

CHAPTER THREE

METHODOLOGY

Aim: To present and justify the research design and methodological approach utilised in the research study, as the ultimate purpose is to answer the research question: What is the maintenance and utilisation of government fitted hearing aids?

3.1 INTRODUCTION

“The relationship between a science, whether a social or other, and its research component has always been a very close one” (De Vos, Strydom, Fouche, Poggenpoel, & Schurink, 1998:5).

From the previous chapters it is evident that the provision of hearing aids and their utilisation by individuals with hearing loss is complicated by a considerable amount of factors. These factors are present in developed countries as well as in developing countries. Furthermore, service delivery in developing countries has additional challenges due to low economic status, high mortality rates and lack of services (Olusanya, 2004: 563).

3.2 AIMS OF THE STUDY

The main aim of the study was to determine the maintenance and utilisation of government fitted hearing aids.

The following sub-aims were formulated in order to provide information in which the main aim could be realised:

3.1.1 To establish the maintenance of government fitted hearing aids.

3.1.2 To establish the utilisation of government fitted hearing aids.

3.1.3 To establish the condition of government fitted hearing aids after dispensation.

3.3 RESEARCH DESIGN

“A research design is the strategy, the plan and the structure of conducting a research project” (Kweit & Kweit, 1981:357). Both a qualitative and quantitative research approach was utilised. Creswell (1994:2) explains quantitative research as “an inquiry into a social or human problem based on testing a theory composed of variables, measured with numbers and analyzed with statistical procedures” whereas qualitative research involves “an inquiry process of understanding a social or human problem, based on building a complex, holistic picture, formed with words, reporting detailed views of informants”.

Both approaches were selected for this study due to the nature of the data that was collected from the participants’ i.e. individual thoughts, and experiences in narrative form as well as numeric data that allow for statistical procedures and analysis. The type of research was cross-sectional and analytical. Cross-sectional studies necessitate the observation of units of analysis at a single point in time (De Vos et al., 2002:40). This is economical to the participant and the researcher in terms of time and cost, as participants will be studied once (Neuman, 1997:28). However, conclusions based on observations made a one point in time remain the main disadvantage of cross-sectional studies (Babbie, 2001:95). Analytic induction seeks to develop universal statements containing the essential features of a social phenomenon (De Vos et al., 1998:286). Furthermore, analytic induction compels the researcher to develop conceptual frameworks that correspond to the subjective everyday experience of the participants (Manning, 1982 cited in De Vos et al., 1998:338).

In terms of this study, the researcher aimed to obtain information regarding hearing aid experience at least one year post fitting. A method of non-probability purposive / judgmental sampling was employed (Babbie, 2001:227). Non-probability sampling methods in general are regarded as less reliable than probability sampling, but they are often easier and cheaper to use (Babbie, 2001:227). This sample was selected according

to principles such as nature of the research aims, researcher's knowledge of the population and its elements and based on the purpose of the research (Babbie, 2001:225). The nature of the investigation was a descriptive survey; whereby the researcher conducted structured face-to-face interviews (De Vos et al., 1998:297). The structured / standard interview was adopted, whereby the interviewer asked the participant the same questions using an interview schedule i.e. for example a formal instrument that specifies the precise wording and ordering of all the questions to be asked of each participant (Leedy, 1997:193). The researcher was thus aware of the negative aspects associated with the research methods chosen to perform the study and avoided them. This was achieved by providing an interpreter who was fluent the first language of the participants and could thus clarify questions and terminology for participants during the interview.

3.4 ETHICAL CONSIDERATIONS

The importance of research ethics is to ensure that the researcher adheres to the responsibility to the participants, the public, and to the profession (Mouton, 2003:238). In the South African context there are unique challenges, and dilemmas faced such as poverty, HIV and AIDS, cultural and linguistic diversity and low literacy (Hugo, 1998:6-7). These aspects were considered carefully by the researcher as they play an integral part of studying human behaviour and responses. The researcher also bore in mind the principles of "*Batho Pele*" (People First) as stated in the Patients Right Charter (Department of Health, 1997:1) by ensuring that all participants were treated with respect and courtesy and that information about services / service delivery was provided.

