# CHAPTER THREE

# METHODOLOGY

## 3.1 Introduction

This chapter focuses on the methodology of the study. The methodology includes population and sampling, research design and ethical considerations.

## 3.2 Research design

The design for this study is a quantitative, descriptive design. The data were collected using the Minnesota Satisfaction Questionnaire (Cook, Hepworth, Wall &Warr, 1981: 23) since descriptive surveys are designed to obtain more information about the characteristics within a particular field of study. The purpose of a descriptive study is to provide a picture of situations as they naturally happen. A survey is a technique of data collection in which questionnaires are used to collect data about an identified population and are used in many designs including descriptive ones (Burns & Grove, 2001: 248).

## 3.3 The Questionnaire

The Minnesota Satisfaction Questionnaire (Cook et al, 1981: 23) (Appendix F) was formulated at the University of Minnesota based on human correspondence with the environment at work. The assumption is that the correspondence at work can be described in terms of the individual fulfilling the requirements of this environment and the work environment fulfilling the requirements of the individual (satisfaction). The instrument was

divided into three sections; Firstly, section A contained biographic data, namely, Item one (1) is gender, item two (2) is age and item three (3) is position. Secondly, section B had twenty (20) items with 5 point Likert-type scale ranging from "*Very dissatisfied*" to "*Very satisfied*" dealing with Intrinsic and Extrinsic factors of satisfaction. This section contains items four (4) to twenty three (23). The scale has a high reliability with a Cronbach alpha of 0.88 and 0.84 for intrinsic and extrinsic factors, respectively, which was documented (Cook et al, 1981: 23) and thirdly, in section C the intention to stay was measured by asking nurses: "*Would you still be working in this hospital in the next twelve months?*" to which they could respond by either yes, uncertain or no (Item twenty four (24)). The reason for their response to the intention to stay was captured in item twenty five (25). Item twenty six (26) captured what motivated nurses in the twelve (12) months preceding the study and items twenty seven (27) and twenty eight (28) capture the changes that nurses think are possible in their workplace. By using it the researcher was able to diagnose whether the nurses are experiencing an absence of hygiene or motivating factors, leading to an appropriate intervention strategy.

### 3.3.1 Validity

Validity refers to relevance of measure: does the instrument really measure what it claims to measure (Wilson, 1993: 54)? The validity of an instrument is a determination of the extent to which the instrument actually reflects the construct being measured (Burns & Grove, 2001: 399).

#### 3.3.1.1 Content validity

Content-related validity examines the extent to which the method of measurement includes all the major elements relevant to the construct being measured. This evidence was obtained from three sources, namely the literature, representatives of the relevant population and content experts (Burns & Grove, 2001: 400). It addresses the extent to which the instrument measures the domain defined in the study. According to the American Psychological Association (APA) validity addresses the appropriateness, meaningfulness and usefulness of the specific inferences made from instrument scores (Burns & Grove, 2001: 405). The Minnesota Satisfaction Questionnaire (Cook et al, 1981: 23) consists of twenty (20) items that measure job (general) satisfaction. It also consists of sub-sections that measure intrinsic (motivating) factors and extrinsic (hygiene) factors. Intrinsic factors refer to elements that generate satisfaction from within the individual, such as being innovative and creative in one's job. The extrinsic factors refer to elements in the individual's environment that influence his satisfaction, for example relationships with co-workers and the application of workplace policies. The intrinsic factors are also known as motivating factors due to the fact that they always motivate employees and the extrinsic factors have been known as hygiene factors because their presence discourages dissatisfaction even though it does not predict satisfaction. Motivating factors are factors such as promotion, provision of more responsibility, being responsible for own practice, having the opportunity to do one's job creatively and innovatively, recognition and achievements, and the hygiene or maintenance factors are factors such as the relationships in the workplace with supervisor and co-workers, the ability of the supervisor, the working conditions, policies, salary and job security. In the questionnaire the intrinsic/motivating factors are reflected in items 4, 5, 6, 7, 10, 12, 13, 14,

17, 18, 19 and 23. The extrinsic/hygiene factors are reflected in items 8, 9, 11, 15, 16, 20, 21 and 22 (see table 3.1 below).

