

## **CHAPTER FOUR**

### **RESULTS AND DISCUSSION**

Aim: To present the results of the research and to clarify the meaning and impact thereof. An evaluation of the results will also be described against the outline of the information in the literature review.

#### **4.1 INTRODUCTION**

Since the move from the medical model of disability to the social model, emphasis has been placed on providing health care services and rehabilitation at primary and community levels. With the advent of the 2004 WHO Guidelines on hearing aids and services in developing countries, there is an urgent need for the acquisition of information regarding the current status of hearing aid service delivery and the needs of the hearing aid users in developing countries. This will help in addressing the problem areas and the subsequent development of sustainable and equitable hearing aid service delivery guidelines for South Africa. In order to acquire this information, research is fundamental. Throughout South Africa there is now a widespread awareness that enhanced public service is the hallmark of responsive governance. Equally important is the recognition that the level and quality of service delivery is as important as the values of ethics and accountability of the public institutions that deliver the services (Ferrer et al., 2005: 698).

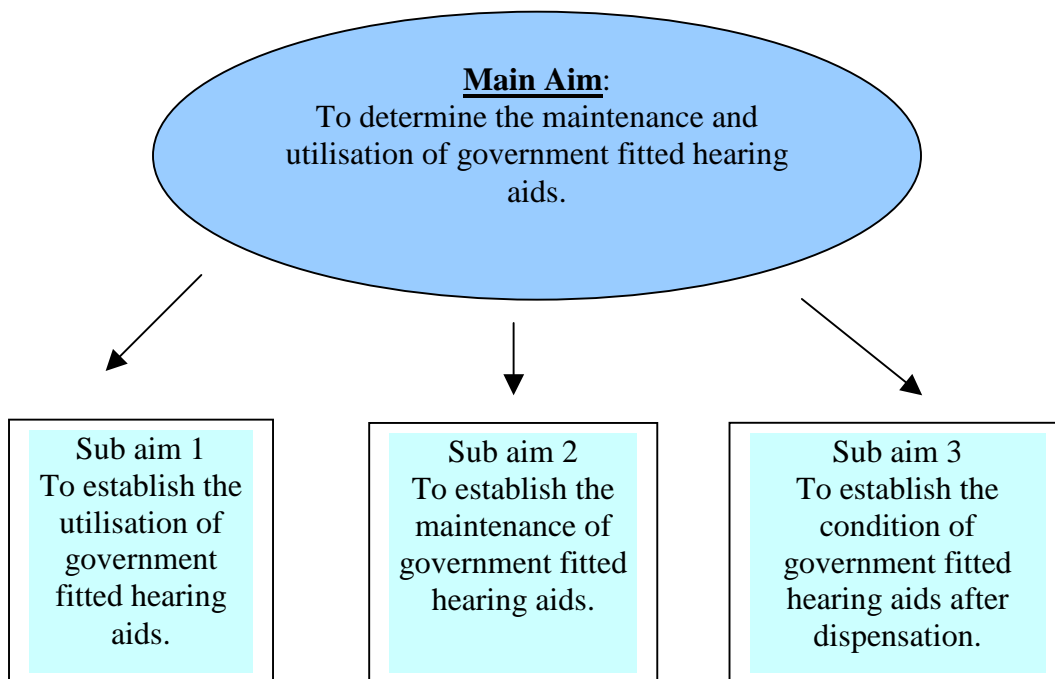
In this study, a descriptive survey was employed to investigate the maintenance and utilisation of government fitted hearing aids, these findings will assist in developing hearing aid service delivery guidelines for use in the province of Gauteng. It is envisaged that the guidelines will attempt to address the needs of hearing aid users.

Chapters 1 and 2 discussed the theoretical foundations of hearing aid fittings and aural rehabilitation as well as hearing aids in the African and South African context. Chapter 3 presented the methodological and research structure of the study. The aim of this chapter

is to describe the results of an investigation into hearing aid utilisation and maintenance by a South African population and discuss these results in terms of pertinent literature and similar research findings. Although the main aim of the research was to establish the maintenance and utilisation of government fitted hearing aids, additional information was probed on the needs of hearing aid users as well as areas of recommendations and improvements.

## 4.2 DISCUSSION OF RESULTS

The results of the study will be presented according to the sub-aims posed and elucidated through the use of visual representations.



**Figure 4.1: Presentation of sub aims in relation to achieving the main aim.**

### 4.2.1 The maintenance of government fitted hearing aids

The first sub aim of the study was establish the maintenance of government fitted hearing aids. These results include responses to items from Section B to Section D. The first area that was investigated dealt with problems experienced with hearing aids and how this may impact on the maintenance of the hearing aid (Table 4.1), followed by repair and replacement information as well as cleaning of instruments. An interpretation and discussion of the general tendency of this sub aim will conclude the section.

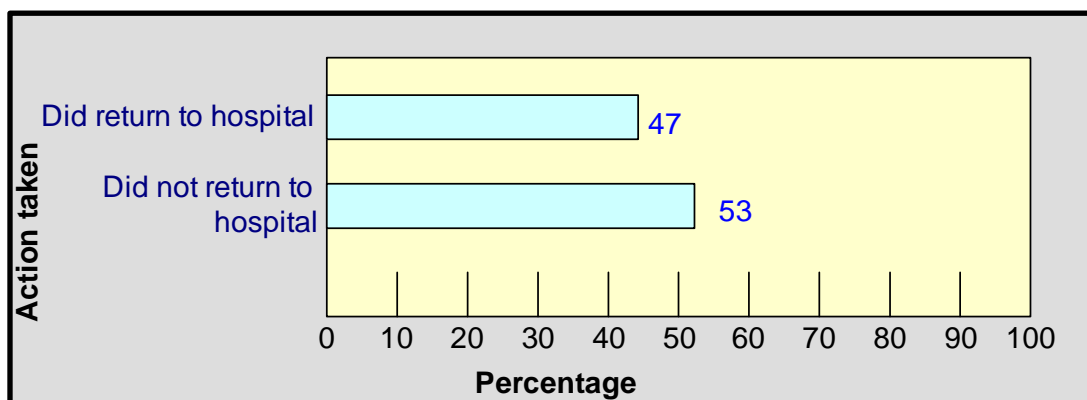
**Table 4.1: Problems experienced with hearing aid (n=57).**

<b>Problem</b>	<b>Percentage</b>		
Whistling from the hearing aid	26%		
Hearing aid is uncomfortable to wear	32%		
Hearing aid is painful to wear	16%		
Embarrassed to wear the hearing aid	74%		
Hearing aid makes the ear itchy	21%		
Hearing aid is too loud	47%		
Hearing aid is not helping	46%		
Cannot put in hearing aid properly	39%		
Hearing aid is not helping in noisy situations	47%		
Other (Specify)	25%	Lost	17%
		Broken	8%

It is obvious from Table 4.1 that the greatest problem perceived by participants is embarrassment from wearing the hearing aid (74%). This is similar to international research findings which also indicate that embarrassment and stigma attached to wearing a hearing aid was perceived as a problem by adult hearing aid users (Irwin, 2004:110). Embarrassment issues could also stem from intrinsic factors of users such as personality types and attitudes towards appearances (Wong et al., 2003:129). However, in comparison with other assistive devices such as wheelchairs, embarrassment was not perceived an issue by adult users (McAdam, 2002: 23). This could be due the fact that there is more public awareness regarding wheelchairs and spectacles than hearing aids. Additional problems reported indicated that the hearing aid was perceived as too loud

(47%) and that it does not help in noisy situations (47%). The problems experienced with loudness imply poor hearing aid fittings and possibly hearing aids that are too powerful for their specific hearing loss, which may result in further cochlear damage (Dillon, 2000:276). The 25% of participants who chose option “Other” specified that hearing aids are lost easily (17%) and break easily (8%). This response could be largely due to lack of information or understanding of information on handling and caring for hearing aids during the hearing aid orientation. Furthermore, the fact that clients do not make a large personal financial contribution towards the hearing aid i.e. instruments are subsidised by the government could imply that they did not take ownership and responsibility of the instrument and therefore lost and broke them easily (Dillon, 2000:326-327). These responses indicate that participants’ require adequate counselling on hearing loss and wearing a hearing aid, as well as a need for more public awareness of hearing aids. This can be achieved by more advertisements on hearing loss and hearing aids in the media.

Figure 4.2 represents the action taken by participants regarding problems experienced with their hearing aids.