The main ethical considerations according to De Vos et al., (2002:62-76) are as follows:

Autonomy: The researcher acknowledged the participants' autonomy by providing a consent letter to each participant to ensure that the individuals in the study were completely and correctly informed in order to make decisions regarding their involvement the research project (Refer to Appendix B.1). The letter and consent form stated the aims of the study, procedures, and potential benefits using clear and

unambiguous language. These were also translated into two languages viz. Setswana, Northern SeSotho (Refer to Appendix B.1), as these are the main languages spoken at the hospitals involved in the study. Measures were also taken for semi-literate and illiterate clients whereby the consent letter was read aloud to them and verbal consent was given, as well as a cross was made instead of a signature.

Beneficence / Non-Maleficence: The researcher acknowledged the participants' right to beneficence by ensuring that no harm came to the participants during the course of the study.

- Ethical clearance from the Research Proposal and Ethics Committee of the Faculty of Humanities, University of Pretoria and each of the hospital's Chief Executive Officer (CEO) was obtained. (See Appendix E)
- Permission was obtained from the Heads of Speech Therapy Departments at each hospital to conduct the study. (See Appendix B.3)
- All potential benefits and risks were explained in detail to the participant.
- Data collection procedures were non-invasive.

Confidentiality / Anonymity

- All personal data received from the participant was treated confidentially.
- Participants were informed that names would not be used in the study, rather each participant was assigned a unique number.

Actions and Competence of Researcher

The researcher has an ethical obligation to be competent and adequately skilled. The study must therefore be conducted in a principled manner to ensure accountability to fellow colleagues (Babbie, 2001:475). Therefore ethical clearance was first obtained from all concerned parties. In addition, all data collection procedures and processing of data was conducted by the researcher (a qualified audiologist).

3.5 PARTICIPANTS

3.5.1 Selection criteria

A discussion follows on the selection criteria for the participants and the interpreter.

3.5.1.1 Selection criteria for participants:

- Participants had to be hearing aid users for a minimum period of one year, as the aim of the study was to investigate utilisation of hearing aids. It was essential that the participant had the hearing aid for a sufficient amount of time i.e. at least one year and was therefore able to make judgement regarding usage and maintenance (Tye-Murray, 2004:462).

- **Monaural Fittings**
Participants had to be fitted with only one hearing aid. This was considered a criterion as government institutions mostly fit one hearing aid to adults, unless a second device is highly motivated for (Dr. George Mukhari Hearing Aid Statistics, 2004). Additionally, the questions that were asked during the interview were aimed at monaural hearing aid users.

- **Age**
Participants had to be 18 years or older. Participants within this age range could answer questions themselves and were more self-aware, and could articulate feelings, experiences, and needs regarding the issues being investigated more adequately (Alpiner & McCarthy, 2004).

- **First language Black African speakers**
Most of the population served do not speak English or Afrikaans proficiently (Swartz, 1998:33-34). This impacts on the hearing aid fitting process as well as the rehabilitation process the client participates in, thus the study aimed to investigate this specific population group. Furthermore, according to the population census data, Black Africans make up the majority of the population

distribution i.e. approximately 78% (Population Group Distribution, Statistics South Africa Census, 2001).

- Geographical Area/ Region

Two provincial government hospitals in Tshwane were selected. This was done for purposive sampling as these hospitals dispense hearing aids and also because these hospitals serve all areas (rural and urban) for the entire province (Refer to Appendix F – Map of Tshwane, Tshwane Annual Report, 2003-2004:1).

3.5.1.2 Selection Criteria for Interpreter

- Qualifications

The individual had to be qualified and trained as an interpreter i.e. at least a bachelor's degree in languages or a Postgraduate Diploma in Interpreting, and Translating that is recognized by the South African Qualifications Authority (SAQA). In addition, the person had to be registered with the Language Practitioners' Council of South Africa (Erasmus, Mathibela, Hertog and Antonissen, 1999:19, 309).