**Table 3.1: CONTENT VALIDITY**

| HERZBERG THEORY | ITEMS IN THE QUESTIONNAIRE |
|---|---|
| **A) MOTIVATING/INTRINSIC FACTORS:** | |
| 1) ACHIEVEMENT | 23 |
| 2) RECOGNITION | 7, 13 |
| 3) WORK ITSELF | 4, 6 |
| 4) RESPONSIBILITY | 5, 10, 12 |
| 5) ADVANCEMENT | 17 |
| 6) GROWTH | 14, 18, 19 |
| **B) HYGIENE/EXTRINSIC FACTORS:** | |
| 1) SUPERVISION | 8, 9 |
| 2) POLICY & ADMINISTRATION | 15 |
| 3) WORKING CONDITIONS | 20 |
| 4) INTERPERSONAL RELATIONSHIPS | 21 |
| 5) STATUS | 22 |
| 6) JOB SECURITY | 11 |
| 7) SALARY | 16 |
| 8) PERSONAL LIFE | - |

### 3.3.1.2 Face validity

Face validity is a technique which verifies that the instrument measures what it is supposed to. The willingness of the respondents to complete the instrument is related to their perception that the instrument measures the content they agreed to provide. Experts in the field of nursing management and research were shown the questionnaire and opinions sought as to whether the questionnaire measures the working environment. One of those consulted had management expertise of more than ten (10) years with extended knowledge of nursing and nurses' staffing issues. The second expert had an extensive knowledge of research, the English language and nursing issues and a good knowledge of questionnaire development. The third expert had extensive knowledge of staffing and nursing issues with twenty years of

teaching experience and was in the process of studying for a PhD. The fourth expert had thirty years of clinical experience and was also studying further. This expert had an in-depth knowledge of clinical practice and ethical issues. Their opinions were as follows:

1) Some of the language (English used) is not suitable for South Africans.

2) Some of the questions are open to various interpretations, for example, item 1 read "to keep busy at all times" and was changed to "being meaningfully occupied with your work at all times". Item 2 read "to work alone" and it was changed to "the opportunity to work independently in your work". Item 4 read "the opportunity to be somebody" and was changed to "the opportunity to be seen contributing positively to the society living in your community". Item 10 read "the opportunity to tell other people what to do" and it was changed to "the opportunity to delegate to other people". Item 12 read "the way the policies are implemented" and the statement was changed to "the way that the "Gauteng Department of Health" policies are applied."

3) The context of the questionnaire was not appropriate for a nursing environment, so it needed to be refined. The questionnaire was altered according to the experts' recommendations before the pilot study was initiated.

### 3.3.2 Reliability

The reliability of a measure denotes the consistency of measures obtained in the use of a particular instrument and is an indication of the extent of random error in the measurement method (Burns & Grove, 2001: 395). To ensure reliability of measurement (which refers to the consistency, accuracy, and precision of the measures taken in the use of a particular

instrument (Wilson, 1993: 154), the data from this study was collected by one researcher. The researcher did not collect data with any other researcher or research assistants. Reliability played an important part in the selection of an instrument since it enhances the power of a study to detect significant differences or relationships actually occurring in the population under study (Burns & Grove, 2001: 396). The instrument that was chosen for this study, the Minnesota Satisfaction Questionnaire has a Cronbach alpha of 0.88 and its subsections have consistently demonstrated acceptable internal consistency (Cook et al, 1981: 23) with different samples. In Schriesheim & Murphy's (1976) study with 54 social workers, the general job satisfaction scale registered a Kuder-Richardson internal reliability of 0.74 (Cook et al, 1981: 23). Ivancevich and Matterson (1978) reported a Cronbach alpha of 0.80 and 0.84 for the intrinsic and extrinsic subscales in a study of 170 machinists and technicians.

The reliability measurement for this study was Cronbach alpha 0.8480. Since all the responses were framed positively it means all respondents answered in the same direction.

**3.4 Pilot study**

The questionnaire was piloted at the public hospital from 1 June, 2005 to 12 June, 2005, utilizing 30 respondents: 10 registered nurses, 10 staff nurses and ten 10 auxiliary nurses. The nurses who participated in the pilot study were not included in the main study. The purpose of the pilot study was to identify the strengths and weaknesses in this research, that is, the intended design, sample size and data collection instrument (Wilson, 1993: 15) and whether the participants understood the questionnaire. Only seven respondents returned the

questionnaire, namely three professional nurses, three enrolled nurses and one auxiliary nurse.

### 3.4.1 Results of the pilot study

There were six females and one male. The age of the respondents was between 30 and 39 years. Six of the respondents indicated uncertainty about their intention to stay in this hospital during the next (12) months while only one respondent indicated an intention to stay. The data were cleaned and analyzed with the Moonstats computer program.