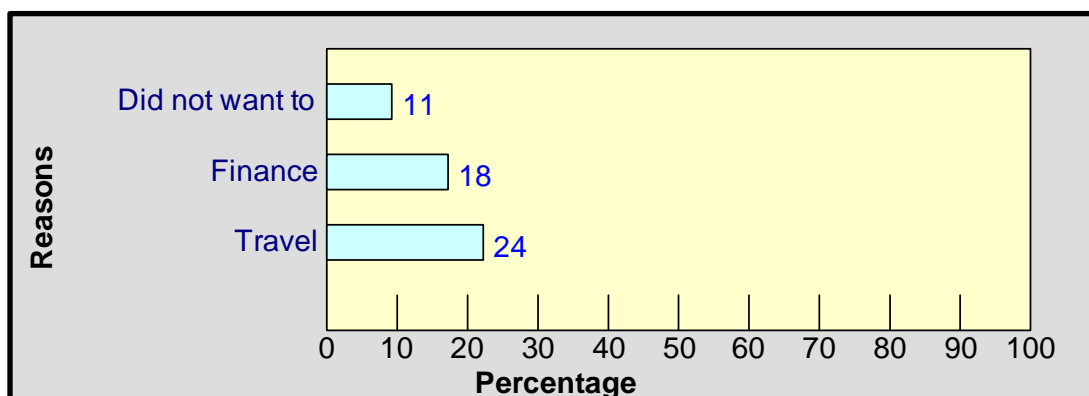


**Figure 4.2: Action taken by participants regarding problems with the hearing aid (n=57).**

Participants who experienced problems with their hearing instruments were questioned on whether or not they took their hearing aids back to the hospital for repairs, replacement or additional help. Results show that only 47% of participants took their device back if they experienced problems with the hearing aid. This amount is similar to

findings in developed countries where only half of adult hearing aid users sought further help if problems were experienced (Jerram et al., 199:450). Just over half of the participants (53%) in this study who reported they did not take the hearing aid back.

Figure 4.3 indicates the participants’ reasons for not returning to hospitals for help regarding hearing aid problems.



**Figure 4.3: Reasons for not returning to hospitals (n=30).**

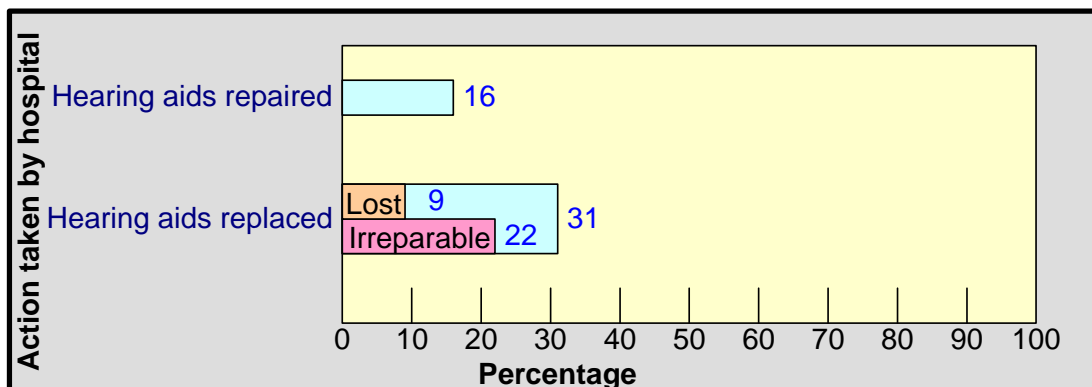
The participants that did not return to the hospital cited as travel / distance (24%) and lack of funds (18%) as the main reasons. Surprisingly, these issues i.e. transport and mobility constraints are also mentioned in research findings of developed countries, where one would expect the public transportation to be of a higher standard (Jerram et al., 1996:451). The responses of participants indicate an urgent need for a more accessible means of repair and support for hearing aids i.e. community clinics or free designated transport to and from hospitals. Table 4.2 represents the type of transport utilised by participants in this study to access public hospitals for hearing aids.

**Table 4.2: Types of transport utilised to access hospitals and cost involved (n=57).**

Type of Transport	Percentage of participants (%)	Cost (Rands)
Bus	4	R20.00
Taxi	88	R50.00
Hitchhiking	0	-
Own transport	8	-

Other	0	-
-------	---	---

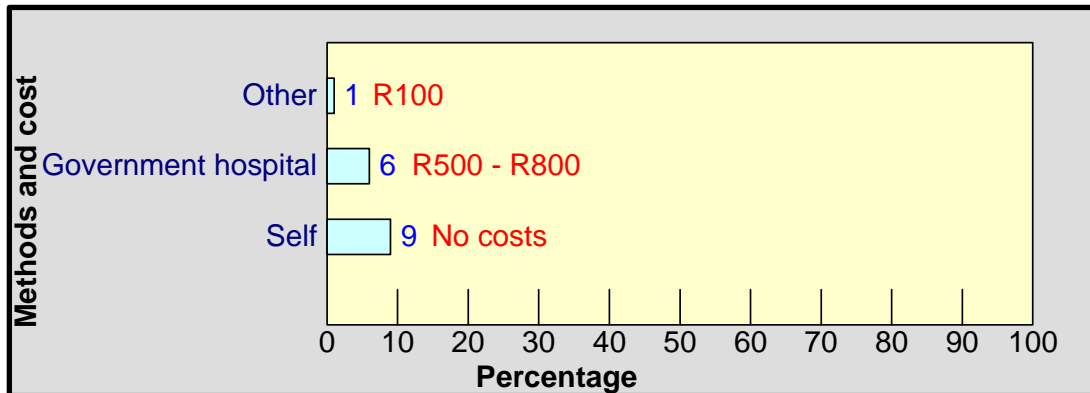
The majority of participants (88%) reported to use the taxi to get to and from the hospitals, and this cost was estimated to be approximately R50 for a return trip. Other public transportation used was the bus service and this was estimated to be somewhat less expensive than the taxi i.e. approximately R20 for a return trip. According to the population statistics, a large number of people in Tshwane are employed, however just about half of this percentage (47%) of those who are employed earn less than R1000 per month (Census 2001, Statistics South Africa Economically Active Population, Tshwane). This indicates that most participants cannot afford to come often to hospital for repairs. Figure 4.4 represents the action taken by hospitals in addressing the hearing aid problems experienced by participants.



**Figure 4.4: Action taken by hospitals (n=57).**

Of the 47% of participants who went back to hospital with their hearing aids, 31% reported their instruments were replaced and 16% were not. Reasons as to why such a high number of hearing aids were replaced were due to 22% of instruments being damaged beyond repair and 9% that were lost. All participants who had their hearing aids replaced received the replacement aid from government hospitals. The 16% of hearing aids that were not replaced were repaired. This aspect is in keeping with international research which indicates that if hearing aids are lost and or cannot be repaired, they will be replaced (Gianopoulos et al., 2002:469).

Figure 4.5 indicates the method and cost of repairs of hearing aids.

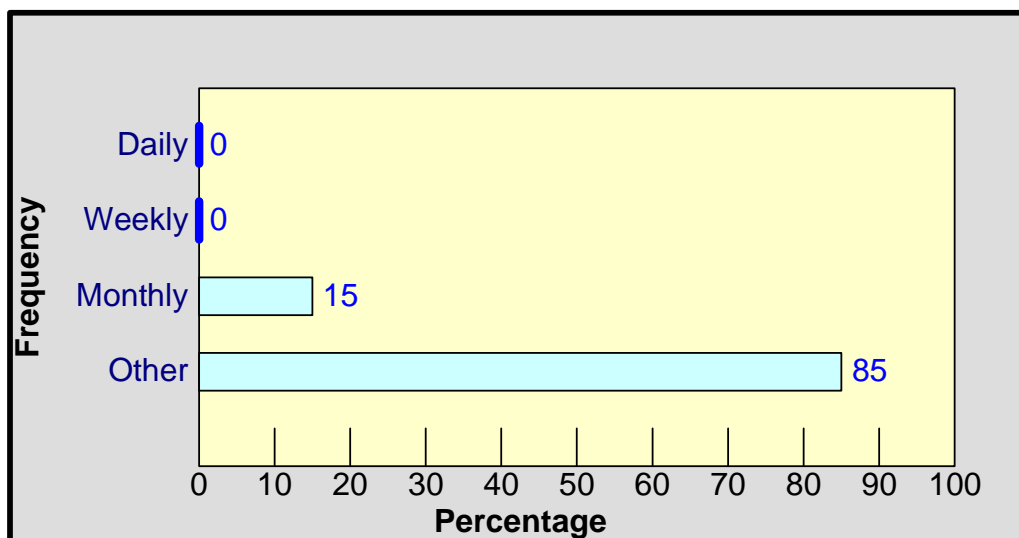


**Figure 4.5: Method and cost of repairs to hearing aid (n=57).**

Repairs done through government hospitals amounted to 6% of the participants, 9% reported that they repaired the aid themselves and the remaining 1% reported taking the hearing aid to other sources to be repaired such as the local hardware shop. None of the participants took the aid directly to the manufacturer / hearing aid company as they did not know where the companies were located. This is quite different from international findings which indicate that repairs are done at the manufacturer or the local dispenser (Humes et al., 2002:430).