- Prior knowledge

The individual had to have prior exposure and at least one year experience with regard to the profession of speech-language pathology and audiology i.e. he / she had to be familiar with terms such as hearing aid and ear mould. This was imperative, as the researcher would have ensured that the participants fully understood the nature of the questions and terminology used (Swartz, 1998:37-38).

- Languages

The individual had to be fluent in the two languages used for the study i.e. SetSwana and Northern SeSotho as well as English. This was important to ensure correct communication between the researcher and interpreter (Swartz, 1998:38).

3.5.2 Selection procedures

Procedures for the selection of participants and interpreter will follow.

3.5.2.1 Selection procedures for participants

A method of non-probability purposive sampling was adopted as a strategy that uses the purpose of research and nature of the aims to obtain participants (Babbie, 2001:225). The population sampled was that of adults with government fitted hearing aids. Participants were contacted using their telephone numbers. Hearing aid statistics from Gauteng Province 2004 (See Appendix A.1) were used in order to decide on an appropriate sample size. During the last financial year (2004-2005) approximately 200 hearing aids were distributed by the main provincial hospitals in Tshwane. For a population of 200, it was suggested by Stoker (cited in De Vos et al., 1998:192) that approximately 32% of the population is needed for an adequate representative sample i.e. 64 participants.

- Participants were contacted telephonically. The telephone numbers were obtained from client records. The purpose and implications of their involvement in the study were explained to them. Those participants who gave their informed consent i.e. their voluntary participation based on a full understanding of the possible benefits and risks; were interviewed according to a structured interview procedure based on the pilot study results.
- The researcher developed the instrument to be used in the standard interview procedure.

3.5.2.2 Selection Procedures for Interpreter

- Interviews

Potential candidates for interpreter were identified using the Human Resource Department at Dr. George Mukhari Hospital. Once possible candidates for interpreting

were identified, these individuals were approached and a brief summary of the proposed research was discussed. Individuals who were interested then submitted curriculum vitae to the researcher. The researcher then selected an interpreter based on the informal interview and qualifications listed in curriculum vitae. The interpreter who was selected was from the same cultural/ethnic background of the participants. This helped to establish rapport, provide accurate interpretation and offer significant insights into the participants' culture (Hegde & Davis, 1995:162). The selected interpreter was willing to accompany the researcher to the hospitals for purposes of data collection. The interpreter was compensated for time and services rendered.

3.5.3 Description of Participants

The following diagram (Figure 3.1) represents the description of the participants in terms of gender, age, type and number of hearing aids, and current activity.

