CHAPTER 3

Research methodology

3.1 INTRODUCTION

This chapter deals with the research methodology of the study, including the research design, setting, population, sample and data-collection instrument.

3.2 RESEARCH DESIGN

Polit and Hungler (1999:155) describe the research design as a blueprint, or outline, for conducting the study in such a way that maximum control will be exercised over factors that could interfere with the validity of the research results. The research design is the researcher's overall plan for obtaining answers to the research questions guiding the study. Burns and Grove (2001:223) state that designing a study helps researchers to plan and implement the study in a way that will help them obtain the intended results, thus increasing the chances of obtaining information that could be associated with the real situation. This study used a quantitative exploratory descriptive design to identify, analyse and describe factors contributing to adolescent mothers' non-utilisation of contraceptives to prevent unplanned pregnancies. The HBM was used as a framework for collecting data in the Piet Retief (Mkhondo) area of the RSA. The identified factors could then be categorised into individual perceptions, contributing factors and variables affecting the likelihood of adolescent women initiating and maintaining actions to use contraceptives effectively to avoid unplanned pregnancies.

3.2.1 Quantitative research
This study attempted to quantify factors identified as contributing to adolescent mothers' non-utilisation of contraceptives in the Piet Retief (Mkhondo) area. Quantitative data can be transposed into numbers, in a formal, objective, systematic process to obtain information and describe variables and their relationships (Brink & Wood 1998:5; Burns & Grove 1993:26).

3.2.1.1 Characteristics of quantitative research

Quantitative research has the following characteristics (Brink & Wood 1998:305; Burns & Grove 1997:27-30 and 1999:192):

- There is a single reality that can be defined by careful measurement.
- It is usually concise.
- It describes, examines relationships, and determines causality among variables, where possible.
- Statistical analysis is conducted to reduce and organise data, determine significant relationships and identify differences and/or similarities within and between different categories of data.
- The sample should be representative of a large population.
- Reliability and validity of the instruments are crucial.
- Comprehensive data collected by employing different methods and/or instruments should result in a complete description of the variable or the population studied.
- It provides an accurate account of characteristics of particular individuals, situations, or groups.

3.2.2 Exploratory descriptive design

The study was exploratory because it explored the factors contributing to adolescent mothers' non-utilisation of contraceptive services in the Piet Retief (Mkhondo) area of the RSA. Exploratory research studies what has not previously been studied and attempts to identify new knowledge, new insights, new understandings, and new meanings and to explore factors related to the topic (Brink & Wood 1998:312; Brink 1996:11). The research design was exploratory because it met the criteria
described by Polit and Hungler (1999:17), namely that this research attempted to investigate the full nature of the phenomenon (of adolescent mothers’ failure to use contraceptives effectively in the Piet Retief area), the manner in which it becomes manifested as well as related factors that could influence adolescent mothers’ non-utilisation of contraceptives. Results of exploratory studies are not necessarily generalisable to a larger population but provide a better understanding of the sample being examined (Burns & Grove 1999:296). The researcher deemed this approach to be suitable for gaining a better understanding of why adolescent mothers in the Piet Retief (Mkhondo) area failed to utilise contraceptives effectively to prevent unplanned pregnancies.

Exploratory research examines the relevant factors in detail to arrive at an appropriate description of the reality of the existing situation (Brink & Wood 1998:283-286). Descriptive research provides an accurate account of characteristics of a particular individual, event or group in real-life situations (Polit & Hungler 1999:189). A descriptive design may be used for the purpose of developing theory, identifying problems with current practice, justifying current practice, making judgements, or determining what others in similar situations are doing (Waltz & Bausell 1981:7). The purpose of a descriptive design is to provide the perceptions and views of the respondents about the phenomenon studied (Burns & Grove 1993:293). This study attempted to identify and describe factors that contributed to adolescent mothers’ non-utilisation of contraceptives and categorise their frequencies.

3.2.2.1 Characteristics of an exploratory descriptive research design

According to Uys and Basson (1991:38), an exploratory descriptive research design has the following characteristics:

- It is a flexible research design that provides an opportunity to examine all aspects of the problem being studied.
- It strives to develop new knowledge.
- The data may lead to suggestions of hypotheses for future studies.
3.3 RESEARCH SETTING

The research setting refers to the place where the data are collected. In this study, data were collected at two well baby clinics in the Piet Retief (Mkhondo) area. Although the name Piet Retief was changed to Mkhondo during the course of this study, the name Piet Retief was retained for the purposes of this study, as it was mentioned in the title approved for the study by the University of South Africa and all the documentation in the study referred to Piet Retief.

3.4 RESEARCH POPULATION AND SAMPLE

Polit and Hungler (1999:43, 232) define a population as the totality of all subjects that conform to a set of specifications, comprising the entire group of persons that is of interest to the researcher and to whom the research results can be generalised. LoBiondo-Wood and Haber (1998:250) describe a sample as a portion or a subset of the research population selected to participate in a study, representing the research population.