Of the 6% of repairs conducted at state hospitals, 5% of participants had to pay for repairs and 1% did not have to as their hearing aids were still under guarantee. However, all participants who had their hearing aids repaired reported that repairs took approximately 3 – 5 months and those who had to pay stated the costs ranged from R500 - R800. The long waiting period for repairs impacts on participants' work, family and social contexts as they do not have their hearing aid during this period and will most likely struggle in all situations. All self-repairs were reported as immediate and no costs were involved as they utilised materials from home. This is similar to South African research findings on wheelchair repairs conducted, most were self repairs utilising materials from the home (McAdam, 2002: 24). The participants who took the aids to other places reported repairs to be completed within two weeks and costs were approximately R100.

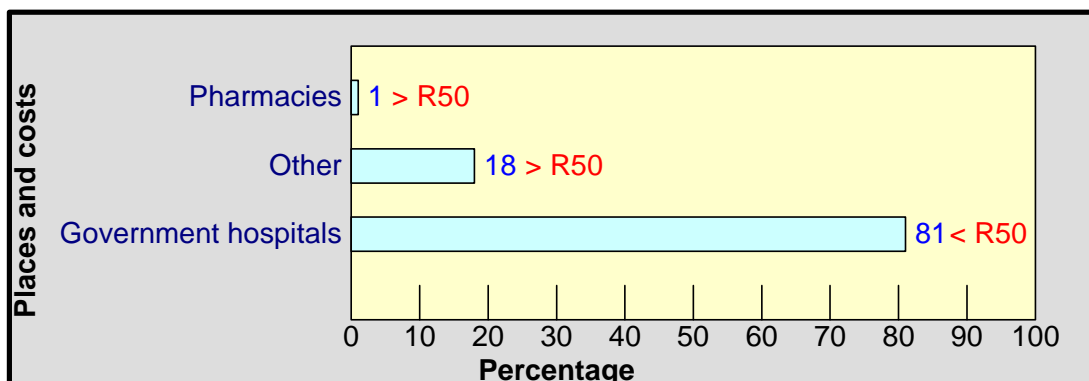
Figure 4.6 represents the frequency of replacement of hearing aid batteries by participants.



**Figure 4.6: Frequency of replacement of hearing aid batteries (n=57).**

Only 15% of participants reported that they change their batteries monthly, the majority of participants (85%) however chose option “Other” and specified that this meant whenever they had money to purchase the batteries and whenever they had time to go to hospitals to obtain the batteries. This indicates that participants utilise their hearing aids infrequently and are therefore not optimally utilising their residual hearing (Dillon, 2000:384). It is unfortunately impossible to predict how often batteries should be changed as this depends on a number of factors such as the type of instrument, hours of usage, and size of batteries (Dillon, 2000:46, 157). However, from international research there seems to be an indication that batteries are replaced by users as soon as they are depleted (Humes et al., 2002:431).

Figure 4.7 indicates the place and cost of acquisition of hearing aid batteries.

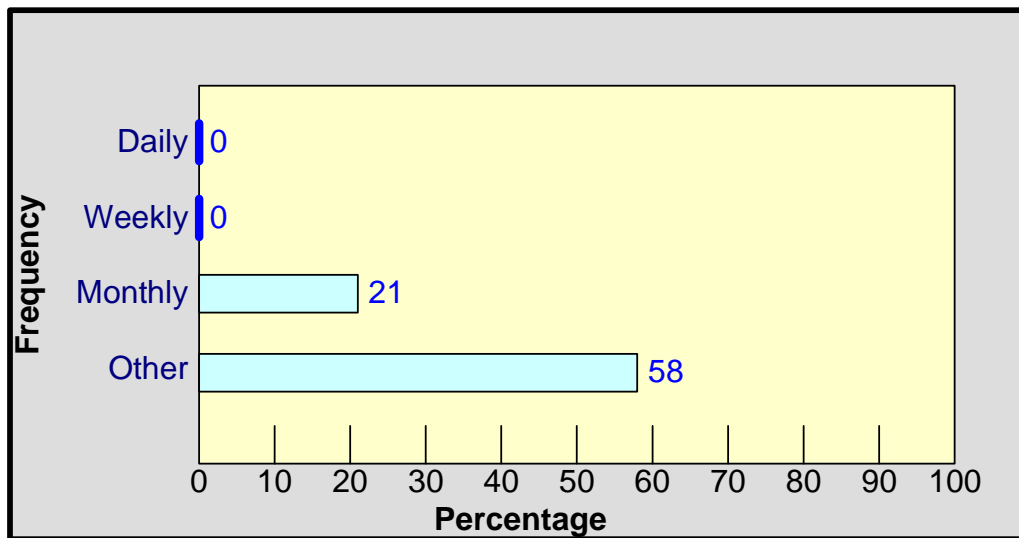




**Figure 4.7: Place and cost of acquisition of hearing aid batteries (n=57).**

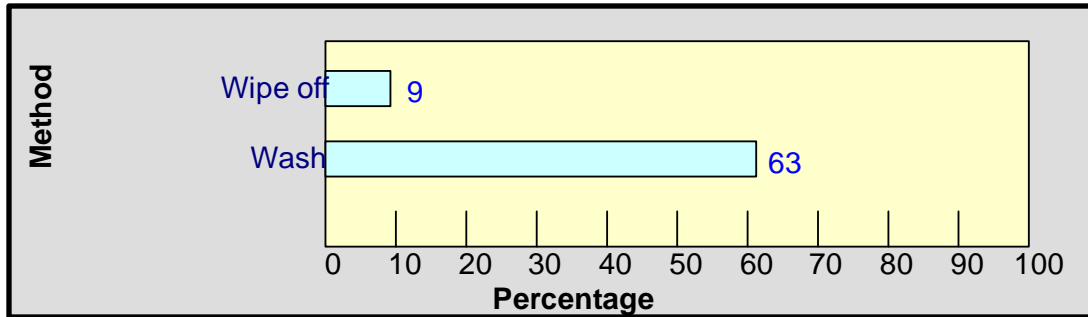
A high number of participants (81%) indicated that they purchase the batteries from state hospitals, 1% reported to buy from pharmacies, and 18% stated other sources such as local supermarkets and shops. Cost of batteries at state hospitals was reported to be less than R50 for a pack of six batteries whereas at pharmacies and supermarkets cost was estimated at more than R50. This is very expensive as according to McPherson et al., (2004:219), the average cost of a six pack of zinc air batteries is approximately \$4.50 which is approximately R30. The additional R20 that is charged could be due to importation costs. A possible solution would be for government to subsidise the cost of batteries or the development and sale of a solar powered hearing aid similar to the one currently in production in Botswana (McPherson et al., 2004:219).

Figure 4.8 indicates the frequency of ear mould cleaning by participants.

**Figure 4.8: Frequency of ear mould cleaning (n=45).**

Of the 79% of participants who had BTEs, 21% cleaned their ear mould monthly, the other 58% reported to cleaning their ear moulds only when it was dirty.

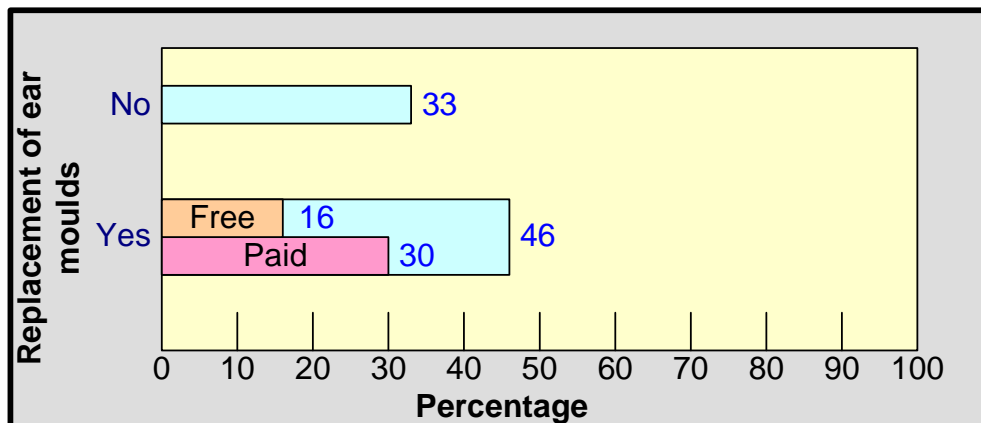
Figure 4.9 is representative of the method utilised by participants to clean their ear moulds.