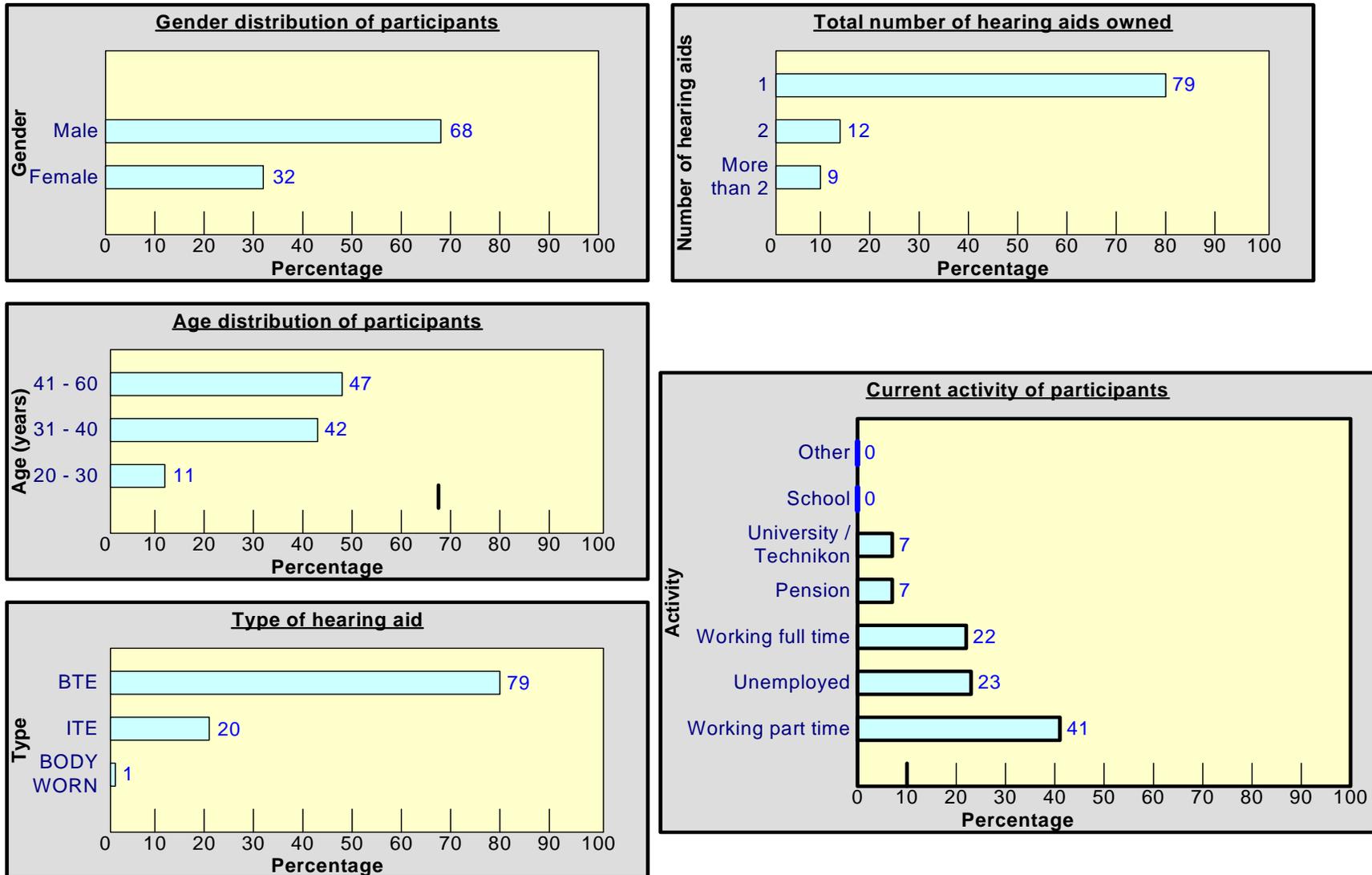


Figure 3.1: Summary of the description of participants (n=57).

Figure 3.1 represents a summary of the description of participants. Fifty seven of the targeted 64 participants responded. This indicates a response rate of 87 % which according to Neuman (2000:267) is more than adequate. Of the 57 participants, 39 were male and 18 were female. The ratio for male to female is 2:1, and this is in accordance with the gender distribution of the population according to the Gauteng Statistics (2001:1), which indicates that males are almost double in number than females. According to the age distribution of the participants, the greatest percentage of participants fall into the 31-40 year category, and this is to be expected according to the international incidence of hearing loss (National Institute for Deafness and other Communication Disorders, 2006:1).

Forty one percent of participants were reported to be working part time, and an almost equal number of participants were unemployed (23%) or working full time (22%). Seven percent were studying at a university and seven percent were receiving a pension from the government. The majority of participants (79%) have had only one hearing aid, 12% have had two and only 9% have had more than two hearing aids. The 21% who have had more than one hearing instrument stated losing and breaking their instruments as the reasons. These results are for monaural hearing aid fittings.

Sixty three percent of the participants reported wearing their hearing aid in the right ear, 33% in the left ear and disturbingly 4% indicated that they alternate wearing their aid between right and left ears. Thirty two percent indicated that they wear their hearing aids continuously and 68% reported not wearing the device continuously because according to participants they did not need to and their hearing loss was not severe enough to warrant wearing the device continuously.

