

CHAPTER 3

Research design, research method and population

3.1 INTRODUCTION

Chapter 3 outlines the research design, the research method, the population under study, the sampling procedure, and the method that was used to collect data. The reliability and validity of the research instrument are addressed. Ethical considerations pertaining to the research are also discussed.

3.2 RESEARCH DESIGN

It is the blueprint for conducting the study that maximises control over factors that could interfere with the validity of the findings. Designing a study helps the researcher to plan and implement the study in a way that will help the researcher to obtain intended results, thus increasing the chances of obtaining information that could be associated with the real situation (Burns & Grove 2001:223).

3.3 RESEARCH METHOD

A quantitative, descriptive approach was adopted to investigate reasons why women who requested TOP services failed to use contraceptives effectively.

3.1 Quantitative

This is a quantitative study since it is concerned with the numbers and frequencies with which contraceptive challenges were experienced by women who requested TOP services in terms of the

CTOP Act (no 92 of 1996) in the Gert Sibande District of the Mpumalanga Province of the RSA, during August and September 2003.

3.2 Description

This study was descriptive because it complied with the characteristics of descriptive research as stipulated by Brink and Wood (1998: 283).

- Descriptive designs are used for the development of a database for any science. In this study a database about women's reasons for failing to use contraceptives and who requested TOPs in Gert Sibande District has been initiated.
- Demographic information obtained that could aid in describing the population of women who undergo TOPs.
- Descriptive studies are used when the characteristics of a population are either unknown or partially known. In this study the characteristics of women who requested TOPs in the Gert Sibande District would be correlated with those of women who underwent TOPs and participated in other studies.

3.4 POPULATION

Polit and Hungler (1999:37) refer to the population as an aggregate or totality of all the objects, subjects or members that conform to a set of specifications. In this study the population was South African women of all races, age groups, educational status, socio-economic status and residential areas, who requested TOP services in the Gert Sibande District during August and September 2003.

3.4.1 The eligibility criteria

These criteria specify the characteristics that people in the population must possess in order to be included in the study (Polit & Hungler 1999:278). The eligibility criteria in this study were that the participants had to

- be South African citizens
- have requested TOPs under the CTOP Act (no 92 of 1996)
- obtain TOP services at the Bethal Hospital in the Gert Sibande District

3.5 THE SAMPLING PROCEDURE

The process of selecting a portion of the population to represent the entire population is known as sampling (LoBiondo-Wood & Haber 1998:250; Polit & Hungler 1999:95). A number of women who requested TOPs under the CTOP Act (no 92 of 1996) in Gert Sibande District was selected. Time and money was saved by selecting a sample to be studied rather than attempting to study the entire population of women who requested TOP services. Obtaining data from the population of women as well as analysing and interpreting vast amounts of data would have been impossible to accomplish within the time constraints and with the limited financial resources which were available for conducting this research.

3.5.1 Non-probability sampling

A non-probability sampling method was adopted which, according to LoBiondo-Wood and Haber (1998:249), is less vigorous and tends to produce less accurate and less representative samples than probability or random samples. Non-probability sampling implies that not every element of the population has an opportunity for being included in the sample, such as convenience (accidental), quota, purposive and network sampling procedures (Burns & Grove 2001:804). The non-probability sampling procedure might have limited the generalisability of the findings.

3.5.2 Sample

A sample is a subset of a population selected to participate in the study, it is a fraction of the whole, selected to participate in the research project (Brink 1996:133; Polit & Hungler 1999:227). In this survey, a subset of 55 women was selected out of the entire population of women who requested TOPs in the Gert Sibande District.

3.5.3 Convenience sample

A convenience sample comprising 55 women who requested TOPs in the Gert Sibande District during August and September 2003 was selected. De Vos (1998:199), as well as LoBiondo-Wood and Haber (1998:253) describe a convenience sample as the use of readily accessible persons in a study. Any case, which happens to cross the researcher's path, and meets the inclusive criteria set for the study, gets included in a convenience sample. The researcher finds it easy to obtain participants, but the risk of bias is greater than in a random sample, because each member of the population does not have an equal chance of being included in the sample. Obtained results might not be generalisable to the entire population.

