opinions of respondents regarding complex and sometimes sensitive issues and enable probing for more information and clarification of answers. Second, the varied professional, educational and personal histories of the sample group precluded the use of a standardized interview schedule.

Gordon (1975) has argued that the wording and sequence of all the questions in a standardized interview are exactly the same for each respondent so that: '... we

can be sure that any differences in the answers are due to differences among the respondents rather than in the questions asked'.

In other words, the objective is to standardize the stimulus (Smith 1975, Abrahamson 1983, Mann 1985). Implicit in this reasoning is that respondents share a common vocabulary and that every word has the same meaning to every respondent (Nay-Brock 1984, Denzin 1989). In contrast, the opportunities to change the words but not the meaning of questions provided by a semi-structured interview schedule acknowledges that not every word has the same meaning to every respondent and not every respondent uses the same vocabulary (Treece & Treece 1986).

Clearly, in this type of interview, validity and reliability depend, not upon the repeated use of the same words in each question, but upon conveying equivalence of meaning (Denzin 1989). It is this equivalence of meaning which helps to standardize the semi-structured interview and facilitate comparability.

### Language barriers

The advantage of using the semi-structured interview technique when surveying a heterogeneous group was acutely highlighted in this study by a small number of respondents ( $n=14$ ) whose understanding of English was limited. The relationship between non-participation in research studies and language barriers has been widely acknowledged in the literature (e.g. Word 1977, Henley 1979). However, these respondents were willing to participate in the study and it was necessary to include them to secure the validity of the final results. It may be the case that their experiences, perceptions and needs of continuing professional education differ significantly from others in the sample.

The challenges of conducting interviews with respondents for whom English is a second language are explored in detail by Marshall & While (in press). In the context of this paper it is important to note that the flexibility of the semi-structured interview method ensured that through the careful use of words, valid and reliable data were obtained from this special group except for one individual, where the language barrier was too great and the interview had to be abandoned.

### Tacit assumption

Lazarsfeld (1954) has discussed in some detail the significance of question construction in sociological research and has argued that all questions should conform to the

three principles of specification, division and tacit assumption. Specification refers to the focus of each question; division to the appropriate sequence and wording of questions; and tacit assumption to the determining of the true meanings that lie behind respondents' answers.

The principles of specification and division were largely addressed in the construction and subsequent testing of the interview schedule on a group of nurses not included in the main study. This is discussed in more detail below. Particularly relevant here, however, is Lazarsfeld's principle of tacit assumption. A wide range of ambiguous words and phrases such as 'she was caring', 'she was a good nurse' or 'she had the right approach' were commonly used by respondents in almost every interview.

However, the meanings that lie behind the use of these and other phrases are likely to vary. Even basic everyday words like nurse and nursing have the potential to cause confusion. Midwives and health visitors, for example, are not 'nurses' in the same way as someone working on an acute surgical unit. Indeed, it is widely acknowledged in the literature that nearly all words can be interpreted differently and it is important that interviewers are constantly aware of this (Cannell & Kahn 1968, Smith 1975).

In order to ensure that data reveal 'what we think they reveal' (Treece & Treece 1986), freedom to probe all unclear or ambiguous words and phrases is essential. The semi-structured interview technique provided the nurse researchers in this study with flexibility to validate the meaning of respondents' answers.

### Probing

The semi-structured interview, therefore, not only gives interviewers some choice in the wording to each question but also in the use of probes (Hutchinson & Skodal-Wilson 1992). Probing, in particular, can be an invaluable tool for ensuring reliability of the data as it:

- 1 allows for the clarification of interesting and relevant issues raised by the respondents (Hutchinson & Skodal Wilson 1992);
- 2 provides opportunities to explore sensitive issues (Nay-Brock 1984, Treece & Treece 1986);
- 3 can elicit valuable and complete information (Gordon 1975, Austin 1981, Bailey 1987);
- 4 enables the interviewer to explore and clarify inconsistencies within respondents' accounts;
- 5 can help respondents recall information for questions involving memory (Smith 1992).

### Social desirability

Probing also maximises the potential for interactive opportunities between the respondent and interviewer which helps to establish a sense of rapport and reduce the risk of socially desirable answers (Patton 1990). Denzin (1989) has suggested that:

Because many interviews convey implicit demands to the respondent (i.e. social desirability) there is often an attempt to present a self that meets these demands.

In other words, respondents answer in what they believe is the 'preferred social response whether it is true or not' (Brink 1989). This is what Orne (1962) called the demand-characteristic effects of the personal interview situation.

These demand characteristic effects can become more complex when the respondent and the interviewer differ in ethnicity, gender, socio-economic status, education or age (see Bailey 1987 for a detailed discussion). The self-presentation of the interviewer, however, in terms of dress, etiquette and manner can largely overcome this potential for bias and go a long way towards putting the respondent at ease (Denzin 1989); although it is worth acknowledging that the respondent can intimidate the interviewer (Bailey 1987). Further, the full use of interactive opportunities can break down interviewer/respondent barriers, reduce tensions and maintain rapport so that the respondent keeps talking (Oppenheim 1992).