The majority of participants (79%) reported to have Behind-the-Ear (BTE) hearing aids and 20% reported to having an In-the-Ear (ITE) hearing aid. This is to be expected as the majority of hearing aids available on the Gauteng State Tender are BTEs. (Tender Document #GSSC-81-2004MC).

3.6 MATERIALS AND APPARATUS

In this section, materials for the data collection and recording will be presented.

3.6.1 Materials and Apparatus for collection of data

The interview schedule and apparatus will follow.

3.6.1.1 Interview Schedule (See Appendix C.1)

An interview schedule was constructed, as opposed to using questionnaires that had already been developed such as the Expected Consequences of Hearing Aid Ownership - ECHO (developed by Cox & Alexander, 2000) as the researcher felt these questionnaires did not fully investigate and probe factors specific to this research study. However, the interview schedule developed was based on a questionnaire by McAdam (2002) to investigate utilisation of wheelchairs in South Africa. The questions on the interview schedule were asked by the researcher and answers were also documented by the researcher.

Aim of the interview schedule:

The aim was to obtain information regarding usage levels of hearing aids issued, situations where hearing aids were utilised most, maintenance and care of these instruments and needs of the participants with regard to access of maintenance and repair services.

Language of the interview schedule:

The interview schedule was developed in English only, this was done as the researcher ensured there was an interpreter available for the all of the interviews therefore there was no need to translate the interview schedule into other languages.

Format and content of the interview schedule:

The interview schedule design was based on a questionnaire developed by McAdam (2002), who conducted a similar follow-up study in Mpumalanga investigating usage of government issued wheelchairs. Further literature and standardised questionnaires were also considered in the development. The completed interview schedule comprised of nine pages, seven sections and 61 questions. The length of the interview

schedule was justified as over 75% of the questions were closed or scaled, with participants needing to indicate their selection of responses to each question, and this aided the completion of the interview schedule. More closed questions were also used to ensure accuracy, to avoid confusion and to speed completion (Neuman, 2000:261). A number of open-ended questions were also formulated to allow for an opportunity for the participants to make recommendations regarding the service delivery and to comment on the impact of the hearing device on their lives. A number of prompts were included to the interview schedule in the event that the participants did not understand the questions or could not recall the relevant details, so that opinions and suggestions could be probed further (Neuman, 2000:277). The questions were arranged so as to obtain data systematically, and to facilitate data analysis. The first few questions (i.e. Section A: Questions 1-4) were easy and non-threatening, to serve as a warm-up to the interview. The main body of the interview schedule comprised of questions to obtain information about the participant's hearing aid usage, their repair, and maintenance, and operation skills. The interview schedule took approximately 15-20 minutes to complete and according to Neuman (1997:245) this is acceptable as hour long face-to-face interviews are common.

The face-to-face interview was selected over the other type of survey options such as postal questionnaires, for the following reasons:

- Postal addresses are often not known for many of the participants of research studies especially for participants from rural areas (Leedy, 1997:196).
- The accuracy of those postal addresses that are known may be unreliable, as participants may have relocated (Leedy, 1997:196).
- Face-to-face interviews presented the opportunity for the degree of enquiry to be altered if where appropriate, for example the use of prompts to clarify the nature of the questions, or follow-up questions to elicit additional relevant information (Terre-Blanche & Durrheim, 1999:282).
- Face-to-face interviews provided the opportunity for the researcher to observe and photograph the condition of the hearing aids.
- This type of interview works well in the South African context due to low levels of literacy among possible participants (Terre-Blanche & Durrheim, 1999:282).

- Face-to-face interviews also have a higher response rate than other types of interviews such as group interviews or mailed questionnaires (Terre-Blanche & Durrheim, 1999:282).

However, according to Terre-Blanche & Durrheim (1999:281-282) there are also disadvantages with using this type of interview such as:

- Participants often have to pay to reach the interview venue. The researcher tried to address this aspect by conducting the interviews at the hospital where the hearing aid was obtained i.e. the hospital closest to the participant.
- The interviewer/interpreter may influence the responses. Having a trained and experienced interpreter minimised this. In addition, possible case scenarios were discussed prior to the interviews i.e. how to handle a participant who goes off the topic question. Issues that arose were addressed in the pilot study.