3.5.4 Sample size

A general rule of the thumb is to always use the largest sample possible. The larger the sample the more representative it is going to be, smaller samples produce less accurate results because they are likely to be less representative of the population (LoBiondo-Wood & Haber 1998:263-264). In this study a convenience sample of 55 respondents has been obtained, from women who requested TOP services at Bethal Hospital in the Gert Sibande District during August and September 2003. Women who requested TOP services and who were in the hospital at the times when the researcher conducted interviews and who were willing to be interviewed were included in the sample. According to the Mpumalanga Department of Health (1997-2002), Bethal Hospital is the main hospital, which renders TOP services in Gert Sibande District.

3.5.5 Sampling rationale

According to Polit and Hungler (1999:225), sampling helps because

- it was more economical to choose a sample of 55 women who requested TOPs, instead of studying the entire population of women who requested TOPs in the Gert Sibande District.
- it was unnecessary to collect data from the entire population of women who requested TOPs in Gert Sibande District, as contraceptive challenges could be understood by securing information from the sample that was chosen.
- De Vos (1998:191) indicated that (convenience) sampling could be regarded as being a rational choice in cases where it was impossible to identify all the members of a population. In this survey it was impossible to predict which women would request TOPs in Gert Sibande District during August and September 2003. Although the population of women who underwent TOPs during these two months could have been determined retrospectively, drawing a random sample and tracing the women for interviews would have been difficult, if not impossible. It might have been impossible to trace many of the TOP clients once they had left the hospital, because they might have relocated to different places. Many of them might not have granted interviews once they had left the hospital as their families and friends might have been unaware of their TOPs. As the researcher knew that many women obtained TOP services without confiding in any other people, the researcher regarded it to be in the interest of these women to conduct the interviews while they were in hospital rather than to attempt to trace them subsequent to their discharge from the hospital.

3.6 DATA COLLECTION

Polit and Hungler (1999:267) define data as information obtained in a course of a study. In this study data was collected by using structured interview schedules. A structured interview schedule was used in order to capture data relevant to the study's objectives and research questions. The purpose of the

study was to identify and describe contraceptive challenges experienced by women who requested TOPs in the Gert Sibande District during August and September 2003.

3.6.1 The data collection instrument

The literature reviewed indicated that challenges exist even before contraceptive use can be initiated, and during the use of contraceptives. The structured interview tool was formulated to capture contraceptive challenges facing women before contraceptive use can be initiated, and those that are experienced during the use of contraceptives. The structured interview schedule (included as annexure C of this dissertation) comprised the following sections:

- *Section 1.* Questions related to demographic information of the women who requested TOPs.
- *Section 2.* Questions related to contraceptive challenges existing before contraceptive use can be initiated.
- *Section 3.* Questions related to contraceptive challenges experienced during the use of contraceptives.
- *Section 4.* Questions related to the TOP procedure itself.

3.6.1.1 Validity

Validity is defined as a measure of truth or falsity of the data obtained through using the research instrument. It is classified as internal and external validity of the measuring instrument (Burns & Grove 2001:226). In this study validity refers to the measure of truth or falsity of the assumed contraceptive challenges as experienced/reported by women who requested TOP services. The instrument's validity can be regarded as the extent to which "... the instrument actually reflects the abstract construct being examined" (Burns & Grove 2001:814). Several factors could influence the internal and external validity of the measuring instrument, the structured interview schedule used in this survey to gather data about reasons why women who requested TOPs, failed to use contraceptives effectively.