**Figure 4.9: Method of ear mould cleaning (n=45).**

Sixty-three percent reported that they cleaned their ear mould by washing it in warm water and soap while the remaining 9% reported that they would only wipe it with a cloth or tissues. This indicates that most participants do indeed know the correct method of cleaning an ear mould. The 9% of participants who only wipe their ear moulds could be at risk for possible ear infections which may even result in further hearing loss (Sandlin, 2000:161).

Figure 4.10 indicates the replacement and cost thereof of participants' ear moulds.



**Figure 4.10 Replacement and cost of ear moulds (n=45).**

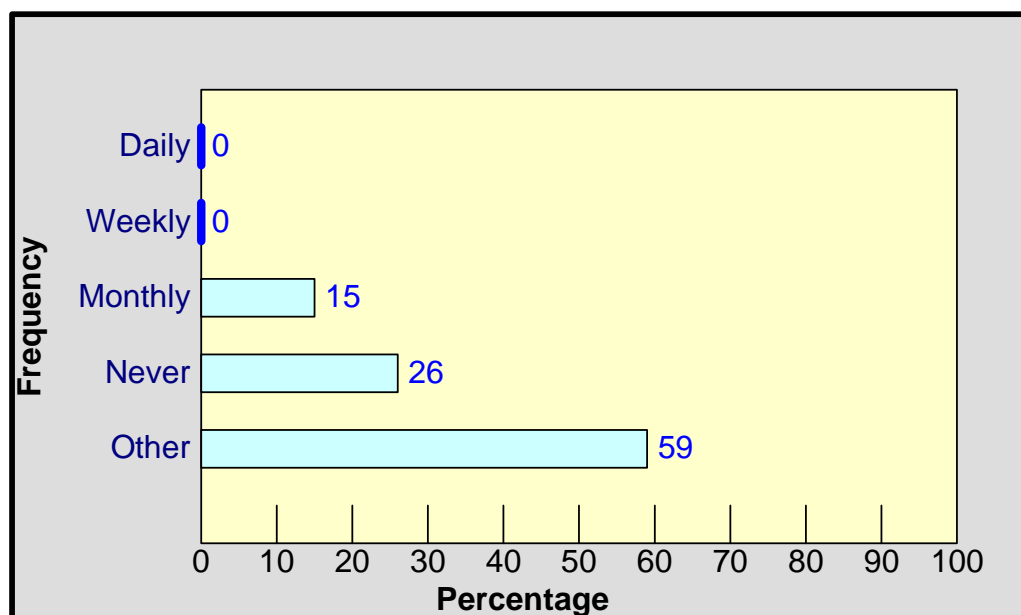
Almost half of the participants (46%) have had their ear moulds replaced at government hospitals. Sixteen percent said this was done for free while 30% reported that they paid between R50 - R70 for a new ear mould. Table 4.3 represents the percentage of participants who have had their ear mould tubing replaced.

**Table 4.3: Replacement of ear mould tubing (n=45).**

Replacement of ear moulds tubing	Percentage
Yes	3%
No	76%

Only 3% of the sample have had their ear mould tubing replaced and this was done for free at hospitals by the audiologist. This indicates that the majority of participants have not replaced their ear mould tubes which can impact on sound quality transmitted to the ear via the ear mould should the tubing be cracked or hardened. Visual representations of ear mould cleaning i.e. videos or photographs of correct cleaning methods may help to increase overall understanding of hygiene of ear moulds for clients.

Figure 4.11 reveals the frequency at which participants clean their hearing aids.

**Figure 4.11: Frequency of hearing aid cleaning (n=57).**

Twenty-six percent of participants reported to never having cleaned their hearing aids, while 15% of participants clean their aids monthly. This is not in keeping with what is usually recommended to clients internationally and nationally, which is to wipe the hearing aid daily and to keep it in a Dry Aid kit every night, especially in hot and humid climates such as Gauteng (Dillon, 2000:327). If the hearing aid is not wiped daily and kept in a special drying kit, the microphone or the tone hook of the hearing aid may become clogged with debris which in turn affects sound quality and overall benefit derived from the hearing aid (Dillon, 2000:102). Over half of the participants (59%) reported that they do not use a specific time frame for cleaning but rather clean the instrument only when its very dirty (38%) and if they have the time (21%). Seventy-two percent of participants reported wiping the hearing aid with a soft cloth to clean it, while a shocking 2% reported to washing the instrument. Washing the instrument will lead to permanent damage of the inner circuitry of the device (Sandlin, 2000:448) and this will in turn lead to replacement of the instrument, which will be at the expense of the government. Furthermore, during this time the client will be left without a device and this will affect their work, family and social lives. Once more, the use of visual representations i.e. videos or photographs of correct hearing aid cleaning methods may help to increase lifespan of hearing aids of clients.

The main findings for the first sub aim of the study indicate that there are several factors which negatively influence the maintenance of hearing aids. One of these factors is finance. The cost of travelling to and from hospitals, the cost of batteries as well as the cost of repairs to hearing aids plays a key role in the whether or not government fitted hearing aids are maintained and kept in good condition. Furthermore, distance from hospitals was also related to whether or not hearing aids and ear moulds were taken in for repairs or replacement as a high number of participants preferred to conduct repairs by themselves or at local shops. These findings illustrate the need for servicing, repairs and maintenance of hearing aids to be conducted at primary health care level i.e. in the community.

#### **4.3.2 The utilisation of government fitted hearing aids**

Results for this sub aim are responses from items in Section E, F and G of the interview schedule. Information is firstly presented on the hearing aid training conducted, specific uses of hearing aids and participants' views on hearing aid services.

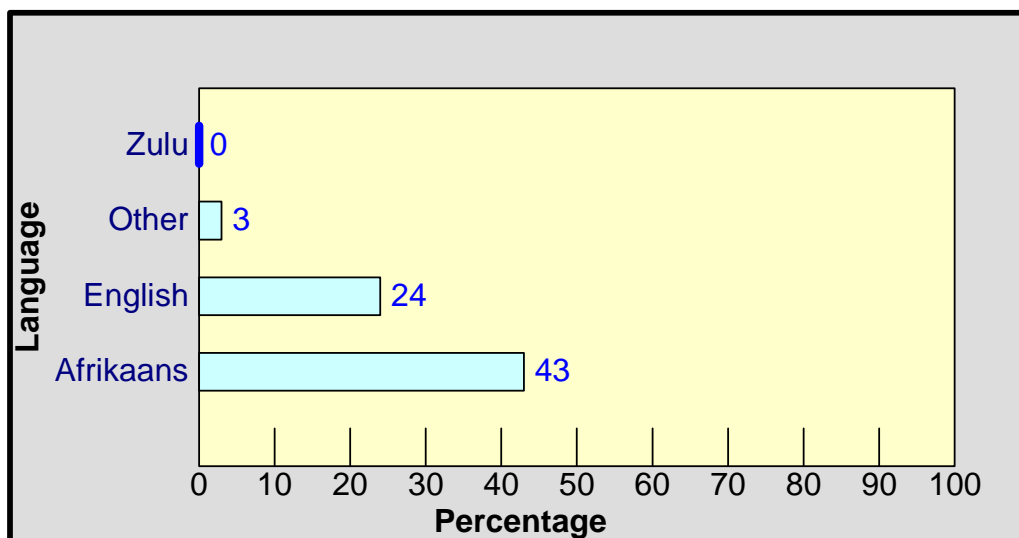
Utilisation of hearing aids is closely related to the hearing aid orientation program that was conducted when the hearing aid was first received. Table 4.4 represents the percentage of participants that recall having a hearing aid orientation programme.

**Table 4.4: Orientation programme (n=57).**

Orientation programme done	Percentage
Yes	72%
No	28%

Seventy-two percent of participants in the study recall having a training program conducted, however 28% reported that no such activity occurred when they first received their instruments. Of the participants who experienced a training program, only 3% reported that it was done in their first language i.e. a Black Africa indigenous language. This indicates that the majority of participants had a training program conducted in their second language, which could possibly impact on understanding of information thereby resulting in a lack of awareness on utilisation and maintenance of the device.