Table 3.1 illustrates the development and description of subject matter in the interview schedule.

Table 3.1: Development and description of interview schedule content.

Section	Questions	Topic	Explanation
Section A	Questions 1-4	Biographical Information	This section included personal information such as age, gender, level of qualification, etc in order to describe the participants accurately and to correlate this information to the findings during data analysis.
Section B	Questions 1-8	Fitting of hearing aids	Section B looked at the logistical aspects of hearing aid fittings such as cost, venue and transport, as well as the hearing aid history of participants. The above information was felt to relate strongly to factors associated to usage and maintenance levels.
Section C	Questions 1-11	Repairs/replacement of hearing aids	The third section included information on repair and maintenance history of the participants hearing instruments i.e. how many times did they have to repair or replace their devices. This was included in order to correlate this information to similar studies and during data analysis.
Section D	Questions 1-11	Care and maintenance of hearing aids	This section evaluated participants' knowledge of care and maintenance of hearing instruments. This information was included so that it could be later correlated to aural rehabilitation/ training they received.
Section E	Questions 1-12	Hearing aid orientation	Section E investigated the nature and content of the training participants received when they were issued with hearing aids. Additional questions regarding language of the training, were included to ascertain if this aspect played a role in future use and care of the instruments.
Section F	Questions 1-7	Use of hearing aids	This section examined specific situations and purposes that participants used their hearing instruments for, as well as satisfaction levels of the instrument as perceived by the participants.
Section G	Questions 1-6	Participants view on hearing aid orientation programmes	The last section aimed to probe information regarding how and where participants would prefer hearing aid fittings, maintenance, repairs and rehabilitation to occur; as this information would provide useful data on developing effective service delivery guidelines.

3.6.1.2 Evaluation Checklist (See Appendix D) was designed for the evaluation of the condition of the hearing aid, using information from three textbooks (i.e. Vonlanthen, 1995; Sandlin, 2000 and Sweetow, 1999) as well as the WHO 2004 Guidelines. The evaluation checklist consisted of a list of all major components of hearing aids as well as ear moulds and the researcher had to fill in whether these components were intact, missing, broken and / or clogged. This evaluation was conducted after the interview.

3.6.2 Materials and Apparatus for recording of data

3.6.2.1 Interview environment

- This was a quiet room, with a table, a number of comfortable chairs, drinking water, and adequate ventilation and lighting. Arrangements were made with the Head of Department (Speech-Language Pathology and Audiology) prior to the interview date.

- The researcher made use of the above-mentioned interview schedule, as well as the evaluation checklist.

- A Hewlett Packard HP PhotoSmart R507 camera was used to take photographs of the condition of all the hearing aids in the study. These photographs are available as a printed copy (Appendix G.1) and on a compact disc (Appendix G.2).

3.7 PILOT STUDY

Bless and Higson-Smit (2000:155) describes the pilot study as a “small study conducted prior to a longer piece of research to determine whether the method, sampling, instrument and analysis are adequate and appropriate.”

The pilot study allowed the researcher to evaluate the following aspects of this study:

- The interview schedule

Irrespective of how carefully a data collection instrument is designed, for example an interview schedule, there is always the possibility of error (Leedy, 1997:116). Pilot studies identify potential problems with the proposed research using a small number of participants before the main study is conducted. This allows space for revision and or reworking of the instrument for data collection. The results of the pilot study provide valuable information on the administration of the interview and the quality of the responses from the participants (Terre-Blanche & Durrheim, 1999:298).

- The interpreter

Furthermore, the pilot study provided an opportunity for the researcher and interpreter to clarify roles, expectations and procedures (Hegde & Davis, 1995:162-163). This allowed for any confusion and ambiguities to be elucidated. The recommendations from the pilot study were implemented before commencement of the main study. The developed interview schedule was piloted on clients from Dr. George Mukhari Hospital.