3.4.1 Population

The research population for this study comprised all the adolescent mothers aged 19 or younger at the birth of their children in the Piet Retief (Mkhondo) area. Eligibility criteria specify the characteristics that people in the population must possess in order to be included in the study (Polit & Hungler 1999:278). In this study, the participants had to be mothers aged 19 or younger when their babies were born; had to attend one of the two participating well-baby clinics in the Piet Retief (Mkhondo) area where data were collected and had to be willing to participate in the study.
3.4.2 Sample

Non-probability or convenience sampling was used because questionnaires were distributed to adolescent mothers aged 19 or younger who attended one of the two participating well-baby clinics in the Piet Retief (Mkhondo) area (Polit & Hungler 1997:232). Not every adolescent mother had an equal chance of being included in the sample because there was no census or complete list of all adolescent mothers living in the area. Consequently, there was no sampling frame from which a sample could be drawn randomly to ensure that every adolescent mother had an equal chance of being included in the sample. Hence the researcher used non-probability or convenience sampling. De Vos (1998:191) states that convenience sampling is the rational choice in cases where it is impossible to identify all the members of a population.

3.4.2.1 Characteristics of non-probability sampling


- Every person who meets the criteria is asked to participate. In this study, for example, all the adolescent mothers who visited the two designated well-baby clinics were asked to participate in the study.
- It is a less complicated and more economical procedure than random sampling.
- The researcher's judgment is used to select individual subjects who meet the eligibility criteria.

3.5 DATA COLLECTION

Polit and Hungler (1999:267) define data as “information obtained during the course of an investigation or study”. In this study, questionnaires were used to obtain data relevant to the study's objectives and research questions. The purpose of the study was to identify reasons why adolescent mothers failed to use free contraceptives to prevent unplanned pregnancies.
researcher approached every adolescent mother who attended one of the two participating well-baby clinics to participate in the study. Every adolescent mother who was willing to participate received a letter with information about the study, a consent form and a questionnaire. The researcher, assisted by volunteers from the Lovelife organisation, handed out the questionnaires on the specific days when she was present at these clinics during 2004. When 107 adolescent mothers had completed questionnaires, the completed questionnaires were handed to a statistician for data analysis.

3.5.1 Data collection instrument

Data collection instruments refer to devices used to collect data such as questionnaires, tests, structured interview schedules and checklists (Seaman 1991:42). Polit and Hungler (1997:466) define a questionnaire as “a method of gathering information from respondents about attitudes, knowledge, beliefs and feelings”. The questionnaire was designed to gather information about adolescent mothers’ knowledge, attitudes and beliefs regarding contraceptives.

3.5.1.1 Characteristics of a questionnaire

Brink and Wood (1998:293-298) state that the following aspects characterise a questionnaire:

- Each participant enters his/her responses on the questionnaire, saving the researcher’s time, compared to the time required to conduct personal interviews.
- It is less expensive than conducting personal interviews.
- Respondents feel that they remain anonymous and can express themselves in their own words without fear of identification. This aspect was very important in this study where adolescent mothers might not have wished their mothers, friends or health care workers to know about their knowledge, attitudes and beliefs concerning contraception.
- Data on a broad range of topics may be collected within a limited period.
- The format is standard for all subjects and is independent of the interviewer’s mood.
3.5.1.2 Development of the questionnaire

The literature review indicated that adolescents’ knowledge, attitudes and beliefs about contraceptives influenced their decision on whether or not to use contraceptives. This study attempted to identify reasons why adolescent mothers failed to use contraceptives to prevent unplanned pregnancies. The literature review indicated that adolescents face numerous challenges to use contraceptives effectively. These contraceptive challenges were categorised into individual perceptions, modifying factors and variables affecting the likelihood of using contraceptives effectively, in terms of the major tenets of the HBM. These three categories were not specified as such in the questionnaire in order to avoid the possibility of the respondents’ creation of mindsets similar to these categories. The data will be discussed in chapter 4 according to the relevant sections of the questionnaire and thereafter the data will be summarised in terms of the HBM’s main components.

The questionnaire was based on the literature review (see chapter 2) and other research instruments used in similar studies. The questionnaire was compiled and discussed with the researcher’s two supervisors, professional nurses working in labour wards and in clinics in the Piet Retief (Mkhondo) area, and a statistician. Changes suggested by these persons were implemented. The questionnaires were typed and translated into Zulu. An expert in English-Zulu translations edited the translation and certified that the same meanings were conveyed by specific items in the English and in the Zulu versions of the questionnaire (see Annexures E and F).

A pilot study was conducted with twelve adolescent mothers who visited the clinics. These twelve adolescent mothers did not participate in the actual study. All twelve managed to complete the questionnaires within 30 minutes and understood the questions. No apparent problems were encountered during the completion of the questionnaires, except that some Zulu contraceptive terms were apparently not well known because some respondents consulted the English questionnaire to understand a few items. Based on this observation, the English contraceptive
terms were included in brackets in the questionnaire in order to enhance the respondents’ comprehension of the contraceptive terms used.

