

CHAPTER 2

Research design and methodology

2.1 INTRODUCTION

Chapter 1 discussed the background to the study and briefly outlined the research design and methodology. The study was carried out in two phases. Phase 1 explored and described professional nurses' perception of the implementation of a quality circles programme in a public hospital in the Eastern Cape Province. Phase 2 entailed the development of guidelines for the implementation of quality circles in public hospitals. This chapter discusses the research design and methodology.

2.2 PURPOSE OF THE STUDY

The study wished to answer the question of how professional nurses perceive the implementation of a quality circles programme in a public hospital in the Eastern Cape Province. To answer this question, the objectives were to examine the nurses' perception and to develop guidelines for the implementation of quality circles in public hospitals.

2.3 RESEARCH DESIGN

A research design guides the researcher in planning and implementing the study in a way that is most likely to achieve the intended goal (Burns & Grove 1997:225). The research design followed in this study is qualitative, explorative, descriptive and contextual.

2.3.1 Qualitative

According to Brink and Wood (1998:337), a qualitative design is directed towards discovering or uncovering new insights, meanings and understandings. Qualitative research is an in-depth analysis of the problem in order to understand the "what" and "why" of human behaviour. Cresswell

(1994:145) states that qualitative research is interested in means that explain how people make meaning (sense) of their experiences and their views of the world.

The researcher used a qualitative research design to explore professional nurses' perception of the implementation of a quality circles programme in a public hospital in the Eastern Cape Province.

2.3.2 Explorative

One of the characteristics of a qualitative research design is that it is explorative. The broad purpose of exploratory research is the exploration of a relatively unknown research area in order to gain new insight into the phenomenon being studied (Brink & Wood 1998:308-309). This study adopted an exploratory approach to gain insight into the professional nurses' perception of the implementation of a quality circles programme. The researcher therefore employed in-depth semi-structured individual interviews to explore the perception of the implementation of quality circles in a public hospital (Brink & Wood 1998:309).

2.3.3 Descriptive

In qualitative research, it is important for researchers to describe what they observe during the fieldwork. In the case of this study, the aim was to present an accurate description of the professional nurses' perception of the implementation of a quality circles programme (Brink & Wood 1998:287). Based on the nurses' perception, the researcher further wished to develop guidelines to facilitate the implementation of a quality circles programme in public hospitals.

2.3.4 Contextual

Once the professional nurses' perception of the implementation of a quality circles programme has been described, it is important to contextualise the findings. Botes (1995:6) points out that values direct human activities and thinking, therefore researchers must take cognisance of the values within a certain temporal-spatial context. In this study, the findings are understood within the context of professional nurses of the Eastern Cape who are Xhosa speaking and belong to the ethnic group of the Xhosas.

2.4 RESEARCH METHODOLOGY

The researcher had to obtain permission to conduct the study from the Chief Medical Superintendent of the hospital where the study was to be conducted. The researcher also sought permission from the professional nurses who were eligible to participate in the study.

A letter explaining the purpose of the study was sent to the Chief Medical Superintendent. The researcher received written permission from the Chief Medical Superintendent.

Permission was also sought from the eligible professional nurses, who signed informed consent forms for the interviews to be audio tape-recorded. The study took place in an urban-based public hospital in the Eastern Cape Province.

2.4.1 Ethical considerations

The researcher obtained the necessary permission to conduct the study from the Chief Medical Superintendent as well as from the respondents in the form of written consent for the interviews (Burns & Grove 1997:666; Streubert & Carpenter 1999:33-41). The respondents were informed of the following rights:

- *Anonymity and confidentiality.* The respondents were assured that their names would not be disclosed or linked to any description of professional nurses' perception of the implementation of the quality circles programme. All information received from them would be treated with the utmost confidentiality.
- *Protection from discomfort and harm.* The researcher informed the respondents that they were free to terminate the interview at any time should they so wish (Burns & Grove 1997:666).
- *Scientific objectivity.* The researcher included all the data, including unsupportive or negative remarks/perceptions. This helped the researcher to come to grips with personal values and biases that might impact on the outcome (Wilson 1989:67).
- *Integrity.* The researcher did not withhold any information about the study's possible risks, discomforts or benefits or intentionally deceive study subjects on these matters (see appendix 2 for a letter of consent by participants) (Wilson 1989:68).

2.4.2 Population and sampling

Polit and Hungler (1995:33) define a population or target population as the entire set of population or individuals or elements that meet the sampling criteria. In this study, 425 professional nurses working in the public hospital where the study took place, constituted the population. The population consisted of all the professional nurses who participated in the quality circles programme.