3.7.1 Participants of pilot study

Participants for the pilot study were selected according to the previous mentioned selection criteria as for the main study. Five participants were included in the pilot study, to ensure that at least one participant from each language group had a chance to be interviewed i.e. English, Setswana and Northern Sesotho. This was done to ensure that the researcher and interpreter had the opportunity to interview clients in all three languages. The interpreter was selected according to the above-mentioned criteria as for the main study.

3.7.2 Procedure for data collection for the pilot study

The interview schedule was administered to five participants (two females and three males). Once this was completed, a further set of questions pertaining to the following were asked:

- Explanation of research: was the language clear and unambiguous in all three languages and was the purpose of the research clear and acceptable?
- Was there any offensive language/terminology in the questionnaire?

- ❑ Clarity of questions
- ❑ Administration time
- ❑ Layout of questions
- ❑ Comments on the venue

(See Appendix C.2)

3.7.3 Results of pilot study and implications

Once the pilot study was completed, the researcher evaluated the accuracy of the coding on the interview schedule as well as the effectiveness of the evaluation checklist. This enabled changes to be made prior to commencement of the main study, thus ensuring accurate results and statistical data.

3.7.3.1 Context

In terms of the above aspect, the context of a pilot study is relevant as it is similar to the main study. The government hospital served as a good setting to conduct the interviews, since clients were attending the hospital for other clinics as well. Participants were therefore familiar with the venue and did not have any recommendations regarding this issue.

3.7.3.2 Procedure

In terms of procedure, researcher and interpreter established good rapport and there were no misunderstandings or errors during the interview process. This was determined by the fact that there was clear and unambiguous communication between researcher and interpreter and there were no discontinuities or clarifications during the interview process (Erasmus et al., 1999:169).

3.7.3.3 Materials and Apparatus

The consent form, explanation of the research and a question and answer session took approximately 10 minutes to complete. The interviews lasted approximately 15-20 minutes per participant, including the evaluation of the hearing aid. This was not seen as

too time consuming by the participants. In terms of adaptations to the interview schedule, the following table illustrates the specific changes made.

Table 3.2: Adaptation of the interview schedule items based on results of the pilot study.

Question items that were misunderstood / queried / misinterpreted by participants	Comments / Suggestions made by participants	Adaptation to interview schedule
<p>Question E.1 “When you were fitted with your hearing aid was an orientation program provided to you?”</p> <p>The word “orientation” was difficult to understand, even after it was explained by the researcher.</p>	<p>A simpler word / explanation should be used.</p>	<p>The word “training” was substituted in question E.1. The question now reads “When you were fitted with your hearing aid was a training program provided to you?”</p>
<p>Questions E.2, E.5, E.6 and E.7 contained the word “orientation” and therefore presented difficulty to participants.</p>	<p>Same as above.</p>	<p>The word “orientation” was changed to “training” in all of the mentioned questions. Furthermore, a copy of a hearing aid pamphlet was to be kept for the main study interviews to be used as an example to show the participants.</p>
<p>In Question F.4, it was felt by many participants that an option be available for work purposes i.e. the</p>	<p>To add a further option for work purposes and type of employment, and this impacts on</p>	<p>An extra option regarding work purposes and to describe employment, was added to the</p>

type of occupation.	whether or not the user needs a hearing aid for work or not.	answer list for questions F.4 and F.5 (as these two are linked).
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3.8 MAIN STUDY

The procedures for collection of data will follow:

3.8.1 Procedure for collection of data

- Data was collected by means of structured face-to-face interviews with pre-formulated closed, open and scaled questions in form of an interview schedule.
- The interview schedule was adapted according to the pilot study outcomes.
- At the end of the interview in order to complete the hearing aid condition section, the researcher conducted a thorough evaluation of the parts / components of the aid, and ear mould to ascertain what condition they were in. If they warranted repairs, recommendations were be made for the recipients to contact the therapist at the hospital from which they received the aid or the area closest to them currently.