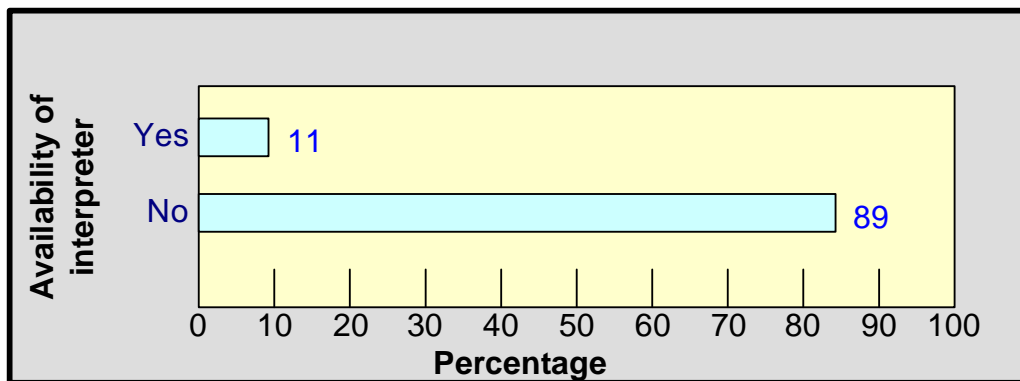
Figure 4.12 represents the language that training programs were conducted in.



**Figure 4.12: Language of hearing aid orientation (n=57).**

Figure 4.7 indicates that a high percentage of the participants (43%) received their hearing aid orientation program in Afrikaans. This is followed by English (24%) and only 3% reported that it was conducted in other languages. This is to be expected as the majority of audiologists and speech-language pathologists are English or Afrikaans speaking (Louw and Avenant, 2002:146) This presents a problem such as miscommunication (clients do not fully understand the audiologist), as a significant percentage (39%) of the Tshwane population speaks Setswana and Sesotho according to the Statistics South Africa Census 2001 (Dominant Home Language Tshwane). The above results clearly indicate a need for the hearing aid orientation to be conducted in the predominant Black African languages of the province. There is also a need for more Black African audiologists and speech-language pathologists in South Africa in order to ensure that information is correctly transmitted to clients in their first language.

Since the majority of hearing aid orientations were conducted in English and Afrikaans, participants were further questioned on availability of interpreters for the training and orientation. Figure 4.13 indicates the availability of interpreters.



**Figure 4.13: Availability of interpreters (n=57).**

Eighty-nine percent reported that there were no interpreters available and 11% indicated that there were people available to interpret, however participants were unsure if these individuals were qualified employees of the hospital. This indicates a great need for the employment of qualified and trained interpreters in the public health sector.

**Table 4.5 Understanding of orientation programme (n=57).**

Complete understanding of orientation program	Percentage
Yes	16%
No	84%

Sixteen percent of participants reported that they understood everything that was done in the hearing aid training session regardless of language while the majority (84%) indicated that they did not fully understand everything that was done during the training due to the language differences. This shows that most participants went home with their hearing aids without fully understanding how they work, how to clean them and how to troubleshoot problems. This impacts on the utilisation, maintenance and condition of these instruments.

Figure 4.14 indicates the various areas that were covered with participants during the hearing aid training program.

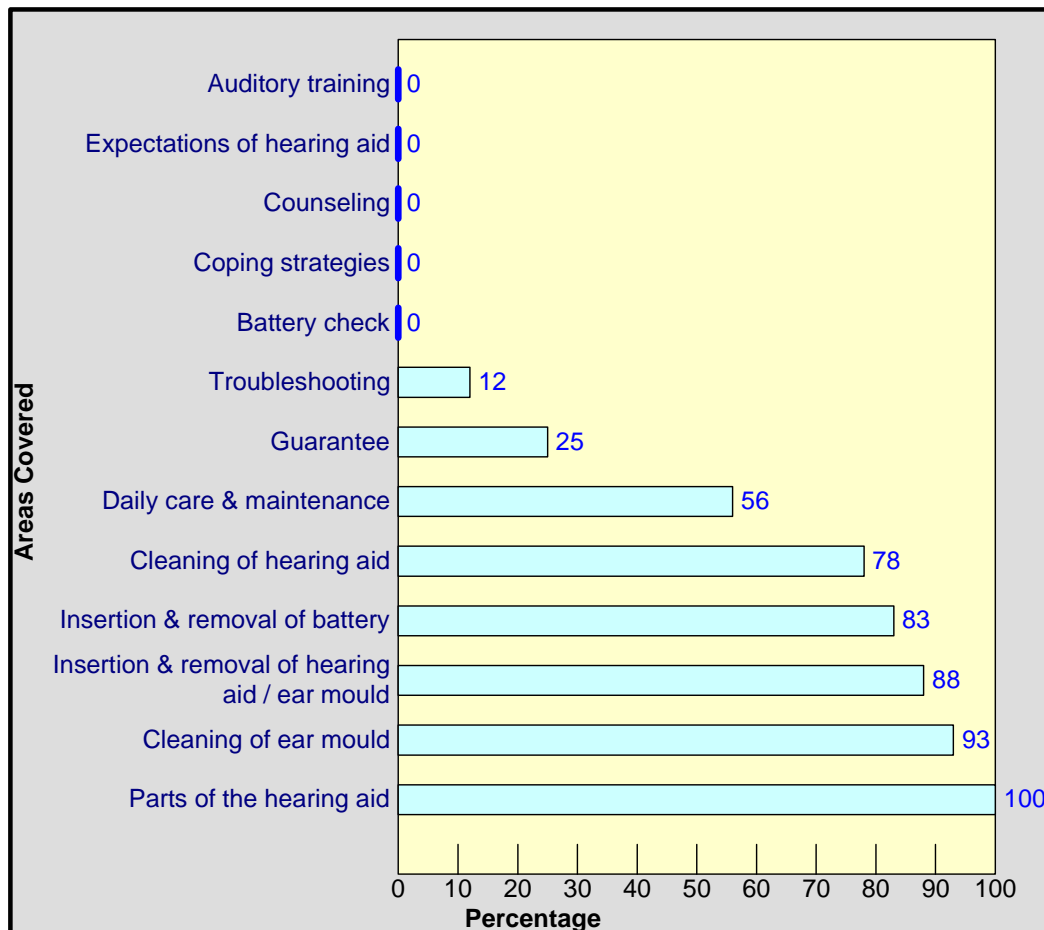


Figure 4.14: Areas covered during the hearing aid training program (n=57).

The above figure represents all areas that should be covered during a hearing aid program (Dillon, 2000:323-339):

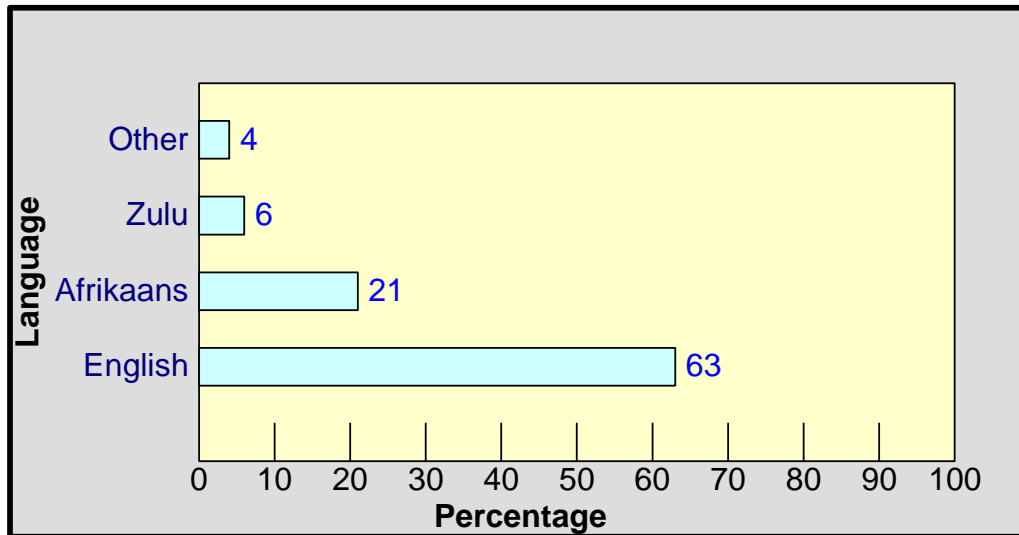
- **Parts of the hearing aid:** The client must be familiar with all parts of the instrument is he / she is too properly utilise it.
- **Cleaning of ear mould and hearing aid:** The client must be aware of how to clean and maintain the ear mould and hearing aid for hygiene and increased lifespan purposes.
- **Insertion and removal of hearing aid and battery:** The client has to be independent in hearing aid use and this means correct insertion and removal of the hearing and battery.