2.4.2.1 Sampling criteria

A sample is a subset of a target population and contains all the characteristics of the target population (Polit & Hungler 1995:230). Sampling criteria refer to the characteristics that lead to the selection of the informant in the sample. The sampling criteria for this study were:

- *Gender*. Participants could be male or female, as the findings would be understood with reference to both sexes.
- *Rank*. Participants should be professional nurses.
- *Ethnicity*. Participants had to be of the same ethnic group (in this case, Xhosa). It is very important for the participants to belong to the same ethnic group as results are readily understood within a certain context and are not value-free.
- *Language*. The ability to speak Xhosa or English was a strong recommendation.
- *Work experience*. A working experience of at least two years at this public hospital was required as this period guaranteed that the participants were acquainted with quality circles.
- *Quality circle involvement*. Participants should have served in a quality circle in their clinical area.
- *Quality circle management*. Participants should have had one week's induction in quality circle management.
- *Permission*. Participants had to give permission for the interviews to be tape-recorded.

2.4.2.2 *Sampling technique*

Purposive or judgemental (i.e., non-probability) sampling was used. This technique involves non-random sampling of informants that leads to non-representative sampling of the population (Wilson 1989:261). In this study, the number of participants interviewed is not important, but the researcher collected data until saturated. According to Morse (1995:147), saturation of data is reflected by repeated themes with no new themes emerging.

2.4.3 **Data gathering**

Once the participants had been selected, data collection began. Data was gathered using two techniques: in-depth individual semi-structured interviews and observation in the form of field notes.

- **In-depth individual semi-structured interview**

Semi-structured interviews were used to collect data. According to Burns and Grove (1997:353), an interview involves verbal communication between the researcher and the respondent during which information is provided to the researcher.

The semi-structured interview encourages participants to converse freely about the research question(s). The researcher focused on issues of particular importance to the research question (Polit & Hungler 1995:272; Rose 1994:24; Wilson 1989:437). According to Rose (1994:24), semi-structured interviews could yield valuable data if decisions are taken on who conducts the interview, where they should take place, and how information should be recorded, stored and analysed. In this study, the researcher conducted in-depth semi-structured individual interviews with professional nurses who met the eligibility criteria.

- **Preparation for data collection**

The researcher pre-tested the interview technique in order to practise using the tape recorder, transcription and coding of data. Gray (1994:66) points out that pre-test allows the researcher to decide how many interviews to conduct per day as well as the intervals between them.

- **The interview**

On the day of the interview, the researcher arrived an hour before the scheduled time in order to set up the room and tape-recording equipment. The researcher ensured successful interviews by providing a friendly, relaxed environment, as free of distraction as possible. To allow the free flow of ideas the interviewer (researcher) and the interviewee sat at approximately right angles to each other to facilitate eye contact and allow the researcher to observe any non-verbal gestures without appearing threatening (Gray 1994:67). Coffee or tea was served or offered before the interview as disruption would ensue if offered during the interview and could distract the interviewer if offered at the end of the interview (Gray 1994:67).

The researcher facilitated communication and encouraged informants to talk about their perceptions of the implementation of the quality circles programme by imparting information, probing, clarifying, paraphrasing, and checking perception.

The following question was asked to all interviewees: **“How do you perceive the implementation of the quality circles programme in this hospital?”**

- **Observation in the form of field notes**

Field notes are notations generally made to document observations during an interview. According to Streubert and Carpenter (1999:26), field notes should indicate/express what researchers see, think or experience.

In this study, the researcher recorded observational, theoretical, methodological and personal field notes during the interviews (Wilson 1989:434-435).

- Observational notes (ONs) entailed descriptions of events experienced through watching and listening during an interview. They contained the “who, what, how and where” of a situation, and as little interpretation as possible (Wilson 1989:434).
- Theoretical notes (TNs) were purposeful attempts to derive meaning from the observational notes. The researcher interpreted the observations in order to build his analytical scheme (Wilson 1989:435).

- Methodological notes (MNs) were instructions to the researcher, reflecting on his tactics and reminders about methodological approaches that might be fruitful (Wilson 1989:435).
- Personal notes (PNs) were about the researcher's own relations and reflections and experiences (Wilson 1989:435).

Data analysis commenced as soon as the data collection had been completed.

2.4.4 Data analysis

The tape-recorded interviews were transcribed verbatim and analysed using Tesch's method (Cresswell 1994:155). Descriptive methods of analysis were employed. Data were listed and grouped into preliminary groupings of descriptive themes agreed upon by the researcher and the supervisor as an expert in the field of research and quality improvement in health care. The researcher analysed the data systematically step by step as follows:

- The researcher got a sense of the whole. Read through all transcriptions carefully. Ideas were jotted down as they came to mind.
- The researcher picked one document (one interview) from the top of the pile. The researcher went through it, asked himself, what it was about. Did not think about the "substance" of the information but rather its underlying meaning. Wrote down thoughts in the margin. Then the researcher clustered together similar topics into columns arranged as major topics, unique topics and leftovers.
- The researcher took this list and went back to the data. He abbreviated the topics as codes and wrote the codes next to the appropriate general segments of the text. He tried a preliminary organising scheme to see whether new categories and codes emerged.
- The researcher used descriptions for the topics and divided them into categories. The number of topics was reduced by relating them to each other. Interrelationships were also indicated.
- The researcher recoded the existing data. The researcher then undertook a literature review to compare categories and findings.