3.5.1.3 Structure of the questionnaire

The questionnaire consisted of the following four sections:

Section A Personal (biographical) data  
Section B Sex education  
Section C Knowledge, attitudes and beliefs regarding contraceptives  
Section D Termination of pregnancy (TOP)

The items contained in the questionnaire, comprising both open-ended and closed questions, attempted to identify factors contributing to adolescent mothers’ non-utilisation of contraceptives in the Piet Retief (Mkhondo) area.

3.5.2 Reliability of the research instrument

Reliability refers to the degree of consistency or accuracy with which an instrument measures the attribute it is designed to measure (Polit & Hungler 1997:296; Uys & Basson 1991:75). If a study and its results are reliable, it means that the same results would be obtained if the study were to be replicated by other researchers using the same method. A pretest utilising adolescent mothers, excluded from the actual research, with similar characteristics to the study sample was conducted to determine the clarity of the items and consistency of the responses. The major anomaly detected was some respondents’ apparent unfamiliarity with some contraceptive terms in the Zulu language. In order to enhance the reliability of the instrument the appropriate English terms were added to the Zulu questionnaire to facilitate the respondents’ comprehension of these terms.

3.5.3 Validity of the research instrument
“Validity refers to the degree to which an instrument measures what it is supposed to be measuring” (Uys & Basson 1991:80). Validity can be sub-categorised as external and internal validity.

3.5.3.1 **External validity**

Burns and Grove (1999:191) describe external validity as “the extent to which the results can be generalised beyond the sample used in the study”. This usually depends on the degree to which the sample represents the population. Low external validity in this study implies that the results can apply only to adolescent mothers visiting well-baby clinics in the Piet Retief (Mkhondo) area (Burns & Grove 1997:234; Neuman 1997:145). The external validity of this study may have been compromised by selecting a non-random, convenient sample (of adolescent mothers who happened to visit one of two designated well-baby clinics during the data-collection phase). There was no guarantee that the adolescent mothers who visited the clinics had similar knowledge, attitudes and beliefs regarding contraceptives to those who did not visit the clinics, as this sample was not drawn randomly, implying that not every adolescent mother in the research population had an equal chance of being included in the research sample.

3.5.3.2 **Internal validity**

Internal validity is the extent to which factors influencing adolescent mothers' non-utilisation of contraceptives are a true reflection of reality rather than the result of the effects of extraneous or chance variables, not necessarily related to factors influencing contraceptive non-utilisation.

3.6 **ETHICAL CONSIDERATIONS**

Nurses face ethical dilemmas in their daily duties, as do researchers, when people are used as study participants in an investigation. Researchers need to exercise care that the rights of individuals and institutions are safeguarded (Polit & Hungler 1999:132-134).
3.6.1 Permission to conduct the study

Permission to conduct the study was sought from and granted by the Piet Retief (Mkhondo) local authority (see Annexures A and B). The registered nurses in charge of the two well-baby clinics that participated in the research were informed about the study and the local authority’s permission to request adolescent mothers to complete questionnaires at these health care facilities. Their co-operation was requested and promised. The researcher undertook not to cause any disruption to the functions of the clinics.

3.6.2 Principles of research ethics

The principles of beneficence and respect for human dignity were observed during data collection.

3.6.2.1 Principle of beneficence

This principle encompasses freedom from harm and exploitation (Polit & Hungler 1999:133). No physical harm resulted from completing questionnaires, but some psychological discomfort might have resulted from the nature of some of the questions. The researcher’s telephone numbers were provided should any respondent have wished to discuss any aspect. The researcher would have referred participants who experienced psychological discomfort as a result of completing the questionnaires to a counsellor, but no respondents indicated or expressed discomfort.

3.6.2.2 Principle of respect for human dignity

This principle includes the right to self-determination and to full disclosure (Polit & Hungler 1999:134). Respondents’ rights to self-determination were honoured because respondents could decide independently, without any coercion, whether or not to participate in the study; they had the
right not to answer any questions that caused discomfort; to disclose or not to disclose personal information and to ask for clarification about any aspect that caused some uncertainty. The right to full disclosure was respected because the researcher described the nature of the study as well as the respondents’ rights to participate or to refuse to participate in the study. This was done in the form of a letter (see annexure D).

Each participant voluntarily signed a consent form. The signed consent form was folded and placed in a box prior to completion of the questionnaire. Each completed questionnaire was placed in a separate container. No signed consent form could be linked to any specific questionnaire. This ensured anonymity of the respondents. Confidentiality was maintained because no names were disclosed in the research report. Any participant who wished to obtain a research report could contact the researcher who would supply such a report.

3.7 CONCLUSION

This chapter discussed the research methodology of the study and described the research design, population, sample, data-collection instrument and ethical considerations. Chapter 4 covers the data analysis.