- **Battery check:** This aspect is extremely important as clients must be able to check the power output of the battery that is in their hearing aid, as this will be a good indicator for when new batteries are required.
- **Troubleshooting:** Many repairs to hearing aids are minor and can be done by clients who can diagnose the problem. It is expensive and unnecessary for aids to be returned to the clinician or manufacturer for common problems such as a clogged microphone or a dead battery.
- **Guarantee:** The client must be aware of the guarantee period for his / her hearing aid, as well as the guarantee on specific parts of the hearing aid.
- **Counselling and expectations of hearing aid:** This is vital to the adult hearing aid user, as clients must have a good understanding and acknowledgement of their hearing loss and realistic expectations of their hearing aid.
- **Coping strategies and auditory training:** Clients must be introduced to basic training strategies that are available such as speech reading as well as ideas on how to adjust to new sounds and experiences with the hearing aids.

The above areas represent skills that must be mastered by the hearing aid user if independent hearing aid use is to be possible. Of all the areas that are supposed to be covered during a training program, all participants in this study indicated that the basic components of a hearing aid were explained to them. Furthermore, areas covered which received a high recognition from participants were cleaning of hearing aids and ear moulds, insertion and removal of hearing aids and battery. However, participants reported that certain areas such as battery check, expectations of hearing instruments, and counselling on hearing loss were not covered by the audiologist at all. This is important because if counselling and expectations of the hearing aid are not conducted some clients may expect too much from the hearing aid, which can then lead to frustration, low satisfaction and possibly under utilisation or non use of the device. Only 12% indicated that some troubleshooting of common problems was explained to them.

Figure 4.15 represents the language of the pamphlet or training manual given to participants.



**Figure 4.15: Language of hearing aid pamphlet / training manual (n=57).**

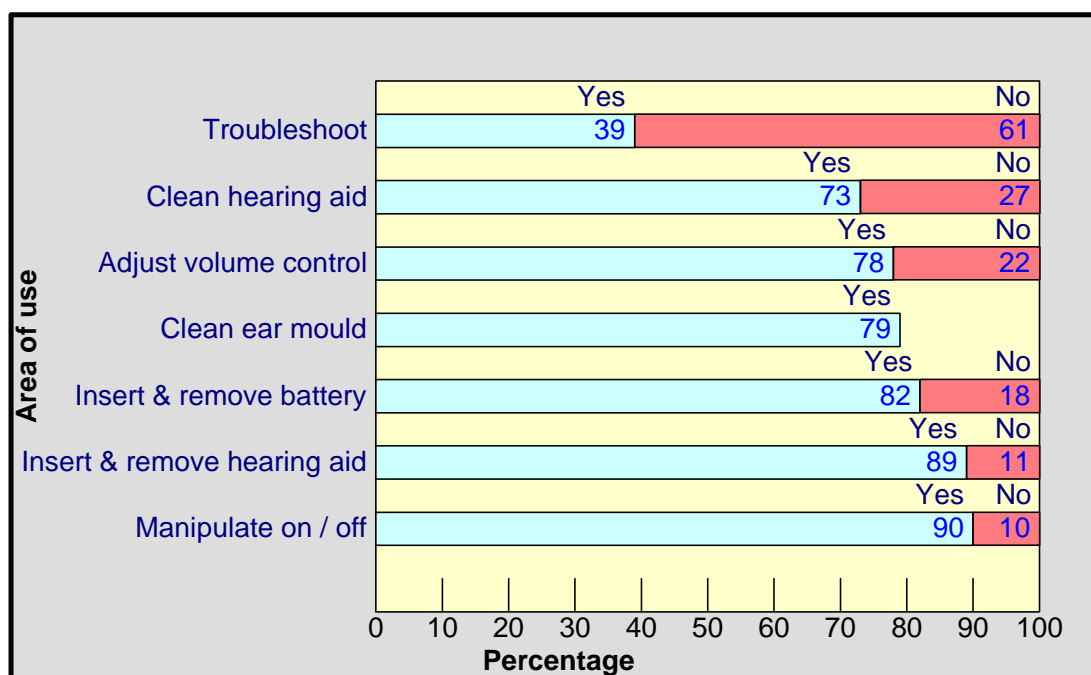
It was observed in the Gauteng Provincial Profile (Statistics South Africa, 1999:39) that approximately 94% of individuals in Gauteng over the age of 20 years can read and write in at least one language i.e. their first language. However as mentioned in Chapter Two, over 40 % of the adult population have had only primary school education and therefore their reading levels would be not be at a high school level. In Figure 4.7 a large percentage (63%) of the participants indicated that they received a hearing aid pamphlet that was in English. Six percent of participants indicated they received a pamphlet in Zulu, while only 4% reported that it was in another language i.e. a Black African language such as Setswana. Six percent did not receive a pamphlet at all. Table 4.6 represents the helpfulness of the hearing aid pamphlet / training manual as perceived by participants.

**Table 4.6: Helpfulness of pamphlet (n=57).**

Helpfulness of pamphlet	Percentage		
Yes	20%		
No	74%	Could not read	Lost
		52%	22%

Twenty percent of participants reported that the pamphlet was of some help to them. The remaining participants indicated that they either could not read or understand it (52%) or they lost it (22%). These responses clearly indicate a vital need for the availability of hearing aid pamphlets and training manuals in all of the official languages of South Africa, as well as a pictorial manual with visual representations for semi-literate and illiterate adults.

Figure 4.16 indicates the participants’ ability to demonstrate to the researcher if they knew the correct way in which to use and maintain a hearing aid.

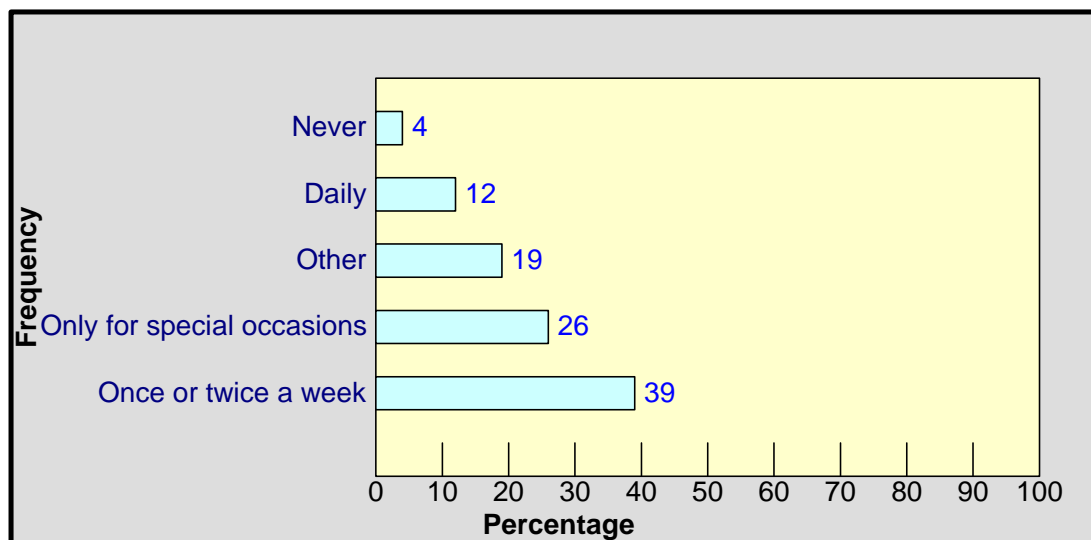


**Figure 4.16: Participants ability to demonstrate hearing aid use (n=57).**

Responses show that a high number of participants could demonstrate correct cleaning techniques for the ear mould and hearing aid as well as insertion and removal of the instrument and battery. This is promising, as it indicates that most participants are comfortable with basic care and use of a hearing aid. This corresponds to the responses in Figure 4.8, which indicated that these areas were covered during the training program. Sixty one percent of participants did not know how to troubleshoot simple and common problems experienced with hearing aids. For clients who reside in rural communities, the

ability to troubleshoot simple problems is very important as these clients will not be able frequent provincial hospitals on a regular basis for minor repairs.

Figure 4.17 represents that frequency of use of hearing aids by participants.



**Figure 4.17: Frequency of use of hearing aids (n=57).**

A large percentage of participants (39%) indicated that they wear their hearing instruments once or twice a week however only 12 % reported to using it daily. This indicates that most participants are at risk for auditory deprivation as they do not wear the device on a daily basis and may take even longer to adapt to amplification (Sandlin, 2000:471). Four percent of the participants no longer utilise their hearing aids at all. Of the 19% of participants who chose the option “Other” specified that they only wear the hearing aid at home (10%) and only if they need it i.e. if they feel they cannot cope (9%). This also indicates the risk for auditory deprivation and longer adaptation periods. These results are not in keeping with findings from research conducted in similar contexts i.e. in a developing country. Results from a study conducted in Ghana showed that 45% of adults used their hearing aids all the time every day and almost 26% of adults who were fitted used their hearing aids daily but not all the time (Amedofu et al., 2004:119). The lower utilisation percentages for South African can be largely attributed to a combination of several factors including language issues, finance, transport and cosmetic concerns.