Internal validity

This concept indicates the extent to which the factors, identified as contraceptive challenges by women who requested TOP services, truly reflect what hinders effective contraceptive usage, rather than being attributable to extraneous or chance variables, not necessarily indicating contraceptive challenges (Burns & Grove 2001:800).

Threats to internal validity

The occurrence of an event, which may be unrelated to the study but can affect the result of the study poses a possible threat to the internal validity of the data (Burns & Grove 2001:228). The most important threats to the internal validity of this study were factors related to the history of the participants' contraceptive use and the selection processes of the women who were interviewed. Several factors in this study have been identified as contraceptive challenges, like the lack of knowledge about contraceptives, lack of education, and the side-effects experienced during contraceptive use.

These and many other factors are said to hinder effective contraceptives use. Historical threats to internal validity could include the admission by the participants in this study that these factors were challenges experienced by them. Historically, in the RSA contraceptives are freely available to prevent unwanted pregnancies. The participants might shift the blame of conceiving unwanted pregnancies in the face of freely available contraceptives, by blaming challenges experienced instead of their own carelessness. The results obtained on contraceptive challenges should thus be viewed with caution.

The process involved in the selection of participants to be involved in a study and the type of group selected might influence the results obtained, and therefore the validity might be compromised (Burns

& Grove 2001:229). The selection of a group of women who requested their pregnancies to be terminated, to participate in a study to describe contraceptive challenges might have compromised the internal validity of this study. Some women in this selected group of participants might have felt guilty to have conceived unwanted pregnancies in the face of freely available contraceptives. This might have led to an exaggeration of the contraceptive challenges experienced. If, for example, contraceptive challenges were studied in a group of women who were still using contraceptives, or were attending antenatal care, then the results might have been different because it was a different group that was selected, not necessarily because of differences in the contraceptive challenges experienced. However, the women requesting CTOPs desired the termination of unwanted pregnancies. If some

challenges could be identified and addressed which prevented these women from using contraceptives effectively, then the number of requests for CTOPs might decline in future.

3.6.1.2 External validity

External validity refers to the extent to which the research results can be generalised beyond the sample used in the study (Burns & Grove 2001:798).

Threats to external validity

The external validity of a research project can be threatened by the Hawthorne effect, the type of sampling method selected, the validity of the research instrument (structured interview schedule in this case) and by the predictive value of the research instrument.

The Hawthorne effect is the behaviour that is displayed by participants just because they are aware that they are involved in a study (Polit & Hungler 1999:252). Being aware that they were involved in a study of contraceptive challenges, the women who requested TOPs might have given answers to please the interviewer, instead of providing information about their real life experiences. This type of threat to external validity was minimised providing explanations to participants, and by not pressurising them into giving any responses. They were requested to be as honest as possible.

Sampling methods

The type of sampling method used affects the generalisability of the research results to the entire population, thereby threatening the external validity of the results (Polit & Hungler 1999:252). A non-probability sampling method was used in this study, and a convenient sample of 50 women who requested TOPs was obtained. Because the sample was a convenient one, the results obtained have to be viewed with caution, as external validity might have been compromised by using a convenience

sample, rather than studying the entire population or a truly random sample. (Both latter options were unfeasible because no census of women who would request TOPs during August and September 2003 at the Bethal Hospital existed.)

Validity of the measuring instrument

According to De Vos (1998:83), a valid instrument measures the concept in question, and it measures it accurately. There are three major classifications of estimating the validity of the data-collecting instrument, the self-evident measures, pragmatic measures and construct validity (Brink & Wood 1998:175). In this study the validity of the measuring instrument was observed by adhering to the characteristics of all three these measures.

Self-evident measures

Self-evident measures refer to the extent to which the instrument measures what it is supposed to measure, which is classified as face and content validity. In ensuring face validity the interview schedule was subjectively assessed for presentation and the relevance of the questions. The interview tool was given to colleagues to check whether the questions were relevant, unambiguous and clear. The joint supervisor and the supervisor further critically evaluated the interview schedule, and suggestions made were implemented.