### GOOD VERSUS POOR RESPONDENTS

Individual respondents and the circumstances surrounding each research project also have an impact upon validity and reliability. Dobbert (1982), for example, has discussed the significance of what he has called 'good' informants to the research process and has described them thus:

They appear comfortable and unstrained in interactions with the researcher; they are generally open and truthful although they may have certain areas about which they will not speak or where they will cover up; they provide solid answers with good detail; they stay on the topic or related important issues; they are thoughtful and willing to reflect on what they say.

In reality, not every respondent has these characteristics and it may be impossible for the interviewer to overcome the problems posed by, for example, repeated evasions or refusals to answer questions. A chapter aptly entitled 'The conflict paradigms of society and investigative field research' by Douglas (1976) provides a detailed

discussion of the problems interviewers can experience in obtaining valid data from respondents.

Morse (1989) has argued that people agree to participate in researcher projects for a number of reasons and not just because they are interested in the topic under discussion. For example, altruism on the part of the respondent towards the interviewers or intellectual and emotional satisfaction can influence a respondent's decision to participate (Nay-Brock 1984) as was the case in this study. However, if the topic of a research project is not important to the respondent, the motivation to give accurate and full answers to questions may be low (Gordon 1975, Moser & Kalton 1986).

Indeed, Oppenheim (1992) has stated that:

Perhaps the most important determinant both of response rate and of the quality of the responses is the subject's motivation.

There was a potential in this study that respondents who had not participated in continuing professional education might not agree to be interviewed or, if they were, be poorly motivated to give complete and full information during the interview. While the overall response rate has been good — 95% in the first data collection site — a few respondents have been reluctant to discuss in any detail a number of issues raised during the course of the interview and a few have been openly hostile even though they agreed to participate.

### Validity

Conclusions from these field observations can only be drawn after full and extensive analysis, but clearly the willingness of respondents to be 'good' informants has implications for the validity of the data. Uncertainty about the effects of Trust status, hospital and ward closures, planned or current changes within clinical units, the threat of redundancy and skill mix as well as little or no interest in continuing professional education were among several reasons given by some respondents for:

- 1 refusing to be interviewed,
- 2 feeling apprehensive about being interviewed,
- 3 not wishing to answer certain questions during the interview,
- 4 refusing to have the interview audio taped.

While it is impossible for researchers to always control or plan the circumstances under which a research project takes place, interviewer friendliness, approach and manner towards respondents can help enormously with securing validity and reliability of the data. As Patton

(1990) has stated: 'The quality of the information obtained during an interview is largely dependent on the interviewer'.

Visiting each unit over a period of weeks and conducting interviews at respondents' convenience at the weekends or late in the evening for the night staff, for example, consolidated interest in the project and secured good response rates. Informal contact and ad hoc visits to all staff on each unit also improved the rapport between respondents and the two nurse researchers outside as well as within the personal interview situation itself.

In addition, classificatory data about each respondent (i.e. age, gender), a record of why some respondents did not wish to participate in the interview, specific information about each clinical unit (i.e. recent changes) and field notes made by the interviewer about each interview (e.g. the availability of a quiet room free from interruptions, time constraints, non-verbal cues) have given the research team detailed information regarding the data collection phase which will enhance the validity and reliability of the research findings.

### Audio tapes

The use of audio tapes when permitted has ensured that an identical replication of the contents of each interview is available which will facilitate analysis. May (1989) has argued that:

Given the dynamic nature of interviewing and the subtle problems of topic control and data interpretation, the procedures used to log data must be given considerable attention.

Audio taping is frequently the method of choice, as it provides a detailed insight into the performance of both the respondent and the interviewer. Further, access to the nuances of the interactions between respondent and interviewer (e.g. intonations, pauses) help validate the accuracy and completeness of the information collected. Audio taping also reduces the potential for interviewer error by, for example, recording data incorrectly or cheating by logging an answer to a question that was not asked.

### THE DEVELOPMENT OF THE INTERVIEW SCHEDULE

A faulty design in the development of any research tool will distort the final results (Denzin 1989). Therefore, after the design and method had been selected a key

phase in the project was the development of an interview schedule which was both exploratory in order to elicit abstract concepts such as perceptions and sufficiently standardized to facilitate comparability between respondents during analysis.

An extensive review of the literature informed the early stages of construction by delineating areas of interest and relevance that should be covered by the interview. These broad areas were subsequently broken down into more manageable groupings with notes detailing the purpose for their inclusion prior to question formation. The first draft was then exposed to what Mann (1985) had called internal testing — a valuable preliminary assessment by colleagues in which ambiguities, leading questions and general criticisms are discussed and corrected.

The final pilot draft was judged for its content validity by a number of experts to assess the appropriateness and completeness of the contents of the interview schedule in relation to its subject domain and purpose. These extensive discussions about the inclusion and exclusion of certain questions and the arrangement and wording of the interview schedule were invaluable to its development.