Figure 4.18 reveals the situations and frequency of hearing aid use by participants.

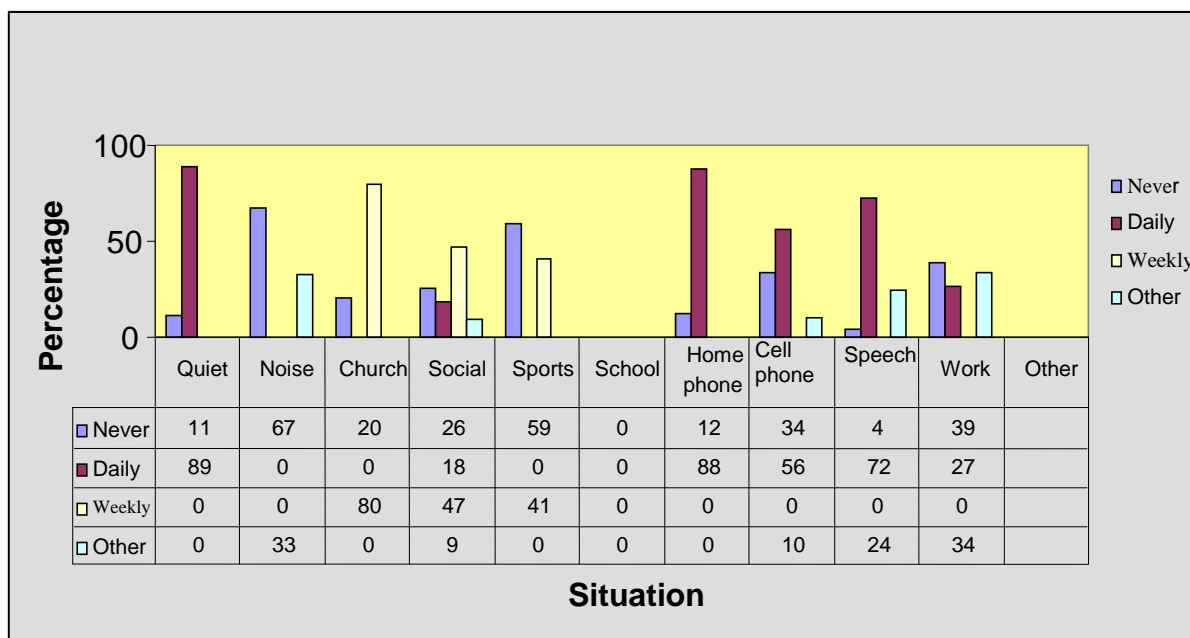


Figure 4.18: Situations of hearing aid use (n=57).

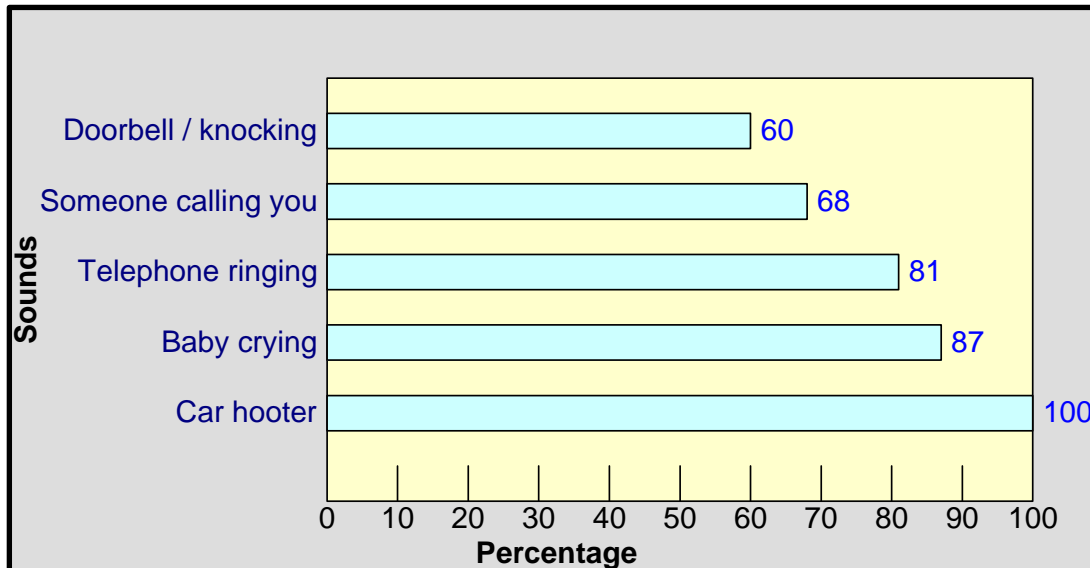
From the above figure it is apparent that participants feel more comfortable using their hearing aids in quiet situations and at home, as it was in these two situations that most participants used their hearing aids on a daily basis. This may be attributed to a number of reasons such as a lack of cosmetic concerns at home i.e. participants feel more comfortable wearing the hearing aid with family members and do not feel judged as being incompetent. Telephone usage indicated that a high percentage of participants (88%) made daily use of their hearing aids when talking on the home telephone, while only 56% made daily use of hearing aids when talking on cellular telephones. This could be attributed to the environment in which both types of telephones are utilised i.e. the home telephone in a quiet location and most individuals feel at ease speaking at home,

whereas a cellular phone may have to be answered at any location where there maybe noise present at the time and other persons around.

A great number of participants (80%) reported to wearing their hearing aids on a weekly basis for church and for other social activities on daily basis. It was observed however that 67% of participants never make use of their hearing aids in a noisy environment due to possibly poor speech discrimination or over amplification of noise. Furthermore, only 27% of participants utilised their hearing aids on a daily basis for work purposes. This indicates that the majority of individuals interviewed would prefer not to disclose their hearing status to colleagues and superiors. This response also corresponds to results in Table 4.1, which indicated that the greatest problem perceived by participants was embarrassment when wearing their hearing aids. This demonstrates a lack of awareness in society regarding issues of hearing loss and hearing aids, which indicates that tolerance and acceptance of adult hearing aid users cannot be fostered until the public becomes more informed. The acceptance of hearing loss and hearing devices by society will increase utilisation of hearing aids in public situations and enhance communication between individuals with hearing loss and those with normal hearing.

The above findings indicate that more counselling regarding acceptance of hearing loss and hearing aids is required. Furthermore, the use of hearing aids in certain situations is lacking and this indicates a need for coping strategies and auditory training for clients in different listening situations. This may be achieved by having support groups for clients in the community.

Figure 4.19 represents the participants hearing ability for every day sounds with their hearing aids on.



**Figure 4.19: Hearing ability for everyday sounds (n=57).**

All participants indicated that they could hear a car hooter while wearing their hearing aid. A high number of participants reported that they could hear the telephone ringing and a baby crying. However, just over half reported that they could hear knocking on a door and people calling them. These results indicate that most participants are aware of warning and alerting sounds in their daily environment. This is very important for safety and communication in the participants' life.

The following table indicates the three most important uses of the participants hearing aids.

**Table 4.7: Three most important uses of hearing aid (n=57).**

Most important use of hearing aid	Percentage
1. Watching Television	97%
2. Conversation	88%
3. Work	68%

A large number of participants (97%) reported that they utilise their hearing aid for watching television at home and for conversation purposes, this correlates to the

responses in Figure 4.11, where participants reported to utilising their hearing aid at home. Sixty eight percent of the participants indicated that they use the device for work. This also correlates to responses in Figure 4.11, where almost 61% reported utilising their hearing aids for work. These responses indicate that participants feel most comfortable utilising their hearing aids in quiet situations e.g. the home environment and therefore most utilise their hearing aids for listening situations in that environment. This also indicates that there needs to be more public awareness in the workplace regarding hearing aids, as this would increase participants’ confidence in disclosing their hearing status and hearing aids at work.

The following table is representative of the positive and negative effects the hearing aid has had on the participants’ lives. This important as is reveals the impact of an assistive listening device on an individual’s daily life and well being.

**Table 4.8: Positive and negative effects of the hearing aid on participants’ lives (Excerpts from responses to Question E.5) (n=57).**

	<b>Positive Effect (79%)</b>	<b>Negative Effect (21%)</b>
Effect of hearing aid on participants’ lives	“...it has made me hear my family again...”	“...this thing is too much, I don’t like to wear it...”
	“...when I can hear sounds then I feel good and I communicate with all people...”	“... people at work don’t want me to go down the mines, they think I can’t hear...”
	“...I hear all the things the pastor is saying in church and I can watch TV...”	“...everybody is always asking me what that thing is and I feel bad...”