Content validity is the extent to which the content of the instrument appears to comprehensively examine the scope it is intended to measure (Bowling 1997:133). A thorough literature review was done on contraceptive challenges. Several studies implied that contraceptive usage could be challenged by factors that exist and face a woman before she can initiate the use of contraceptives, like the lack of education and poor socio-economic status. During the use of contraceptives there are other challenges that accompany contraceptive usage that can hinder effective use of contraceptives, like

poor contraceptive counseling, the side-effects experienced, and the accessibility of regular follow-up services.

Information obtained during the literature review has helped to set this study's research questions. The interview schedule has been designed to provide answers to these questions. The interview schedule's content has a section on the demographic information of the participants, the questions on contraceptive challenges that exist before contraceptive use can be initiated, a section on contraceptive challenges that are experienced during the use of contraceptives and lastly, a section on TOPs. These sections helped to include relevant content guiding the achievement of the study's objectives.

Pragmatic measures

Pragmatic measures are means of establishing validity by concentrating on the practical value of the tool through concurrent and predictive validity (Brink & Wood 1998:176). This study has only used predictive validity by predicting future changes in the key concepts (Bowling 1997:133), by specifying the assumptions underlying this study, which were:

- (1) Poor or no sexuality education on basic reproductive anatomy, physiology, conception and contraception can lead to poor or no contraceptive use.
- (2) Women's poor socio-economic status and the lack of education result in poor or no contraceptive use.
- (3) Cultural values, beliefs and religion can hinder effective contraceptive use.
- (4) Inadequate or no counselling provided on the method of choice can negatively influence continuity of contraceptive use.
- (5) The side-effects experienced during contraceptive use can lead to failure to continue with contraceptive usage.

These assumptions predicted the effect contraceptive challenges could have on contraceptive usage, these predictions implied that if these contraceptive challenges could be addressed in the Gert Sibande District, then the number of women requesting TOP services in this district should decline.

3.6.1.3 Reliability

Reliability is the degree of consistency with which the instrument measures an attribute (Polit & Hungler 1999:255). It further refers to the extent to which independent administration of the same instrument yields the same results under comparable conditions (De Vos 1998:85). The less variation the instrument produces in repeated measurements of an attribute the higher the reliability. There is also a relationship between reliability and validity. An instrument which is not valid cannot possibly be reliable (Polit & Hungler 1999:250).

In ensuring reliability in this study the responses obtained through the interview schedule were split into two equal halves, they were then scored independently to check correlation. The other techniques that are used to ensure validity were not possible in this study, due to the nature and the sensitivity of the concepts of TOPs. These techniques are stability, internal consistency and equivalence (Polit & Hungler 1999:200).

3.7 ETHICAL CONSIDERATIONS

Nurses face ethical dilemmas in their daily duties, so do researchers, when humans are used as study participants in a research investigation, care must be exercised that the rights of those individuals are protected (Polit & Hungler 1999:132-134).

3.7.1 Principles of research ethics

Research ethics observed in this study are in accordance with those stated by Polit and Hungler (1999:153–159), namely the principles of beneficence, of respect for human dignity and of justice.

The principle of beneficence

The principle of beneficence includes freedom from harm, freedom from exploitation and the risk benefit ratio. With regard to the freedom from harm, there was no physical harm produced by participating in the study. Psychological discomfort might have resulted from the nature of the questions asked. An opportunity was provided for each participant to ask questions and to air her feelings. Each participant received some information about contraceptives during the interview, which might have enhanced her knowledge enabling her to make better informed decisions in future.

Freedom from exploitation was observed by not exploiting the participant's vulnerabilities. The women who requested TOP services were regarded as a vulnerable group as they were carrying unwanted pregnancies, which they intended to terminate. Careful explanations were provided to these women about their right to refuse to participate in the study, and that their participation or refusal would not influence the care provided to them in any way whatsoever.