The final pilot draft was exposed to the rigours of the field under conditions similar to those anticipated in the main study to assess:

- 1 whether respondents could and would answer the questions asked during the course of the interview;
- 2 whether the interview schedule would elicit true differences in the perceptions, attitudes and views towards the need for, and the experiences of, continuing professional education between and among nurse respondents;
- 3 the performance of the two interviewers in real interview situations.

Mann (1985) has recommended that respondents should be considered throughout the construction of an interview schedule, 'since he or she will be doing the work by supplying the answers to the questions'.

It is easy for researchers, however, to lose sight of the respondent and fail to assess whether, for example, a question is ambiguous or too complex or whether the question sequence is likely to correspond logically with respondents' experiences. The pilot phase enabled the research team to make informed changes and adjustments to the interview schedule before main data collection. Analysis of the pilot data established the efficiency of the interview schedule in exploring the perceptions and needs of continuing professional education among nurse

respondents and helped inform how data will respond to analysis.

The opportunity to identify each interviewer's ability to clarify inconsistencies within respondents' accounts; in the use of appropriate probing in order to obtain complete and accurate information; and in ensuring the stability of data collection in and between interviews was invaluable in developing the skills of the two interviewers.

### **Interviewer training**

The success of the semi-structured interview method clearly relies upon the skills of each interviewer in making a number of difficult field decisions. Adjusting each interview, for example, in order to obtain accurate and complete data yet maintaining sufficient standardization to secure the validity and reliability of data is a major challenge to interviewers and depends upon thorough training (Moser & Kalton 1986).

In this study, one of the interviewers had been involved with the project from the beginning and the second was orientated to the aims and objectives of the project when the pilot draft had been developed. Training essentially focused on two main areas:

- 1 establishing competent use and understanding of the specific interview schedule being used in the study;
- 2 developing an awareness of the errors or bias which can arise with the personal interview technique.

Training began with a review of the existing literature on continuing professional education in nursing and an introduction to selected research texts on interviews and interviewing. When specific work began on the interview, this background knowledge helped to contextualize the contents and structure of the schedule. Interviewers must have some knowledge of the subject domain being explored in order to obtain valid and complete data during the interview. As Treece & Treece (1986) have argued:

If they are unaware of many of the ramifications of the situation being explored, important data will be missed that perhaps would have a significant bearing on the case.

Extensive discussion at this stage highlighted the meaning of, and the information required by, each question in the interview schedule. Interviewer competence in handling the schedule was facilitated by several informal practice sessions with colleagues. The audio tapes of these 'dry runs' were used only by the interviewers as self-evaluation tools so that questions and queries could be raised and discussed with the research team.

Using the first pilot interview schedule in the field not only provided each interviewer with valuable experience but also formed the basis of subsequent training sessions before the main data collection. The use of more than one interviewer raises problems of balancing 'flexibility and consistency' not only between each interview but also between each person doing the interviewing (May 1989). Listening to and reading a random selection of taped or transcribed interviews enabled the research team to identify weaknesses in and between the two interviewers. Further, the systematic analysis of taped interviews highlighted the use of leading questions, inappropriate probing or what Gordon (1975) has called the 'subtle manifestations of the persuasive urge'.

### Maintenance of interviewing skills

Frequent subsequent discussions and review of these interviews secured each interviewer's confidence and competence for the main data collection. Similar training sessions have continued on a regular basis throughout the data collection phase to prevent interviewer drift and fatigue. Further, regular meetings between the two interviewers in this study have also been valuable opportunities to boost morale and deal with any problems as they arise in the field.

While some problems can be anticipated in advance and addressed before main data collection commences, such as the potential for interviewer bias, unexpected or unforeseen circumstances may arise especially if data collection occurs over a period of time and in multiple locations. In this study, the existence of significant language barriers, for example, had not been anticipated. However, access to the research team for immediate advice on issues that have the potential to threaten validity and reliability has proved essential when using an interview as the method for data collection.

### CONCLUSION

This paper has highlighted the attempts made by a research team to address the issues of validity and reliability in a project based upon a semi-structured interview used on one occasion with each nurse respondent. A semi-structured interview was selected as the means for data collection because the varied professional, educational and personal histories of the sample group precluded the use of a standardized interview schedule; and in order to explore respondents' opinions, clarify interesting and relevant issues, elicit complete information and explore sensitive topics within each interview, some freedom to probe was essential.

Further, opportunities for face to face contact with a researcher stimulated interest in the project, established a sense of rapport between respondents and the two nurse researchers and encouraged nurses typically un- or under-represented in previous studies in the field of continuing professional education in nursing to be interviewed and thus improve the validity of the final results. Indeed, the use of a semi-structured interview provided the research team in this study with the best method to explore the perceptions and needs of continuing professional education among a diverse group of nurses practising in different clinical areas within two district health authorities.

### Acknowledgements

Many thanks to Sara Marshall, research assistant, for her help with the data collection.

The authors are currently engaged in: 'A study to explore the perceptions and needs of continuing professional education among nurses in practice in two district health authorities in South West Thames Regional Health Authority' funded by SWTRHA.

### Disclaimer

Responsibility for the views expressed, issues of interpretation, questions of inclusion and omission, remain with the research team and do not necessarily reflect the views of South West Thames Regional Health Authority.

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