“...many times I couldn’t hear but I now I can hear and I am happy...”	“...I can’t find work, even with this machine, they think I’m stupid, so I don’t wear it...”
“...the machine is good. It helps me at work and home...”	“...it’s very loud and noisy. It makes too much noise and the ears pain...”

Table 4.8 indicates that a 79% of participants have positive feelings towards their hearing aids while 21% have negative feelings towards the device. This indicates that most participants are pleased with their device and how it functions. From the negative comments however, it is apparent that embarrassment and work plays a major role on the perceived impact of the device. This also suggests the need for adequate counselling and increased public awareness.

Participants were also asked to comment on ways on which to improve the hearing aid service in the public health sector. Table 4.9 highlights the recommendations made by participants.

Recommendations	Yes	No
Need for interpreters	93%	7%
Need for extra training sessions	5%	95%

**Table 4.9: Recommendations from participants (n=57).**

A high number of participants (93%) agreed that an interpreter should be available during the training session as it would make the information easier to understand, however 7% reported that there was no need for an interpreter as they were unsure if an interpreter would be of any help. As expected, 95% of participants indicated that that only one training session is adequate for them, as they do not want to return to the hospital due to

logistical reasons. Only 5% of participants recommended the need for extra sessions and more information regarding their hearing aids. All participants reported that they would prefer to go to a clinic for hearing aid fittings and follow-ups, as it will be easier in terms of accessibility, expenses and time. This correlates to research conducted in another developing country where transport and finance were also key issues (Amedofu et al., 2004:119).

From the findings of sub aim 2, it is evident that multilingualism presents an obstacle in terms of utilising hearing aids correctly and to their full benefit. This suggests the necessity for more qualified and trained interpreters to be employed in the public sector, as well as the need for the employment of more Black African speech-language therapists and audiologists. It was also apparent that the attitude of the participants towards their hearing aid influenced usage of the device. Those who had a negative attitude towards their hearing aids, made little or no use of the instruments. It has been shown in previous research that counselling will help with expectations and attitude towards amplification. Therefore there is an urgent need for pre-fit and post-fit counselling for clients in the public sector.

#### **4.2.3 The condition of government fitted hearing aids after dispensation**

Results for this sub aim reflect the evaluation of the condition of participants' current hearing aid. It is important to note that not all participants had brought their hearing instruments with them when they arrived for the interview. Only 25 participants brought along their hearing aids / ear moulds / parts of hearing aids. This confirms the findings for the frequency of use of hearing aids, which showed that 39% of participants do not use their hearing aids all of the time. Table 4.10 represents the different types of hearing aids of the participants.

**Table 4.10: Different types of hearing aids in the study (n=25).**

Type of hearing aid	Number of hearing aids	Number and percentage of broken hearing aids
BTE	16	7 (44%)

ITE	8	3 (38%)
Body worn	1	1 (100%)

The above results indicate that the majority of participants (44%) were fitted with BTE hearing aids. This was to be expected because as mentioned in Chapter Two, most hearing aids on the government state tender are BTEs. Results also revealed that more BTE hearing aids were broken than ITE hearing aids, this can attributed to the fact that more BTEs were fitted than ITEs.

Table 4.11 represents the condition of the above hearing aids, as well as the ear moulds.

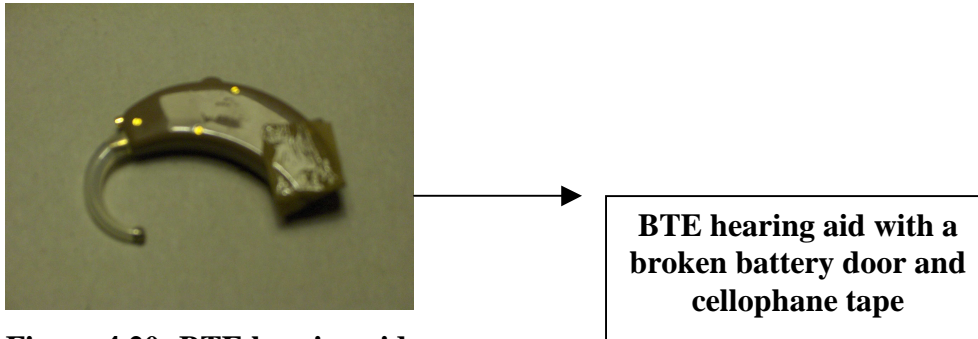
**Table 4.11: Condition of hearing aids and ear moulds after dispensation (n=25).**

Condition	Percentage
Intact, functioning hearing aid	54%
Missing / lost ear mould	54%
Broken, cracked or missing battery door	21%
Intact but no longer functioning hearing aid	17%
Intact ear mould	8%
Missing hearing aid components	8%
Missing ear mould tube	4%
Broken hearing aid outer casing	4%
Missing / lost hearing aid	4%

From the above table is it apparent that just over half of the participants (54%) have intact, functioning hearing aids, however there is an equal amount of missing or lost ear moulds. This indicates that although the hearing aid is still in good working order, participants cannot utilise them without an ear mould. Furthermore, 21% of hearing aids had a broken, cracked or missing battery door. This indicates that battery life is comprised. Seventeen percent of hearing aids were intact but were no longer functioning, which suggested possible problems with the inner circuitry.

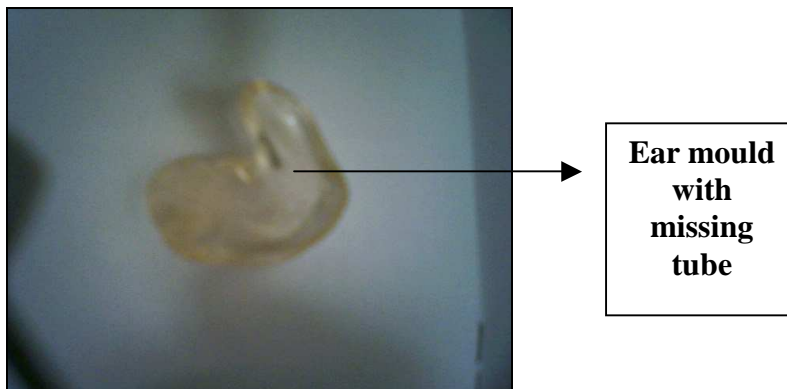
Photographs were taken with a digital camera of all hearing aids that were evaluated. All photographs taken are available as a printed document (See Appendix G.1) and on a Compact Disc (See Appendix G.2).

Figure 4.20 and 4.21 are examples of two hearing aid instrument photographs taken.



**Figure 4.20: BTE hearing aid.**

Figure 4.13 represents a BTE hearing aid of which the battery door has been broken and is stuck back together with cellophane tape. This indicates the need for hearing aid repairs. It also indicates that the battery life could possibly be affected if the battery is not making proper contact with the interior mechanisms and this will in turn influence the sound quality resulting in inadequate or intermittent amplification (Dillon, 2000:113).



**Figure 4.21: Ear mould.**

The figure is a photograph of an ear mould with a missing tube. The above ear mould belongs to a client who cannot utilise his BTE hearing aid until the tube on the ear mould is replaced.

It is apparent from the findings of this sub aim that most government fitted hearing aids and accessories are poorly cared for and maintained. The reasons for this are varied and were discussed in sections B, C and D. Poor maintenance and lack of servicing of hearing aids does not only pose a hygiene problem to clients' but also impacts on the quality of sound received by the listener which in turn influences daily activities and social communication.

#### **4.4 CONCLUSION**

The main aim of this research was to determine the maintenance and utilisation of government fitted hearing aids in order to develop hearing aid service delivery guidelines. There appears to be a general consensus about self-image and wearing of hearing aids, as most participants are embarrassed to wear their devices. This could be due to inadequate and lack of counselling and public awareness. Furthermore, the maintenance for ear moulds seems to be worse than that of the hearing aid. This could be attributed to lack of training on daily care and maintenance. It was therefore imperative to carefully examine the implications of findings for each sub aim and this will aid the development of service delivery guidelines to ensure optimal maintenance and utilisation of government fitted hearing aids.

#### **4.5 SUMMARY**

This chapter provided a presentation and summary of the results from the research study, which included the interview schedule and evaluation checklist. Results were organised in terms of the three sub aims and how they related to the main aim. Each sub aim was concluded with a discussion of the responses. These results will establish the foundation whereupon service delivery guidelines can be developed for the distribution of government hearing aids in Gauteng.