2.4.5 Literature review

According to Streubert and Carpenter (1999:20), it is important to conduct a literature review after analysing the data. In a qualitative study, the purpose of this is to place the findings in the context of what is already known. Streubert and Carpenter (1999:111) add further that a literature review assists researchers to fill in the missing pieces in the emerging theory.

The literature review enabled the researcher to identify the similarities and differences between the present and previous studies as well as the potential contribution of this study (Streubert & Carpenter 1999:20).

For results to be authentic, they must be trustworthy or valid.

2.4.6 Trustworthiness

Lincoln and Guba's (1985:290) model was used to ensure valid results. The model applies the criteria of truth value, applicability, consistency and neutrality. These criteria were used according its applicability in the context of the study.

Table 2.1 Guba's model of trustworthiness

CRITERION	QUALITATIVE APPROACH	QUANTITATIVE APPROACH
Truth value	Credibility	Internal validity
Applicability	Transferability	External validity
Consistency	Dependability	Reliability
Neutrality	Confirmability	Objectivity

Source: (Lincoln & Guba 1985:290)

2.4.6.1 Truth value (credibility)

Truth value (credibility) establishes how confident the researcher is with the truth of the findings based on the research design, informants and context. According to Lincoln and Guba (1985:80), in qualitative research truth value is obtained from the discovery of human experiences as they are lived and perceived by the informants. Sandelowski (1986:30) states that a qualitative study is credible when it presents such an accurate description or interpretation of human experiences that others can immediately recognise the description. In this study the following strategies for credibility were employed:

- *Prolonged and varied field experience.* The researcher has 22 years' experience in the health care facility where the study was conducted, which indicates his knowledge of the field. He took four months preparing for the fieldwork.
- *Referential adequacy.* The researcher applied a pilot interview that equipped him for the eventualities of the fieldwork. This pilot interview was discussed with the supervisor/expert.
- *Reflexivity.* The researcher used a field journal to reflect his behaviour and experience. The researcher also used the field journal to jot down observations during the interview.
- *Triangulation.* The researcher used in-depth individual semi-structured interviews and field notes for data collection. The researcher also used triangulation of design, qualitative research, exploratory research, descriptive research and contextual design. Data of high quality was gleaned from the informants.
- *Peer examination.* The researcher was assisted by two experts in qualitative research to ensure that high standards of research were maintained throughout the study.
- *Member checking.* The researcher continuously checked information gathered with the informants to confirm it. The researcher conducted a literature review to link the findings with previous research. The researcher used a tape recorder to capture interviews verbatim.
- *Authority of the researcher.* The researcher underwent extensive training in conducting interviews to ensure the quality of the data.
- *Structural coherence.* The research process was conducted within Donabedian's (1980) model for evaluating of health care services (Bowling 2002:9).

2.4.6.2 *Applicability*

Applicability refers to the degree to which the findings can be applied to other contexts and settings or with other groups (Lincoln & Guba 1985:80). Sandelowski (1986:32) contends that generalisation is irrelevant in qualitative research as these studies are undertaken in naturalistic settings with few controlling variables. Lincoln and Guba (1985:81) use fittingness or transferability instead of generalisation as the criterion for the applicability of qualitative data. Lincoln and Guba (1985:81) go on to say that qualitative research meets this criterion when the findings fit into contexts outside the study situation, that are determined by the degree of similarity of goodness of fit between two contexts.

2.4.6.3 *Consistency*

According to Lincoln and Guba (1985), consistency refers to whether the findings would be consistent if the study were replicated with the same informants or in a similar context. The key to qualitative research is to learn from informants rather than control them.

In this study the researcher employed the following strategies to ensure consistency:

- *Dependability audit.* The researcher conducted in-depth semi-structured individual interviews, which were audio tape-recorded to ensure an audit trail. The researcher use Cresswell's method of data analysis that can be followed (trailed) step by step. A literature review verified the collected data.
- *Dense description.* Full method of data collection and analysis was explained.
- *Triangulation.* Triangulation was used in the same manner as for credibility.
- *Peer examination.* This strategy was used in the same manner as for credibility.

2.4.6.4 *Neutrality*

Lincoln and Guba (1985:82) shift the emphasis of neutrality in qualitative research from the researcher to the data. In other words, data neutrality but not investigator neutrality is the criterion of neutrality, and this can be achieved when truth value and applicability are established. In this study, the researcher employed the following strategies to ensure neutrality:

- *Confirmability.* An expert was selected to audit and look at the standards of the research.
- *Triangulation.* Was used in the same manner as for credibility.
- *Reflexibility.* The researcher kept a field journal of his behaviour and experiences by jotting down his observation during the interviews as field notes.

2.4.7 Developing guidelines

The researcher employed a deductive strategy to develop guidelines for the implementation of a quality circles programme in public hospitals.

2.5 CONCLUSION

This chapter discussed the research design and methodology, including the research question and objectives, and trustworthiness. Chapter 3 presents the research findings and literature review.