3.9 DATA ANALYSIS

The quantitative data was coded to organise the responses into an appropriate format for data capturing and analysis. The coded responses were entered into a computer using the Microsoft Excel program to conduct statistical analysis of the data. A combination of

qualitative and quantitative methods was employed to analyse the data from the study i.e. data gathered in narrative form, and numeric form.

In terms of analysing quantitative data, the researcher made use of descriptive statistics. This branch of statistics describes what the data appears like, how broadly the numbers are spread, and how it is related in terms of one aspect to another aspect of the same data (Leedy, 1997:252). Results are presented in graphs, and tables.

Qualitative data i.e. responses to open-ended questions were categorised into main themes and ideas. Qualitative data analysis is primarily an inductive process of organising the data into categories and identifying patterns among the categories, according to McMillan and Schumacher (2001). Although there is no standard procedure for qualitative analysis, this does not mean it is not systematic or rigorous. Once the data was analysed, common themes, and recommendations were then identified.

3.10 VALIDITY AND RELIABILITY

When using an interview schedule, the validity and reliability of the responses must be considered. These are the fundamentals of quantitative and qualitative measurements. Validity refers to the “appropriateness, meaningfulness, and usefulness of the specific inferences made from test scores” i.e. the instrument measures what it intends to measure (McMillan and Schumacher, 2001:318).

According to Hudson (cited in De Vos et al., 2002:85) to evaluate the validity of an instrument, one needs to pose three questions:

1. How well does the instrument measure what you want it to measure (Content)?
2. How well does the instrument compare with other external criteria claiming to measure the same thing (Criterion)?
3. What does the instrument mean – why does it operate the way that it does (Construct)?

To ensure high validity the interview schedule and checklist developed was first evaluated by professionals within the field, in order to gauge feedback and critique

(Neuman, 1997:138). In addition, pertinent theoretical aspects of hearing aid fittings were included in the interview schedule and a pilot study was carried out, so that practical and constructive changes could be made to the interview schedule and interview process, thereby ensuring high content validity (Neuman, 1997:138-140). According to Leedy and Ormrod (2001:105-106), using real life settings will ensure a more representative sample and high construct validity, therefore state hospitals and clients attending these hospitals were utilised. Unfortunately, adequate criterion validity could not be achieved as there were no external criteria that measured what the interview schedule in this study claimed to measure to compare with.

Reliability refers to the accuracy or precision of an instrument i.e. not what is being measured but how well it is being measured (De Vos et al., 1998:85-86). A high degree of trustworthiness must be realised in social research. Issues such as credibility, transferability and dependability were addressed in this study by having a thorough literature review, detailed descriptions of the sample population, data collection instruments and data collection procedures.

Furthermore, the use of audio-visual methods in a research study i.e. photography is a creative way to enrich the project and provide visual records of the daily life of the group under scrutiny (De Vos et al., 1998:328). However, these photographs can be difficult to interpret and therefore issues of reliability and validity need to be addressed (De Vos et al., 1998:328). The researcher addressed these issues by ensuring the quality of the photography was adequate and each photograph was explained in detail and accurately (See Appendix G.1 and G.2 – Compact Disc).

3.11 CONCLUSION

Research conducted within the South African public health care sector is crucial, as the majority of the population utilises public institutions. However, there is still a great need for research and data regarding service delivery in the public sector. Therefore, this research examined information pertaining to hearing aids obtained from government hospitals in order to develop service delivery guidelines that are based upon sound

scientific principles. The need for such information i.e. factors that impact utilisation and maintenance of hearing aids in the public sector is fundamental as this will increase awareness regarding the specific needs of the adult hearing aid user in South Africa.

3.12 SUMMARY

This chapter clarified the aims and sub aims of the research, and was followed by an explanation on the research design employed. This was then accompanied by a description of the selection criteria and procedures. The outcomes of the pilot study was also examined, followed by detailed descriptions on the development of the questionnaire, data collection procedures and data analysis procedures.