**Table 3.2**: **GENDER, AGE AND POSITION** (n=7)

| | Nurse 1 | Nurse 2 | Nurse 3 | Nurse 4 | Nurse 5 | Nurse 6 | Nurse 7 |
|---|---|---|---|---|---|---|---|
| Gender | Female | Female | Female | Female | Male | Female | Female |
| Age | 20-29 | 40-49 | 30-39 | 30-39 | 30-39 | 40-49 | 40-49 |
| Position | A/N | A/N | E/N | E/N | P/N | P/N | P/N |

#### 3.4.1.1 Satisfaction discussions

Fifty seven percent (57% (n=4)) of respondents were **satisfied** with the *intrinsic* aspects of their work, such as the opportunity to work independently in their workplace, to delegate to others and to apply their knowledge and skills. The respondents registered **dissatisfaction** with the *extrinsic* aspects of their work, such as the ability of their supervisors to make decisions, the way their supervisors handle their subordinates, doing things that go against one's conscience, their salary compared to the work they do, the opportunity for promotion and advancement, the working conditions in their workplace and the praise and acknowledgement they get from doing a good job.

#### 3.4.1.2 The intention to stay and reasons.

Fourteen percent (14% (n=1)) of respondents demonstrated their intention to stay in their workplace in the next twelve months. Another fourteen percent (14% (n=1)) indicated their intention to leave the workplace. Seventy one percent (71% (n=5)) of respondents indicated that they were uncertain. Those who indicated an intention to leave stated that the pushers (reasons for leaving) were *low salaries, lack of study leave or waiting a long time to undergo training and insufficient in-service training, increased workload and lack of management support*. Those who chose to remain indicated that they *feel for the patients (caring), they liked the hospital, the hospital is within walking distance, they were happy with the working conditions and the nursing profession was a calling to them.* Those who were uncertain stated that they were still *weighing their options, they had a fear of an unknown environment, and they were hopeful that, given time, conditions in the hospital would improve.* The respondents showed an understanding of the questionnaire since none of them were spoilt. They suggested that the forms should not be posted in their respective wards but be centralized. The questionnaires were coded for easy access and interpretation by the statistician. After the pilot study the questionnaires of the actual study were posted in the hospital reception area for access to all nurses and to enhance confidentiality.

### 3.5 Data collection

After providing information sheets to the respondents and obtaining their verbal permission to participate, data were collected by using the Minnesota Satisfaction Questionnaire (Cook et al, 1981: 23). The respondents were offered the opportunity to ask questions before they participated. The respondents were given questionnaires to fill out during the periods that the

researcher visited the hospital and those given the questionnaires were ticked off the sampling frame to avoid duplication. The nurses were visited by the researcher in the wards to which they were allocated. The respondents posted the completed questionnaires in a central point in the hospital where the researcher collected them. The box was sealed so that nobody else could have access to them. The researcher kept the completed questionnaires under lock and key in his cupboard at work. Data was collected from 15 June 2005 until 15 September 2005. Two hundred and thirty respondents were given questionnaires. The sampling realization was one hundred and seventeen (117), which is discussed in detail in Chapter 4.

### 3.6 Population

The population, sometimes referred to as the target population, is the entire set of individuals or elements who meet the sampling criteria. An accessible population is the portion of the target population to which the researcher has reasonable access (Burns & Grove, 2001: 366). The target population consisted of five hundred and seventy eight (578) nurses in a provincial hospital in Gauteng province because this hospital had an increased turnover of nurses, and increased patient complaints. There were two hundred and fifty one (251) Professional nurses, one hundred and twenty (120) Staff nurses and two hundred and seven (207) Auxiliary nurses.

#### 3.6.1 Sampling method

A stratified (random) sampling method was used. Probability random sampling methods have been developed to ensure some degree of precision in the estimation of the population

parameters. Thus, probability samples reduce sampling error. Random sampling leaves the selection to chance and thus increases the validity of the study (Burns & Grove, 2001: 370). In random sampling every element or individual in the population has a greater than zero opportunity to be selected for the sample (Burns & Grove, 2001: 369). A sample of two hundred and thirty (230) nurses was selected for this study. The population was stratified according to the different nurses' categories, that is, professional, and sub-professional groups (Staff and Auxiliary). The sampling frame was obtained from the hospital monthly nurses' allocation. The nurses' allocation was used because all nurses working in this hospital are listed in it. The sampling frame itself was arranged in random order. For example from the sampling frame all qualifying nurses were allocated a number starting from one (1) to five hundred and seventy eight (578). The corresponding number of small papers were cut and mixed in a bowl. The papers were drawn from the bowl and the corresponding number in the target population was then included in the study until two hundred and thirty (230) elements from a population were obtained. All strata were represented proportionally, that is the stratum with more members had more representation in the sample.