Pertaining to the risk benefit ratio, the risk implied the anticipated psychological discomfort resulting from the questions asked. The benefit was the body of knowledge that highlighted the contraceptive challenges experienced by women in this area. This information could be utilised to reduce the number of women requesting CTOP services in future.

The principle of respect for human dignity

This principle includes the right to self-determination and the right to full disclosure. The right to self-determination was followed by providing the participants with the right to refuse to participate in the study, the right to discontinue the study if they felt uncomfortable, the right not to answer specific

questions if they did not want to disclose that information and the right to ask for clarification if they were not sure about any aspect of the research project, any specific question, or the use of contraceptives in general.

Addressing the participants' right to full disclosure, the researcher described the nature of the study, the participants retained the right to refuse participation, the researcher's responsibilities and the risks/benefits involved, before the actual interviewing process commenced.

The principle of justice

The principle of justice encompasses the right to fair treatment and the right to privacy. The right to fair treatment: the participants were tactfully treated by respecting their beliefs, habits, culture and lifestyle. An opportunity was provided for each participant to ask questions and to air her feelings.

The right to privacy was respected because the researcher offered each participant privacy by interviewing the persons individually in a private area and by treating data collected with confidence. Anonymity was adhered to by ensuring that no completed structured interview schedule could be linked to any specific participant. The completed interview schedules were only accessible to the researcher and the statistician, and were kept locked up by the researcher. Data collected was used for the purpose of this study only, and the completed interview schedules would be destroyed as soon as the research report had been accepted. The research report would provide facts, figures, graphs and tables but no names of individuals nor of institutions would appear in this report. The researcher would treat all information in the strictest confidence and not divulge any information shared with her to any other person nor institution.

3.7.2 Consent for conducting the survey

Consent was obtained for conducting the survey from the

- Health Department of the Mpumalanga Province
- health care authorities of Gert Sibande District
- medical superintendent and nurse manager of Bethal Hospital
- Research and Ethics Committee of the Department of Health Studies, Unisa

Each woman was fully informed about the nature of the research and requested to participate. No remuneration was paid and no woman suffered any ill effect for refusing to participate in the survey. Each woman who agreed to participate signed a form, or put a thumb mark on it if she could not write her name. As most participants were Zulu speaking, the consent form was available in English as well as in Zulu (see annexures D and E). These signed consent forms were kept separately from the completed structured interview schedules so that no specific consent form could be matched with any specific completed structured interview schedule -- in an attempt to maintain confidentiality and anonymity. Each participant was also reassured in this regard.

As most participants were Zulu speaking, the structured interview schedules which had been prepared in English were translated into Zulu by the researcher who is fluent in both English and Zulu. A professional nurse and a secondary school teacher who were fluent in both these languages checked the translations and agreed the Zulu translations implied the same meanings as those conveyed by the English interview schedule. (See annexure F for the English and annexure G for the Zulu interview schedules). However, the professional nurses suggested that some English contraceptive terms should also be used on the Zulu questionnaires as most women only knew contraceptive terms in English. Thus both the English and Zulu contraceptive terms were used in the Zulu questionnaire.

3.8 SUMMARY

This chapter dealt with the research design that had been followed in this study, addressing the population, sampling procedure, data collection instrument and data collection procedure. Measures were adhered to in order to enhance the validity and reliability of the research results. Ethical concerns which could have impacted on the survey were attended to.

The following chapter presents the analysis and discussion of the data obtained from conducting 50 structured interviews with women who requested TOP services at the Bethal Hospital during August and September 2003. The purpose of this survey was to identify barriers which could have prevented these women from using contraceptives effectively. If such barriers could be identified and addressed then the number of women requesting TOP services in future should decline - enhancing the quality of life of the women concerned and effecting cost containment for the health care authorities concerned with providing the TOP services in this area, and possibly throughout the RSA.