### 3.6.2 Sample size

The sample size included 230 nurses, that is, 100 professional nurses, 48 enrolled nurses and 82 auxiliary nurses. The categories of nurses were calculated in equal proportions as opposed to equal numbers. Equal numbers would have led to under-representation of the larger population (Burns & Grove, 2001: 373). Sampling inclusion criteria were nurses employed full- time at this hospital and nurses who have worked for a period more than one year at this hospital. The exclusion criteria were nurses serving contract duty since they are not

contractually bound to this hospital, that is, they are not part of the staff establishment, and nurses on full-time study leave because they were removed from the hospital during their training.

**Table 3.3**: **SAMPLE SIZE AND REALIZATION**

| | Current numbers | Sample size | Sample realization | Percentage |
|---|---|---|---|---|
| Professional nurses | 251 | 100 | 62 | 43.4 |
| Staff nurses | 120 | 48 | 31 | 20.8 |
| Auxiliary nurses | 207 | 82 | 24 | 35.8 |
| Total | 578 | 230 | 117 | 100 |

### 3.7 Data analysis

The data were cleaned and captured on a spreadsheet using MS Excel using the codes as listed from the questionnaire and a preliminary analysis was carried out by the researcher using the Moonstats programme. The data were saved on the USB mass storage device and the whole spreadsheet was printed. The stored data were given to the statistician at the Faculty of Health Sciences, University of Witwatersrand, to analyze using Microsoft's STATA programme. Descriptive statistics were generated using Moonstats to summarize data and were presented in frequency tables. Responses were coded as 1, 3 and 5, that is, all the 2s became 1s and all the 4s became 5s.

Prevalence of satisfaction among nurses for the total group, as well as the subgroups, was reported as a percentage along with the 95% confidence interval. Subgroups (that is professional and sub-professional (Staff and Auxiliary nurses) were compared for items in the instrument using cross tabulation. Groups were compared with respect to the composite

score on the Minnesota Satisfaction instrument using the T-test. Testing was done at 0.05 level of significance. Cross-tabs between biographical items and items in the questionnaire were done. Data were captured and analyzed by the researcher using the Moonstats system. All raw data entered in the computer were checked for accuracy and cleaned (Burns & Grove, 2001: 734).

### 3.8 Ethical considerations

The study was conducted after obtaining ethical clearance from the University of the Witwatersrand's committee for research in human subjects (Annexure A). The research proposal was presented to the postgraduate committee of the University of Witwatersrand in the Faculty of Health Sciences for their perusal, input and permission to conduct the study (Annexure B).

The permission to conduct the study and to have access to the participants was sought from the hospital's Chief Executive Officer and the Deputy Director of Nursing. Further permission was obtained from the Gauteng Department of Health (Annexure C). The researcher will report all data points, including those that are not supportive to his research. The researcher will not involve himself in fraud, any misconduct or act in bad faith in connection with the research (Wilson, 1993: 245). The contributions of others were acknowledged. The researcher actively protected the respondents from harm, deceit, coercion and invasion of privacy, even when the study might have been compromised by withholding the names of the participants or characteristics that may lead to their identification. The names of the respondents were not written on the questionnaire, or mentioned during analysis and reporting. The name of the institution was not disclosed except to the supervisor. The

researcher was truthful to the respondents about the purpose, procedure, methods and findings of the study. Under no circumstances did the researcher disguise the research or do it "under cover". The researcher will publish the research findings for peer review. Informed verbal consent was obtained from the participants, that is, after explaining the research and allowed the respondents to ask questions, the researcher asked the respondents' permission to participate in the study. The respondents were informed about their right to withdraw their participation in the study as and when they wish. The respondents were assured that should they wish to withdraw from the study they would not be prejudiced in any way whatsoever.

### 3.9 Conclusion

In this chapter the methodology of the study was described. The research design, questionnaire design, population, sampling method, sampling size, data collection (instrument and the process), validity (content and face) and reliability, pilot study and the results thereof, data collection and data analysis and ethical considerations were discussed. The findings for the above study on job satisfaction and intention to stay in the services were investigated and the findings are described in Chapter 4.